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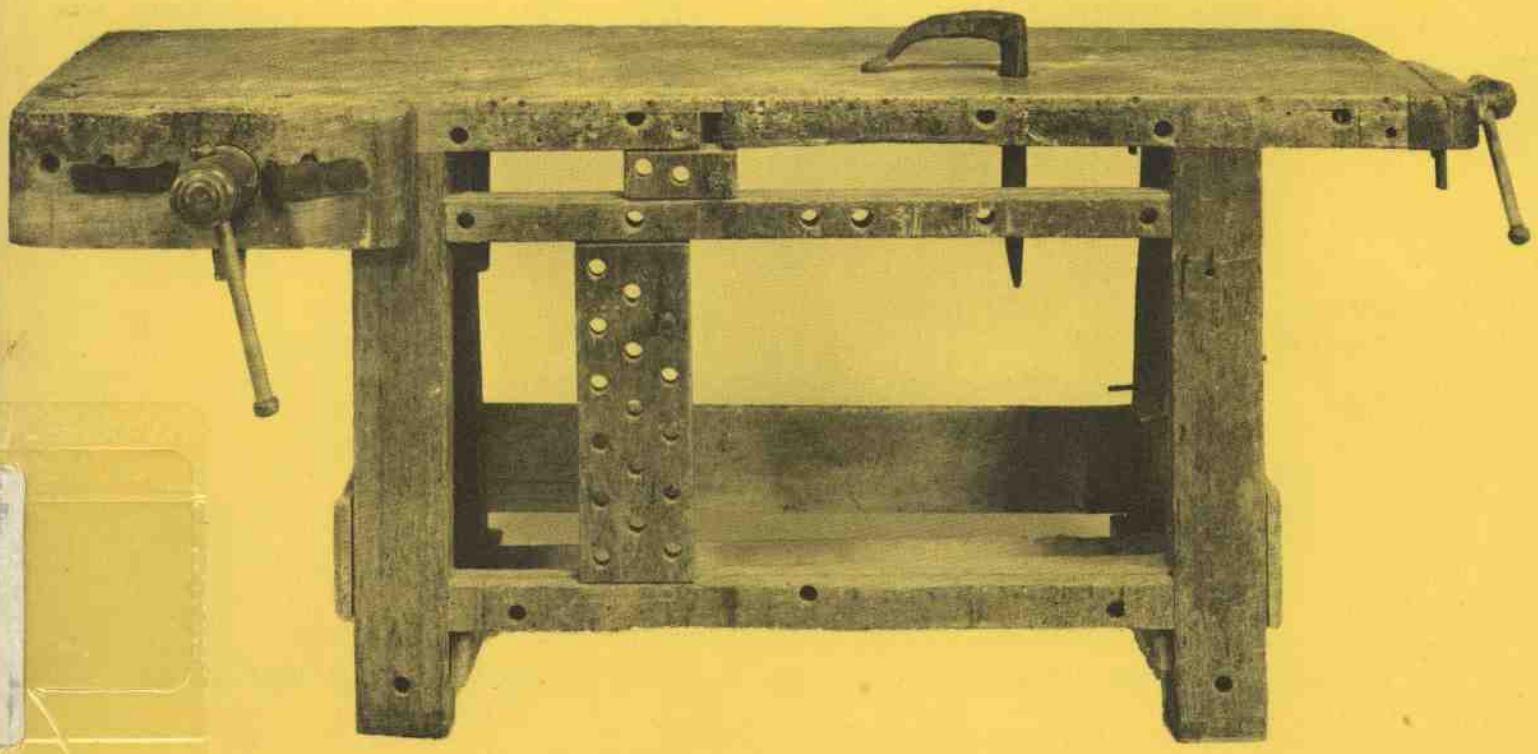
THE CABINETMAKER'S ART IN ONTARIO, c. 1850–1900

L. A. KOLTUN



NATIONAL MUSEUMS OF CANADA

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OTTAWA 1979

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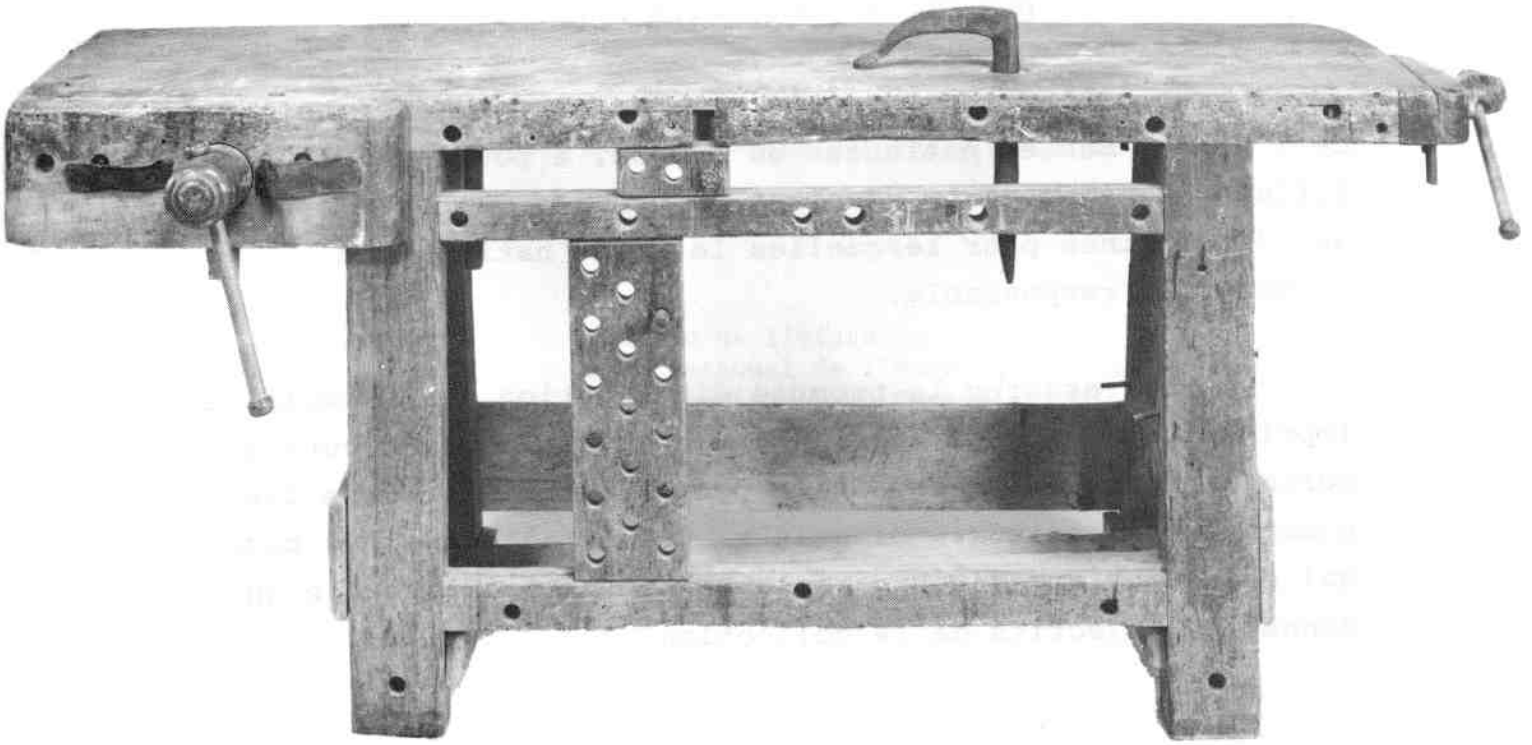

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OTTAWA 1979

OBJECT OF THE MERCURY SERIES

The Mercury Series is a publication of the National Museum of Man, National Museums of Canada, designed to permit the rapid dissemination of information pertaining to those disciplines for which the National Museum of Man is responsible.

In the interests of making information available quickly, normal production procedures have been abbreviated. As a result, editorial errors may occur. Should that be the case, your indulgence is requested, bearing in mind the object of the Series.

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Pour assurer la prompte distribution des exemplaires imprimés, on a abrégé les étapes de l'édition. En conséquence, certaines erreurs de rédaction peuvent subsister dans les exemplaires imprimés. Si cela se présentait dans les pages qui suivent, les éditeurs réclament votre indulgence étant donné les objectifs de la collection.

RESUME

Cette histoire d'un ébéniste ontarien de la deuxième moitié du 19e siècle est plus qu'une simple biographie d'un artisan. C'est aussi un inventaire illustré de son outillage et de sa production de même qu'une analyse comparative du travail artisanal et manufacturé. Un chapitre sur les changements occasionnés par l'industrialisation nous fait mieux comprendre le contexte dans lequel cet artisan a évolué.

Les personnes désireuses de recevoir en français de plus amples renseignements sur cette publication sont priées d'adresser leurs demandes à:

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AVANT-PROPOS

Thematic research on artifacts is the foundation of the National Museum of Man's collection and exhibit policy. Tools have always been an important part of this work because of their portrayal of man's use of resources. A study of tools portrays how Canadians adapted to their environment, were influenced by foreign tool manufacturers, were affected by industrialization, and preferred certain styles and products. Although historical research in the Museum has not emphasized crafts and early industries throughout Canada, tools in a number of areas have been considered (see the list of publications at the end of this monograph).

The Museum's priority is to acquire artifacts as a unit, such as the tools of a shop, which can then be considered as an entity and the functions of its various parts analysed. Since owners of historical shops have often inherited them, information usually exists which allows the researchers to give a fairly complete picture of the shop's evolution. Once this work is accomplished, the shop can be rebuilt as part of a display in a museum or on a historic site.

Lilly Koltun's work has followed these general lines and was originally (in 1975-76) used in the reconstitution of a woodworker's shop in the National Museum of Man's permanent exhibit in Ottawa: "A Few Acres of Snow". In this monograph Ms. Koltun has presented detailed descriptions of the tools and placed them in their industrial context. This work, combined with the excellent photography done by the Museum's

PREFACE -- WHY TOOLS?

Tools reveal the processes of creation. Their form, so utilitarian, is the direct result of the need to materialize an idea. They tell us about the thoughts and ideals of the craftsman who found them essential in his workshop. In particular, those tools which have disappeared from the present-day work milieu are revealing. The incredible variety of hand planes for example, once the coveted symbol of a woodworker's craftsmanship, tell us of both the workman's and his client's love of multiple decorative mouldings. Hence they imply a much more complex and time-consuming style of furniture production and a degree of hand manipulation no longer viable or desirable today. In having responded to a previous culture's needs, tool artifacts speak eloquently to us now of what those needs were. The hand planes imply both the need for a certain group of objects (furniture, room mouldings, etc.,) and the creative form those objects would take.

Tools also imply the materials they were used upon, whether wood, metal, stone or leather. An extensive range of woodworking tools suggests a culture heavily dependent on wood, while particular tools, such as the spiral auger (plate 15), further imply a mortise and tenon style of construction.

In addition, because of their origins, materials and forms, tools can focus on a range of historical questions. The study of these artifacts becomes another "documentary" source for history. Where and when a tool is made, whether at the local blacksmith's or in some distant country, and of what it is made, whether cast steel, iron, wood or brass, are questions which reveal the state of the manufacturing economy of the tool-producing area at a specific time. They also reveal the economy of the

receiving area where the tool was used, and the extent of that area's dependence on imports. Further, how far the tool may have travelled implies the state of communication and transport between places on the globe. More importantly, where a craftsman got his tools could also reveal where and how he got his ideas and styles of manufacture. The expansion of concentric circles of influence radiating out of important centres can be charted over time. In this case, studying cabinetmaking tools, we can follow the gradual development of the mass-production system and of furniture styles in Ontario.

One significant question: is the tool itself made by hand or machine? The development of mass-production and mechanization in tool-making as well as product-making is a further indicator of basic technological shifts in society. With the advance of machine produced tools on the market, the craftsman's job, or the extent and variety of his skills, may be re-defined. This in itself reveals the craftsman's capacity to change with changing circumstances.

Another question: is the tool repaired or converted from another tool? Is the whole tool imported, or just the blade, with the handle being made by the craftsman who used it? Answers to these questions reveal not only the skill of the craftsman and the state of transport to his community, but also his wealth and even his stylistic or creative bias. Many craftsmen, for example, preferred to make or decorate their own handles so that the tools became personal to them, to the grip of their own hand.

What is the shape of the tool? After about 1840, the previously almost static form of hand tools was changed by rapid invention, leading toward greater efficiency or durability. New tools to do old jobs more rapidly and precisely, including new machines, appeared on the market. At what level of change is the tool, and therefore the user? When does a tool become

obsolete? How long are old tools used, even after improved ones are invented?

By mid-century the traditional forms of old tools intended to perform traditional tasks -- general measuring, cutting, assembling, etc. -- suddenly begin to change because their old tasks change. Tools progress toward two extremes, becoming either highly specialized in purpose or else developing into multi-purpose tools, convertible to many tasks previously performed by a number of different tools. As examples to clarify this, we can use the dovetailer and the combination hand plane. The former was a machine which only cut the shapes for a dovetail joint. When dovetailing by hand, the craftsman used a back saw, but the same back saw could do other jobs that involved cutting wood. The machine dovetailer could do no other job; its virtue lay in doing its one job with unparalleled speed and precision. At the other extreme we have the combination hand plane which could do many of the jobs usually done by separate planes. The Stanley Rule and Level Company in the United States was a leader in this field; in 1871 they were selling for example, "Miller's Patent Adjustable Metallic Plow, Filletster, Rabbet and Matching (Tongue and Groove) Plane". Their advertisement mentioned that "the entire assortment can be kept in smaller space, or made more portable, than an ordinary Carpenter's Plow". This portability is the reason for its development. Such multi-purpose tools chart the need for portable tool chests for the worker who did not have his own shop, but who was possibly a "specialist" in a factory, carrying his tools back and forth. Here we see an adaptation in an artisan's life style influenced, perhaps even forced into existence, by the changing tool. Both greater specialization and multiple use lead to one conclusion, the development of the factory system of production. This is the key fact of tool development, and an important element in the general cultural evolution of the late nineteenth century.

These are only some of the questions that can be asked concerning tools, and only some of the answers they can provide. Because tools are so closely involved with the basic human endeavour of making things, they deserve and repay close historical scrutiny. Artifacts are sometimes the only source of documentation for those people who cannot or do not write their own history in books, manuscripts or other records. And they are an essential corrective on the bias of those who do. They are "facts" made permanent and given form in an object. Like other historical "facts" though, they must be interpreted. Curators, conservators, and artifact researchers have long recognized that knowing how things were built and with what tools is indispensable for knowing how things should be preserved and reconstructed. Such knowledge should also be important to the historian who means to "preserve and reconstruct" history. Till now, this source of information on the past has been little tapped. It is to join in the increasing attempts to emphasize and use the historical information found in tools and other objects from the past that this study is written.

BIOGRAPHY OF AN ONTARIO CABINETMAKER - FRANCIS JONES OF MIDDLESEX COUNTY

This study focuses mainly on the Jones collection of cabinetmaker's tools in the National Museum of Man in Ottawa. The reasons for this are numerous. Francis Jones, the cabinetmaker who used these tools, can be placed historically in time and space -- in the village of Ireland twenty miles northwest of London, Ontario, from about 1850 to 1894. He belonged to a fairly definable pioneering community in a rural district and his history gives us a glimpse into the conditions and development of manufacture and settlement there.

He was a hand craftsman during the key period after c. 1840 and up to about 1900 when the revolutionary transition was made in Ontario from hand to machine manufacture. His situation allows us to raise pivotal general questions about the transmuting influence, or opposition, between "rural" and "city", between "hand" and "mass-produced" furniture. Unusually, some pieces of furniture which may have been made by this man using these tools are also available, bought, like the tools, from the descendents of the Jones family in 1972. Related questions about the extent of transitional human-powered or steam and water-powered machinery in the shop of a hand craftsman can also be examined since almost all of his hand tools -- some 900 items, including some remnants of machinery -- are preserved together in the one collection and provide a nearly complete picture of a cabinetmaker's shop during one of Ontario's most active and expanding periods.

Francis Jones, whose youthful portrait appears on plate 1, was born May 19th, 1827 in the area of Bytown, later Ottawa. His parents had emigrated from Ireland, although his father was originally from

Plate 1. Portrait of Francis Jones (1827-1894)
Photo No.: K73-492

Wales, and had settled in March township in 1822. Their son learned cabinetmaking from John Blyth at "Kennedy & Blyth's" in Bytown, presumably acquiring there his ideas on furniture style and construction. In 1849 Jones appears to have moved to the area of southwestern Ontario, perhaps directly to the village of Ireland twenty miles northwest of London where the first extant directory for London and Middlesex County (1857) lists him as a resident. He continues to be listed regularly in the directories there till his death which occured on January 14, 1894.

About 1878 the name of Jones' village changed from Ireland to Clandeboye; it was also known as "McGillivray" since this was the name of the Post Office. All of these names are revealing indicators of the type of settlers who immigrated to the area -- they were generally of Irish and Welsh descent, coming either directly from overseas, or from other parts of Canada. Indeed this particular area, the north west corner of what is now Middlesex County, became known as the "Welsh Settlement" since the first major group to break ground here in 1821 were the 34 members of the Welsh family of John Matthews. This nucleus attracted other Welsh settlers who were becoming well-established by the time the Canada Company had driven a road through to its Huron Tract in 1829. (By mid-century they had grown to a population of 350; after c. 1860 however, they gradually lost the Welsh language and became assimilated to a more general Canadian population). The southern tip of the Huron Tract encompassed the land which was later identified as the Biddulph and McGillivray Townships and annexed to Middlesex County in 1863. These townships, which also became part of the Welsh Settlement, were not opened until the 1830's and 1840's by the Canada Company, despite the steady progression of the independent settlement a few miles

farther south. This may have been because the Canada Company was apparently asking $2.50 to $3.00 per acre when the government land to the south was being sold as cheaply as $1.00 per acre.

The village of Ireland itself was established on the boundary line between McGillivray and Biddulph townships in 1844, beginning life as "Flanagan's Corners", when the main structure, Flanagan's Tavern, was built. Although it never exceeded a population of 300 during the entire course of the 19th century, it was an active community in its earlier years. It served the farmers of its area, perhaps more than its inhabitants, since the 1857 Directory for London and Middlesex County lists 4 blacksmiths, 3 innkeepers, 2 wagonmakers, 5 general stores, 1 saddler & harness maker, 2 shoemakers, 3 carpenters, 1 framer and contractor, 1 boot and shoe store, a few miscellaneous trades and, of course, 1 cabinetmaker -- Francis Jones. The village's aspirations received a blow when the Grand Trunk Railroad laid its tracks three miles away at the very young settlement of Lucan. Those hopes were somewhat revived c. 1877 when the London, Huron & Bruce line built a station in the village but without much greater result than that of causing the name of the place to be changed to the name of the railroad station -- Clandeboye.

The surrounding area itself was very fertile and yielded rewards for the hard labour put into it. By the 1870's and 1880's it had lost its primitive qualities and taken on the prosperous aspect it still bears today. The townships of Biddulph and McGillivray together in 1871 had a population of 8,856 with 1,606 assessed ratepayers. The assessed value of real estate totaled $1,232,814, while the assessed value of personal property was $59,600.

Francis Jones's fortunes seem to have prospered with the times. The assessments of Biddulph Township of 1886 and 1887 list his taxable income plus the total value of his real property as $1,550. During his lifetime, he owned land, leasing it for farming, and acquired a two-storey brick house opposite his shop which he insured, along with his furnishings and a few personal belongings, for $1,500 in 1881.

In 1860 he bought out the manufacturing and selling rights for "Wood's Straw Cutter" and in 1868 the same rights for William Glendillen's improved spinning wheel, "Queen of the West". He also seems to have followed a number of trades apart from those of making furniture, spinning wheels, and farm equipment. The larger woodworking tools and equipment in his shop, such as the cross-cut saw, the spikes, the crow bar, and so on, would indicate that he also did carpentry and joinery. And the coffin hardware discovered among his tools (e.g. plate 80) would suggest that, like a large number of country cabinetmakers, he was also involved with undertaking. Further specialty tools such as the croze and the straight driver indicate that he practised coopering, while a large number of different awls, shoe lasts, and metal "shoe protectors" or cleats imply that his work in leather ranged wider than upholstering.

Francis Jones was not among the first generation to settle in his area. Indeed had he been he probably would not have been able to practise his trade at all, as his neighbours' need to clear land and build log huts would have taken precedence over the acquisition of skillfully made furniture. However the state of life in the bush when Jones moved to the Ontario frontier about 1850 was still primitive, so his wide variety of skills seems typical; like all early settlers, he put his hand to many things and defined himself by what he did best.

His real biography is not written in statistics, but in the tools of his trade.

THE HAND TOOLS

General Nature and Origin of the Tools

The tools in Francis Jones's workshop were almost all powered by hand. There are a few exceptions, dealt with on pages 120-125 which suggest that he may have used water, steam or electric power at some point in his career. He made almost all the handles on the tools in his shop himself, except for the planes, and although a fair number of his tools were converted by him from other tools (for example, files were made into nail punches or sharpened into blades for screw boxes) most of the actual working parts for his tools such as blades or irons were purchased from various manufacturers. Local distribution of such hand tool parts seems to have been adequate enough for him not to need the services of the local blacksmith. His correspondence reveals that he purchased items through travelling salesmen and by mail order. He also bought through retailers who imported from the United States and England such as Smith, Chapman & Co. of London, Canada West.

Jones also seems to have made at least some or possibly all of his larger pieces, such as his wood lathe, his workbench, the bed for a milling machine, his jigs and clamps, his tool racks and part of his tool chest. Indeed he may have had little inclination to buy such things ready-made. Spons' Mechanics' Own Book: A Manual for Handicraftsmen and Amateurs (3rd edition, London, New York: 1889) for example, seems to assume that the craftsman would make such things for himself and gives detailed directions for their completion. It is only in the very late 19th century that tools were sold complete with handles like those described in the Sorrill tool cabinet (Plate 84).

One of the reasons for the preference for factory-produced tool blades and irons, apart from the great precision of form which could be obtained, was their production in "cast steel" as so often marked on their tangs. This refers to a type of very hard steel manufactured through a special casting process first invented before 1750 by Benjamin Huntsman in England. Originally thought to be too hard even

for use in tools, this steel was later taken up in England in the 19th century after French cutlery firms using it provided stiff competition for English products.

Jones owned no multi-purpose tools such as combination planes, although he did have a few simple dual-purpose hand implements such as the combined saw set and screwdriver (see plate 86). It should be mentioned however that the milling machine which he may have had would have been equipped with interchangeable heads to cut different grooves and mouldings, perhaps to do sanding as well. He does not seem however to have participated in the tendency of the 19th century toward greater tool specialization or tool combination. This identifies him as still essentially a hand craftsman. And the wide variety of his tools implies further that, like earlier craftsmen, he could follow the process of creation from straight board to finished product; he was not a "specialist" doing only turnery or polishing for example. The tools also imply that there was extensive labour still involved in the production of a piece, although Jones appears to have lightened it wherever possible by the use of machines for cutting or planing, etc.

It is also revealing to notice that there are very few of the specialist's carving tools among the collection. Unless these tools have been lost, Jones's ornamentation would therefore seem to have been confined to turning, to scroll-cut flat or incised work, or to factory-produced appliqués.

As far as regards the origins of the tools themselves, many of them have no marks or discernable place of origin; some that have been stamped have had their stamps become illegible with time and use. Of the 23% whose stamps are clear and for which a place of origin has

been found, only a small number were manufactured in Canada. There are sixteen definitely Canadian companies mentioned. The majority of these are nail and screw manufacturing concerns such as, among others, the Canada Screw Co., Dominion Tack and Nail Co., S.R. Foster & Son of St. John, N.B., Montreal Rolling Mills, P.I. Robertson of Milton and the Steel Company of Canada. Of the larger tools, J. Dawson of Montreal produced four planes, signing his name in script, but marking his town in Roman capitals. J. Flint of St. Catharines produced a hand saw with the patent date on the blade: Dec. 31, 1867. Shurley & Dietrich of Galt produced Jones's cross-cut saw (it has "Cowan Special" marked on the blade) and possibly a compass saw as well, although the marks on the latter are difficult to read. Black Diamond made a saw file and a screwdriver in the collection and the "Sheffield Cutlery Co." of Montreal is the name on Jones's putty knife. Altogether there are not more than about 45 identifiably Canadian items, most of them being pieces of hardware.

The number of firms (15) whose origins in the United States can be determined is about the same as for Canada, but the tools they made are more important in type. Apart from the nails made by the American Screw Co. and Plymouth Mills of Plymouth, Massachusetts, there is a compass marked "Cooke's patent Dec. 12, 1871, Worcester, Mass.", files by Barnett Black works, a saw by the famous H. Disston & Sons of Philadelphia, and another by Willmott of New York. There are Eagle company locks from Terryville, Connecticut, and auger or spiral bits by Whitman and Barnes. A number of Jones's planes were produced by firms such as Edward Carter of Troy, N.Y. and Casey Kitchel & Co. of Auburn, N.Y. This latter firm was later (1858-1864) known as

Casey Clark & Co. and under that name too they can claim a moulding plane in the collection. One moulding plane each was made by the Greenfield Tool Co. of Greenfield, Massachusetts and T.J. McMaster & Co. of Auburn, N.Y. Two bench planes came from A. Howland & Co. of N.Y. Finally, the Phoenix Co. of Hitchcockville, who made two moulding planes in the Jones collection, may be an American firm; this however, has not been confirmed. In total, about 33 items can be definitely identified as originating in the United States.

The largest percentage of identifiable tools in the Jones collection comes from England. There is however one Scottish firm, Wallace of Dundee, which produced 2 planes. The English tools include saws by Robert Sorby, John Spear, Spear & Jackson and John Bramall, all Sheffield makers. The planemakers range over a wider territory and include early tools (before c. 1835) by I. (John) Sym and "Mutter", both of London, W. Parkes of Birmingham and Greenslade & Acraman of Bristol. Among the later planes are pieces by Cox & Luckman and T. Shaw, both of Birmingham, and R. Thomas of London. P.S. Stubs and W. Makin & Sons made some of Jones's files. Bits and edge tools such as chisels make up the largest proportion of identifiable items. Their maker's include famous Sheffield names like Robert Sorby, Greaves and Sons, Marples and Sons, Spear and Jackson and J. Howarth, along with others such as James Cam and Charles Hill. In total about 120 of Jones's tools can be definitely stated to be of British origin.

There are two other firms whose names should be mentioned as an interesting sidelight on tools sources in Canada. They are H. Boker, who was based in Remscheid, Germany, and "Blechmann", also possibly a German manufacturer whose name appears on two gimlet bits. Boker's

name appears on five bits, a pen knife and a vise. What the extent of German imports may have been is uncertain; however, it is interesting to note Timmins's remark on p. 658 in his 1866 report on the Birmingham heavy edge tool trade (Samuel Timmins, ed. The Resources, Products, and Industrial History of Birmingham and the Midland Hardware District: a series of Reports. London, 1866.): "The Germans are the principal foreign European competitors in this business, but in order to sell their wares they are obliged to forge the names and marks of established English houses."

There are about 33 other legible company names, covering about 72 tools in the Jones collection, none of which however have been definitely assigned to a country of origin, although all of them are Anglo-Saxon names. About the same number of other companies have marked approximately 40 more of Jones's tools but their marks have become illegible. All the other tools, about 580 in number, have no marks. The majority of their blades are machine tooled, but their handles, except for the planes, are often homemade.

As may be expected, the dates of the manufacturing firms which produced most of Jones's tools can be set as largely within the last two-thirds of the 19th century. The bulk are from around 1830-65 with a few notable exceptions, such as the plane by I. Sym, a maker whose dates W.L. Goodman, (British Plane Makers from 1700. New York : 1968.) has set at 1755-1802-. (see plate 40). As mentioned with respect to the "Mutter" plane on plate 39, it is not at all unusual for durable tools such as moulding planes to pass from one craftsman to another during their long and useful lives. The large number of tools from the earlier years of Jones's practice would seem to indicate that he acquired them possibly in Ottawa or in the larger towns of southwest

Ontario such as London just at the beginning of setting up his own shop in Ireland. He kept these tools right through his working life, repairing them when necessary, or "converting" them when they had lost their first use. It is impossible to tell how many he may have discarded or how many may have been lost.

THE HAND TOOLS

Measuring and Marking Instruments

CALLIPERS

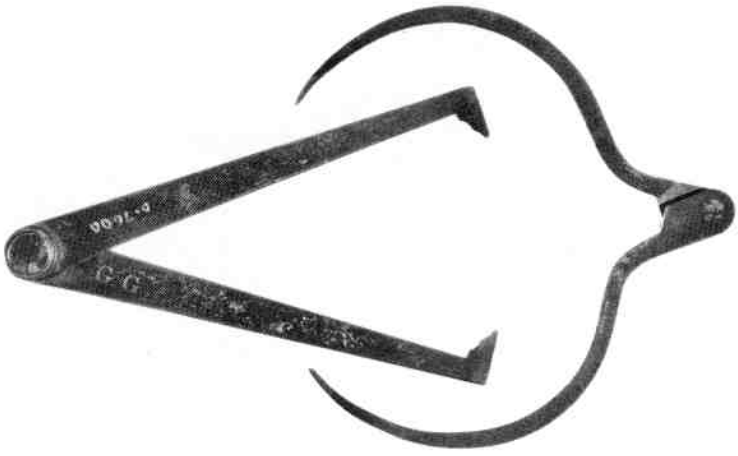


Plate 2. Callipers
D-7600, D-7602

Callipers were intended to measure and assure standard thicknesses, particularly on turned objects in the lathe. D-7600, the straight callipers, may also have been "inside" callipers; the legs would have been turned so as to point outwards, and then the points could measure "inside" or concave spaces on the turned object instead of "outside" or convex thicknesses. The curves on the points may also have allowed the tool to serve as a kind of template, checking the evenness of the evenness of the shape of a turned piece such as dowling.

Dimensions: D-7600: 6 5/16" long
D-7602: 5 11/16" long

Photo No.: 79-381

COMPASSES

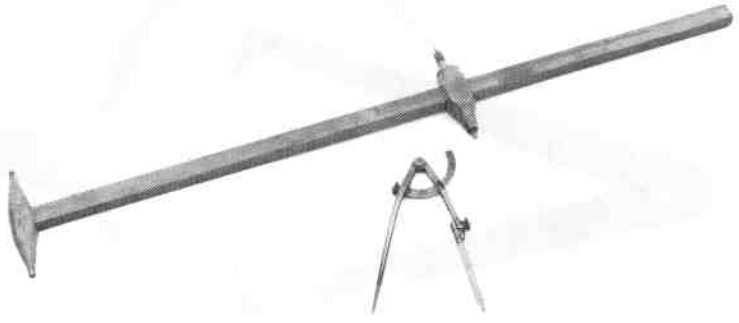


Plate 3. Compasses
D-7601, D-7608

Compasses could be used like wing dividers, simply to mark off lengths, but their most useful purpose was in making circles. D-7601, the small pair, are marked "COOKE'S PAT. DEC. 12, 1871, WORCESTER, MASS." D-7608 would have been used for describing large circles on wood for table tops etc. The workman held it by the end, where a sharp point kept it firmly in one spot, and turned the shaft in a circle letting the adjustable point mark the wood. This tool could also be used as very large callipers for measuring distances and may have been known as a "trammel".

Dimensions: D-7601: 7 1/16" long
D-7608: 30 5/16" long

Photo No.: 79-382

DRAFTING INSTRUMENTS

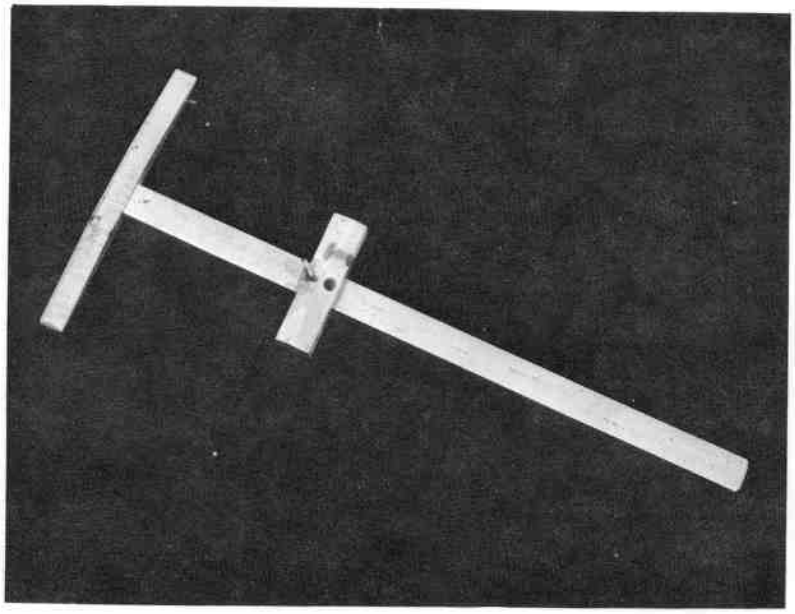


Plate 4. Drafting Instruments
D-9129, D-7843

The Jones collection contains a drafting board (D-134) along with a number of drafting instruments. Shown here are two which would have been used to reproduce standard angles and straight lines without new measurements being taken each time. D-9129 (top) is a T-square and would have been held and moved against the side of the board to make parallel lines. D-7843 (bottom) would have lain across the bottom of the board, with its arms forming different angles.

Dimensions: D-9129: 25 5/8" long
D-7843: 40 5/8" along the base

Photo No.: 79-383 (top) and 79-384 (bottom)

GAUGES

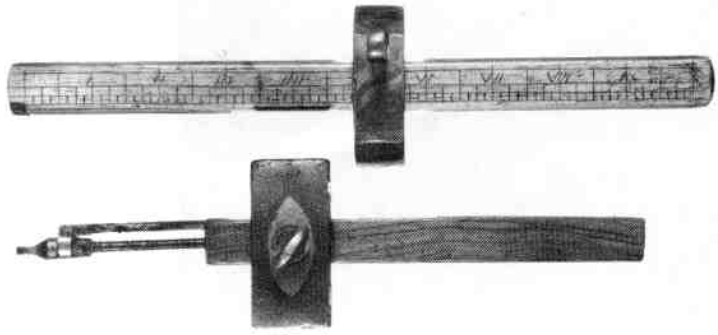


Plate 5. Marking and Mortise Gauges
D-7598, D-7592

D-7592, the lower tool, is a typical mortise gauge; with the block held against the wood, the two steel points marked off the position for a mortise in parallel lines. The width of the marks are adjustable to the size of the mortise desired. D-7598 is a simpler type of marking gauge; it has only one immoveable steel point on the end of its shaft to make a single line, but, of course, as with the mortise gauge, its block can be moved along the shaft to allow the point to rest farther onto the wood. The great advantage of such gauges is that they can be set once, and then used repeatedly for the same measurement.

Dimensions: D-7598: 10 3/4" long
D-7592: 9 7/16" long

Photo No.: 79-385

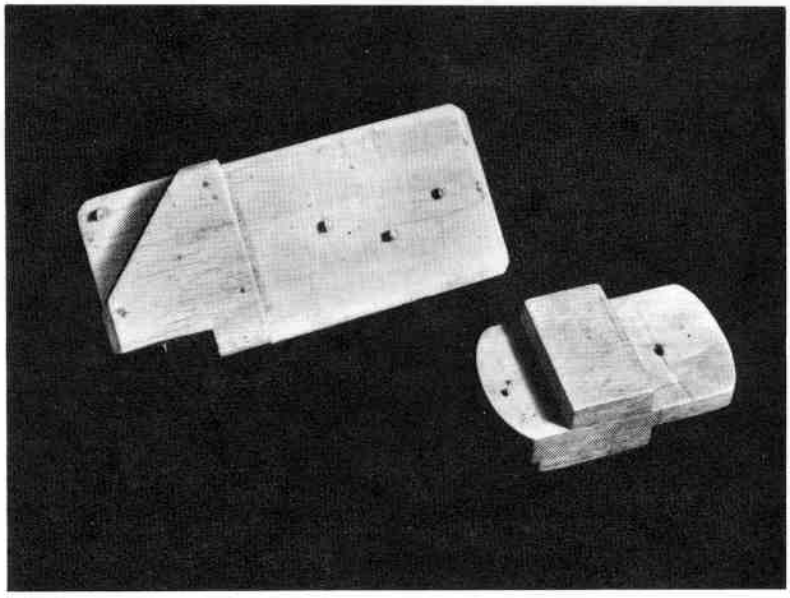


Plate 6. Marking Gauges

Both part of D-7951, Francis Jones's tool chest.

Jones made himself a number of these handy little items and used them to mark and measure the depth of small mortises and angles or other standard dimensions relative to a specific piece. What appear to be dark spots in the illustration are actually the tips of the steel points used for scratching the marks on the wood.

Dimensions: the larger one is 4" long, the smaller 2½" long

Photo No.: 79-386

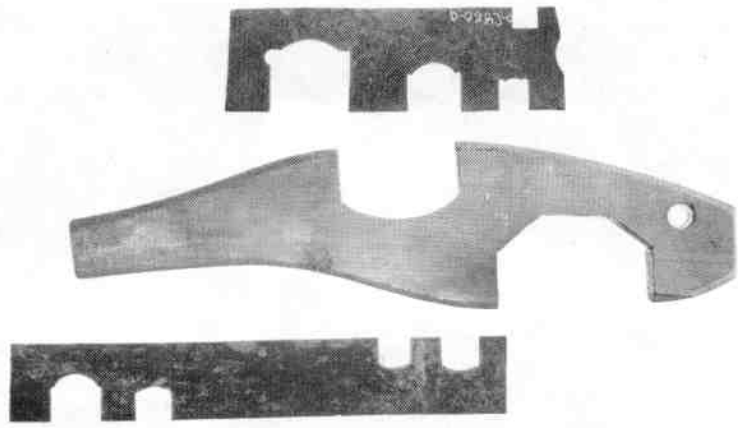
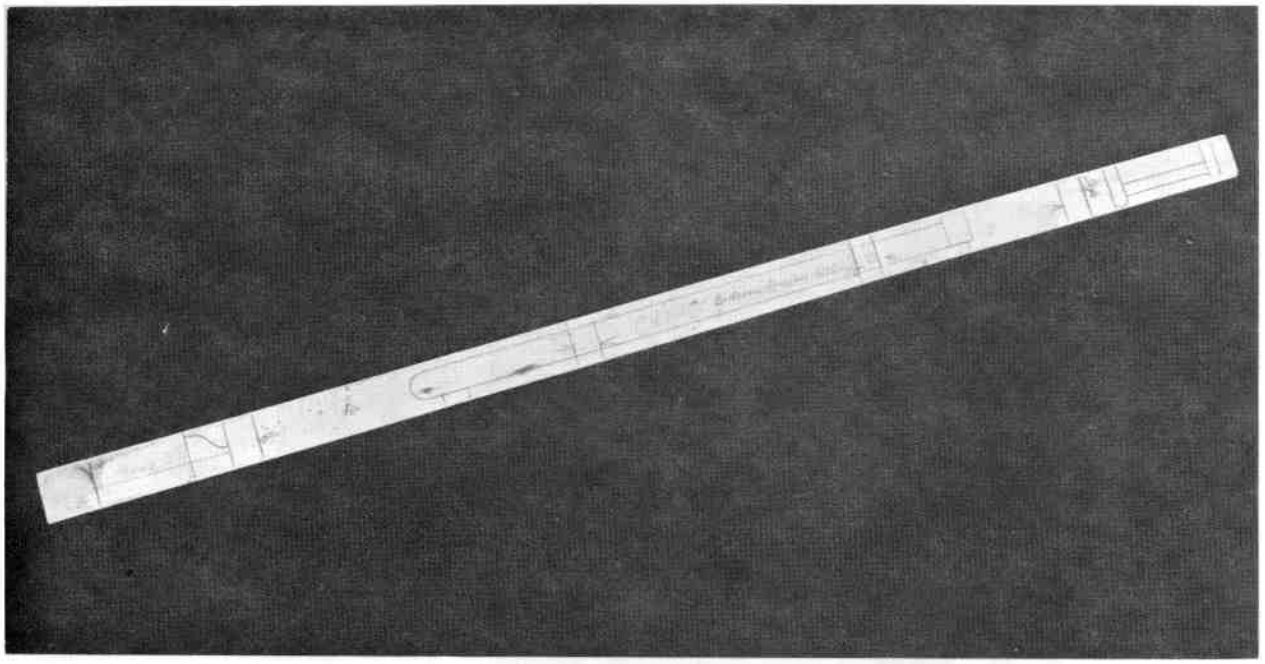


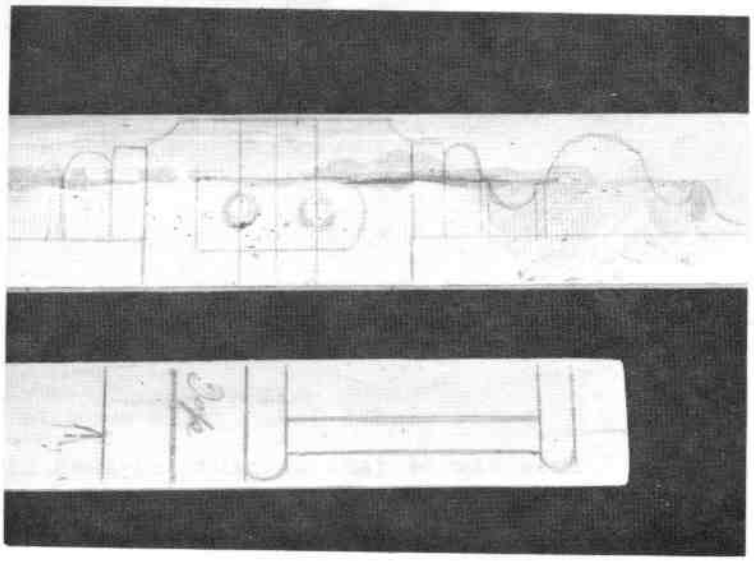
Plate 7. Measuring Gauges
D-7980a, D-7983b, c

These three tools are gauges used in wood turning; the middle one, D-7980a, is made of wood; the other two are of iron. They measured the accuracy of the turned piece and insured some uniformity for similar objects. They may have had a particular application in measuring tenons.

Dimensions: D-7980a: 12 13/16" long
D-7983b: 9 3/4" long
D-7983c: 6 3/4" long

Photo No.: 79-387





(above: D-9131 o
centre: D-9131 a: top
D-9131 o: bottom)

Plate 8. Measuring Rods or sticks
D-9131a, o

Such rods or sticks (there are 19 in the collection) were marked in pencil with all the relative proportions for a piece of furniture. Hence they acted as a "key" to the dimensions of the entire piece. Often Francis Jones wrote on the stick what particular piece each represented; except for a "crib", they are exclusively case pieces. Here, D-9131a is the "large crib" & D-9131o is "R.A. O'Neill's Bedroom Bureau". In addition, these sticks were used to check distances on the turned work for the furniture. The marks would indicate where and how the turned piece was to be carved. In effect these rods were used the way "patterns" usually would be in a cabinetmaker's shop. They had the advantage over paper drawings since they were less ephemeral, less likely to be damaged by continuous use.

Dimensions: D-9131o: 56 7/16" long

Photo No.: 79-388 (top) and 79-389 (bottom)

MITRE BOX

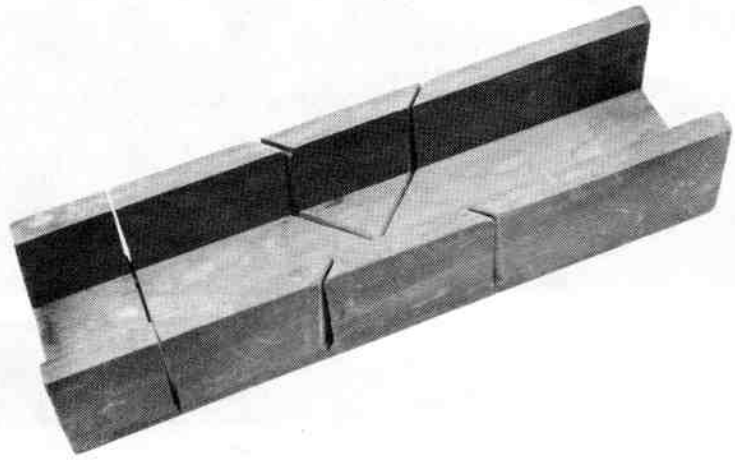


Plate 9. Mitre Box

D-7502

With the wood placed inside the box, the saw can be guided by the pre-measured cuts to produce angles of 45^{o} or 90^{o} in the wood.

Dimensions: 23 11/16" long

Photo No.: 79-390

PATTERNS

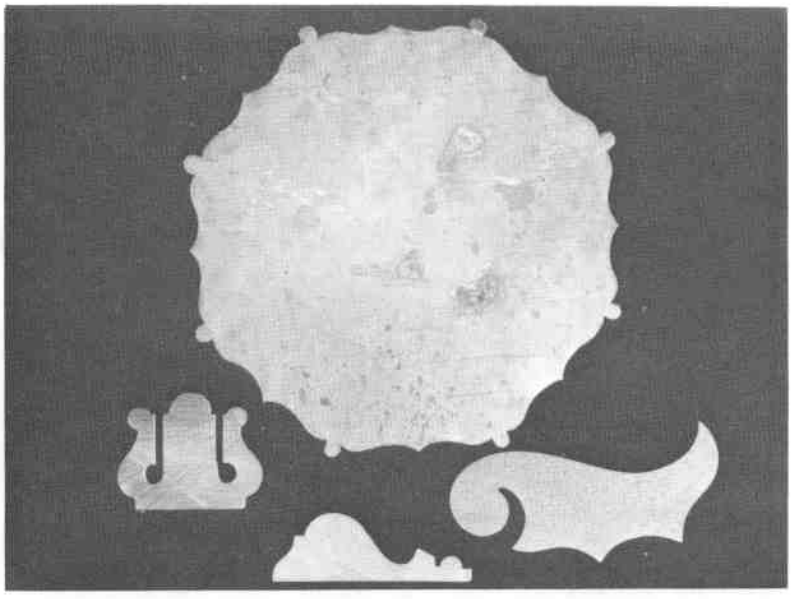


Plate 10. Patterns

D-9137, 2 items from the box D-8043 and 1 item from D-7951, the tool chest.

D-9137, the largest pattern, is made of some alloy, most likely brass. The wear on its ornamental edges would seem to indicate that it was used as a pattern or stencil from which to mark and cut out others of its type. Like the wooden patterns (from box D-8043) to its left and right in the illustration, the function of the pieces cut from it would have been mainly decorative. Indeed, the wooden pieces may have been decorative appliqués themselves, not just patterns. The last wooden piece, from D-7951 (the tool chest), may have been a pattern for a moulding.

Dimensions: D-9137: 11 5/8" diameter
item from D-8043: c. 6 3/4" long
item from D-8043: 3 5/16" wide
item from D-7951: 5 1/16" long

Photo No.: 79-391

PATTERN MARKER, PENCIL & SCORING TOOL

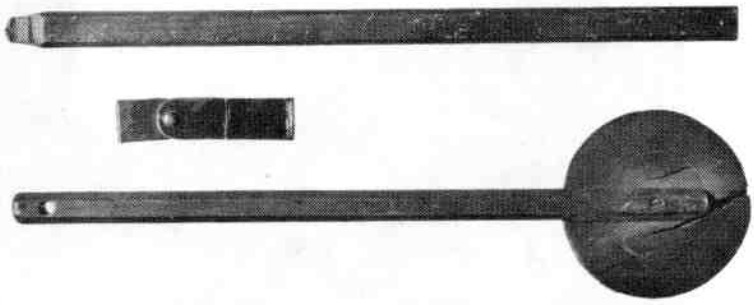


Plate 11. Pattern Marker, Pencil and Scoring Tool
D-7594, D-7837, D-7926

Marks were made on wood either by scoring or by pencilling. The pattern marker, D-7926, (bottom in the illustration), would likely have had a circular blade of some sort between the pieces of leather on its head. The pencil is of a flat lead type commonly called a carpenter's pencil. The small scoring tool has been homemade from two bits of metal, with one end turned at right angles and sharpened.

Dimensions: D-7594: 12 11/16" long
D-7837: 3 ¼" long
D-7926: 12½" long

Photo No.: 79-392

RULER

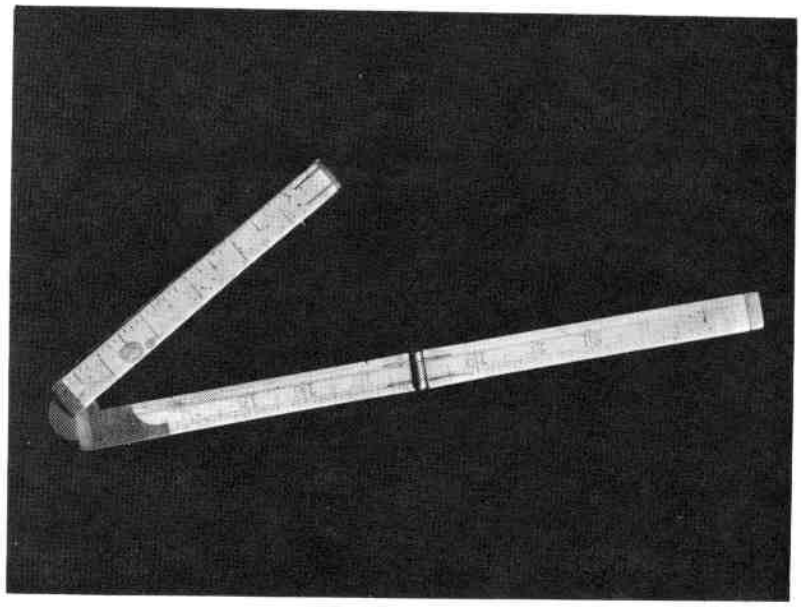


Plate 12. Ruler

D-7590

This ruler is of a very common 19th century two-foot type, made of boxwood, and capable of being folded into four sections and carried about in the pocket of the workman. Its hinges and pivots are of brass.

Dimensions: 24" long

Photo No.: 79-393

SPIRIT LEVEL

Plate 13. Spirit Level

D-7591

This is another pocket tool. When set on an even keel the air bubble in the liquid steadies exactly at the middle of the tube, allowing the workman to check if his work is properly right-angled. An identical spirit level was advertised for sale on page 92 of the T.B. Rayl & Co. tool catalogue of the late 1880's; the Rayl company was a Detroit firm.

Dimensions: 3 3/8" long

Photo No.: 79-394

SQUARES

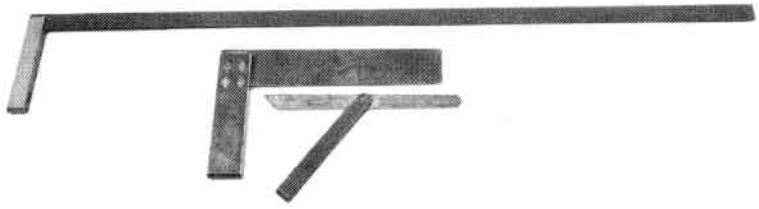


Plate 14. Squares
D-7511, D-7606, D-9127

D-9127, the longest tool, is a homemade try square meant probably to measure the squareness of long pieces of wood such as mouldings, etc. The try square, D-7606, is set permanently at 90° and is made of rosewood and steel, with diamond-shaped brass inserts and finger indentations provided in the stock. Its style would suggest an English origin; certainly it was a common tool in English kits from about 1800 on. What appears to be the name of a previous owner, G.P. Newberry, is stamped on the wood. It is not at all unusual to see a fine tool bought, inherited or in some way acquired by one craftsman from another. This happens again with some of the moulding planes in the Jones collection. Indeed Jones also acquired G.P. Newberry's veneering hammer (see plate 70). D-7511 is a bevel square, adjustable to check the trueness of any angle. Its nut is stiff so as not to let the steel move easily once set.

Dimensions: D-7511: 12 5/16" is the length of the steel
D-7606: 14 1/8" is the length of the steel
D-9127: 48" long

Photo No.: 79-395

THE HAND TOOLS

Cutting and Shaping Tools

AUGER

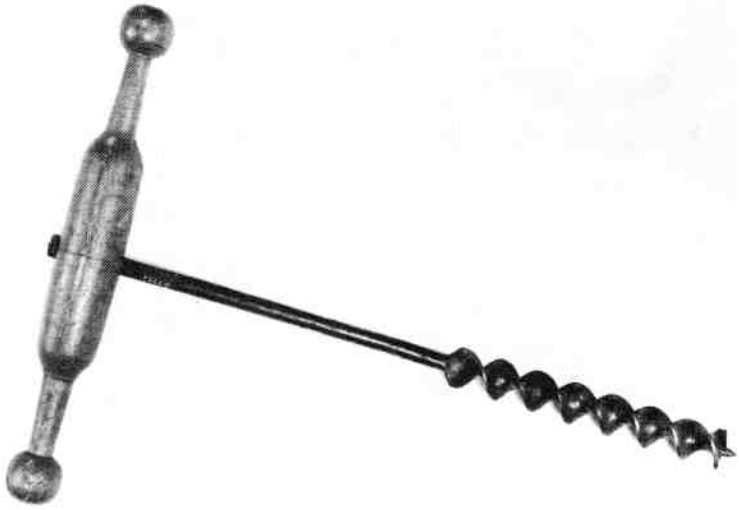


Plate 15. Spiral or Screw Auger

D-7751

Ezra L'Hommedieu's 1809 improvement on the spiral auger was the basis for all later forms of the tool. He introduced the screw worm (to replace the more easily broken gimlet bit) on the end and he had two (instead of one) cutting lips. This tool is even further developed in having 4 cutting lips. Its purpose is to drill large holes.

Dimensions: 19 11/16" is the length of the shaft.

Photo No.: 79-396

AWLS

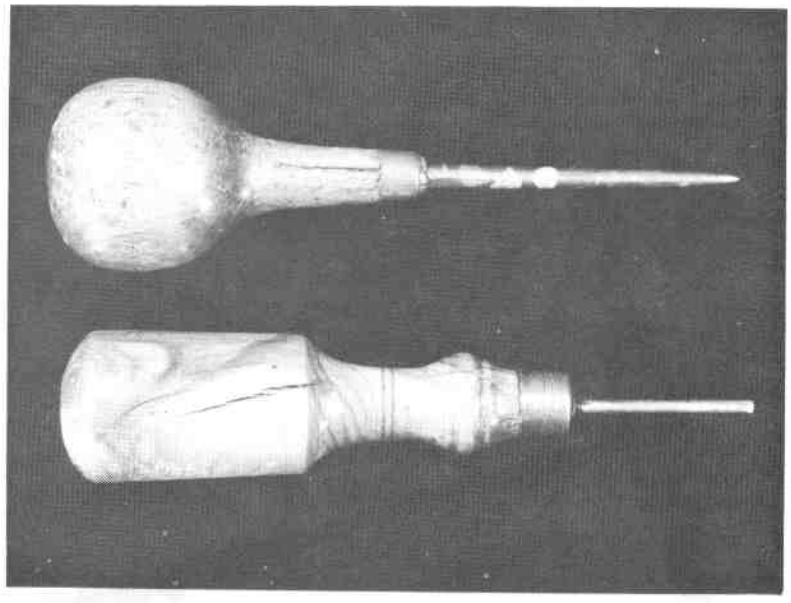


Plate 16. Awls

D-7537, D-7561

The upper tool, D-7537, was known as a "scratch awl" and the lower one, D-7561, as a "brad awl". Both would have been used to begin the holes for very small screws when bits (see plate 17) would have been too large. The scratch awl however could also have been a marking tool for scoring on wood. Francis Jones had many more awls than are usual for a cabinetmaker -- 20 with handles, together with a number of loose awl points. This would re-inforce the possibility that he worked in leather as well as wood.

Dimensions: D-7537: $5\frac{1}{2}$" long with handle

D-7561: 5 1/8" long with handle

Photo No.: 79-397

BRACE & BITS

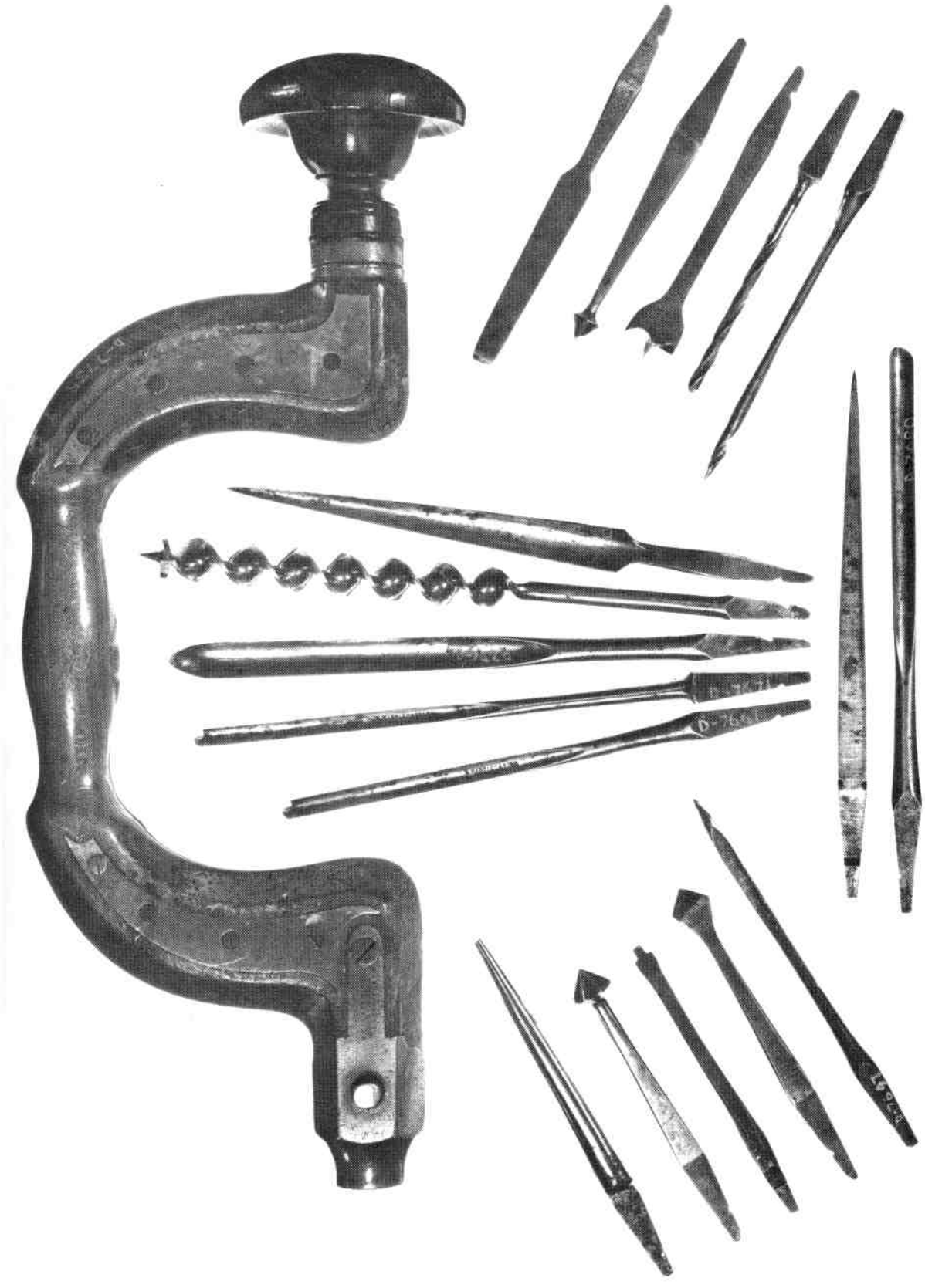


Plate 17. Brace & Bits, see p.36.

Plate 17. Brace & Bits

Brace: D-7735

Left group, top to bottom: D-7664 - reamer (or rinder) bit
: D-7615 - countersink ("rose") bit
: D-7634 - countersink ("plug centre") bit
: D-7649 - countersink ("flat") bit
: D-7697 - gimlet bit

Centre group, left to right: D-7661 - nose bit
: D-7671 - sash bit
: D-7620 - spoon bit
: D-7732 - auger (or screw) bit
: D-7675 - taper (or scillop) bit

Right group, top to bottom: D-7633 - screwdriver bit
: D-7614 - countersink ("snail") bit
: D-7651 - centre bit
: D-7656 - bit stock drill
: D-7729 - gimlet bit

Bottom: D-7644 - reamer (or rinder) bit
D-7690 - gouge bit

Wood braces remained popular long after all-steel braces were in common use. This example, made by W. Greaves & Sons at their Sheat Works in Sheffield, England, is brass-plated to keep the stock from splitting. It holds the bit by means of a retractable side pin, a simple method of attaching bits which was still being used in the wood braces advertised by Alex. Mathieson & Sons of Glasgow, Scotland as late as 1899. A hole drilled with such a brace, the workman leaning his chest on it and revolving the handle, could be completed speedily and with continuity, something which an auger would not allow because it forced the workman repeatedly to change his hand position.

All of the bits shown with the brace drilled holes of one type or another. The common "centre bit" cut a broad hole while the different "countersinks" were intended to finish or expand the top of a screw hole such that the screw head would lie flat with the wood or below its surface. The "gimlet" bits on the other hand were intended to drill very

narrow holes. D-7697 is of a type called the "german pattern" in contemporary catalogues and engraved on the side can be seen "...RMANY". The gouge bit is from W. Marples & Son of England, as are the nose bit and the sash bit. These latter two tools were adapted from the gouge bit, their peculiar ends helping to lift out the shavings from long narrow holes such as those needed in making window sashes of the type drawn up on cords. Also shown are two "reamer" or "rinder" bits, D-7664 being half-round and D-7644 being square. Their main purpose would have been to enlarge other holes. The "screwdriver" bit would have been used for inserting screws instead of the individual screwdriver which was a relative latecomer as a tool invention. The "auger" or "screw" bit (now called a "spiral" bit) was used in the same way as the auger. The "bit stock drill" would have been used to drill holes in metal as well as wood. The end of the "spoon" bit curved up slightly, differentiating it from the gouge bit, though its purpose was similar. The "taper" bit or "scillop" was used to enlarge other holes. All of these bits came in a wide range of sizes, and it was not unusual to sell 30 bits or more as part of a set with a brace.

Dimensions: D-7735: 14 1/8" long; the bits range in size from 4 1/16" for D-7634, the plug centre bit, to 9 13/16" for D-7732, the auger bit.

Photo No.: 79-398

CHISELS

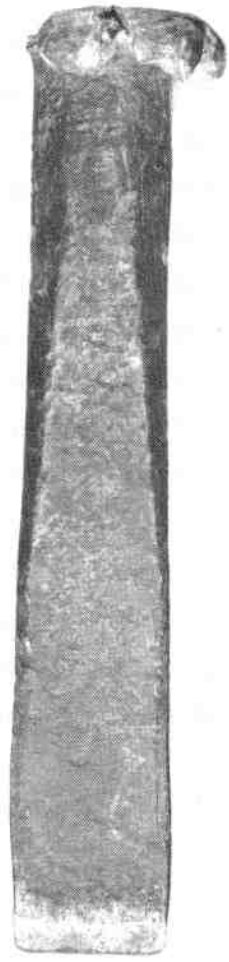


Plate 18. Cold Chisel

D-7811

This is more properly a metalworker's tool, used generally to cut and form cold metal. Francis Jones probably used it as a cooper's tool to cut off sections of steel band to make barrel hoops. This presumption is based on the large number of such chisels among his tools (7) and the presence of other cooperage tools, such as the croze and straight driver.

Dimensions: 5 7/16" long

Photo No.: 77-155

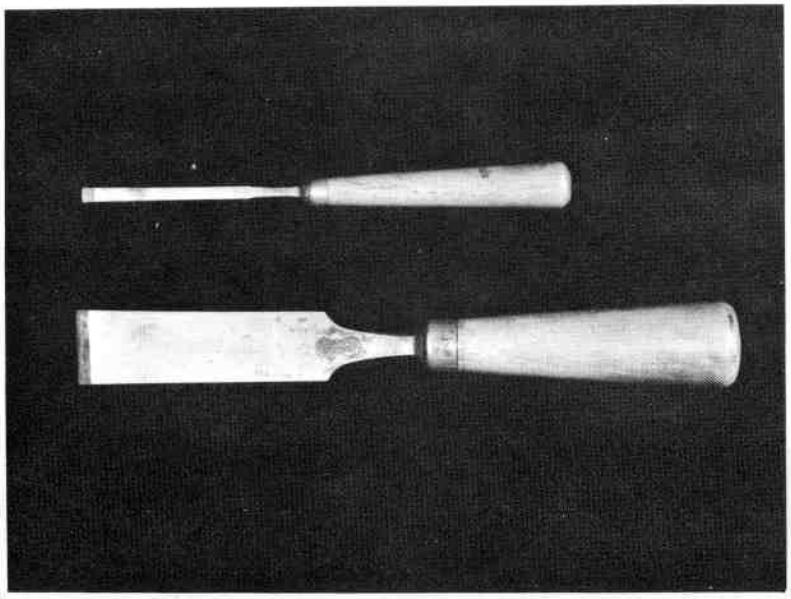


Plate 19. Firming or Forming Chisels
D-7309, D-7290

This is the commonest form of chisel, always having a flat straight blade. It was the first chisel used on the wood, cutting away unnecessary bulk, and came in such a wide variety of sizes for so many purposes that the specific names for different kinds of "firmers" have become confused. The larger sizes could be "framing" chisels for cutting tenons; the smaller ones like D-7290 (bottom) could be "carving" chisels. Some could even be used to cut mortises, although there was a special chisel for that purpose (see plate 20). Firming chisels were always struck with a mallet, as opposed to the large "paring chisel" or "slick" which was pushed by hand and shoulder. No such paring chisel according to Eric Sloane's definition (2" to 4" wide, with a curve toward the bevel) has been discovered in the Jones collection. (See: Sloane, Eric. A Museum of Early American Tools. New York: 1964. p. 53) However it should be noted that the J.B. Shannon Tool Company of Philadelphia published a catalogue in 1873 which had a different definition for this tool. It divided "paring chisels" and "slicks" into separate types, the former being long straight chisels with no curves, and varying in width from $\frac{1}{4}$" to 2"; while the latter, which also apparently had no curves, was $2\frac{1}{2}$" to $3\frac{1}{2}$" wide. By these definitions, some of Jones's chisels might indeed be considered "paring chisels" or "slicks".

Dimensions: D-7309: 11 3/8" long with handle; 1 7/8" wide blade
D-7290: $8\frac{1}{2}$" long with handle; 3/16" wide blade

Photo No.: 79-399

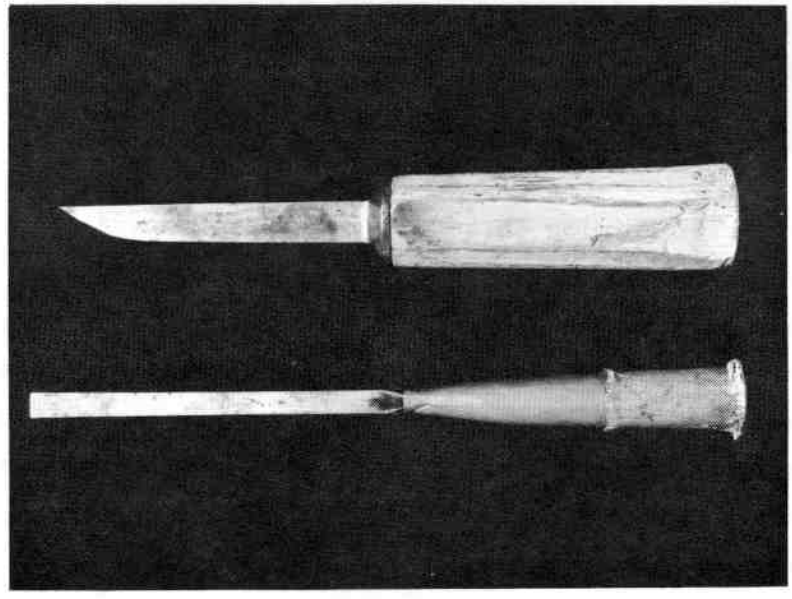


Plate 20. Mortise Chisels
D-7384, D-7380

Both of these chisels would have been used to cut out the superfluous wood in mortises. Their blades are heavy and square rather than flat, and could vary in width from 1/16" to 1" or more. Working in soft wood, these chisels would have cut the mortise directly; in hardwood, they would have cleaned out the mortise after a number of holes had been bored by the brace and bit to start the cavity. D-7380 is the most common type, fitted with a handle attached to a tang. D-7384 is called a "socket chisel"; the handle would have fitted into its socket end.

Dimensions: D-7384: 12 3/16" long with handle; 6/16" wide blade
D-7380: 11 3/8" long with handle; 3/16" wide blade

Photo No.: 79-400

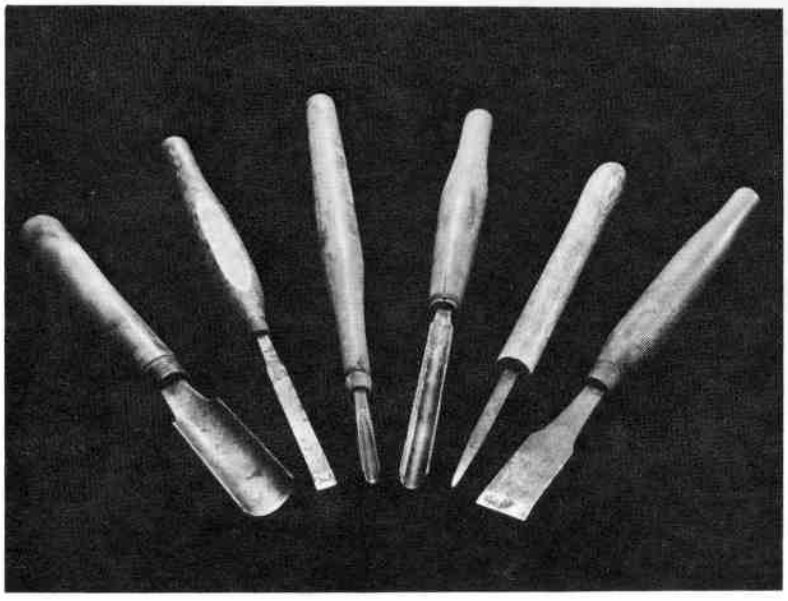


Plate 21. Turning Chisels and Gouges
D-7271, D-7274, D-7276, D-7275, D-7273, D-7279

Gouges were similar to chisels in form and purpose, except that their blades were curved rather than flat. All of the tools pictured would have been used in turning wood on a lathe, forming the hollows and rounds and other shapes. The handles were made long to give room clear of the turning stock for the workman to use both hands in guiding the tool. In addition, the chisel or gouge rested on a bar or "lathe rest" to give greater firmness when its tip touched the wood.

Dimensions: the lengths of these tools with their handles varies from 12 11/16" to 16 17/16"

Photo No.: 79-401

DRILL

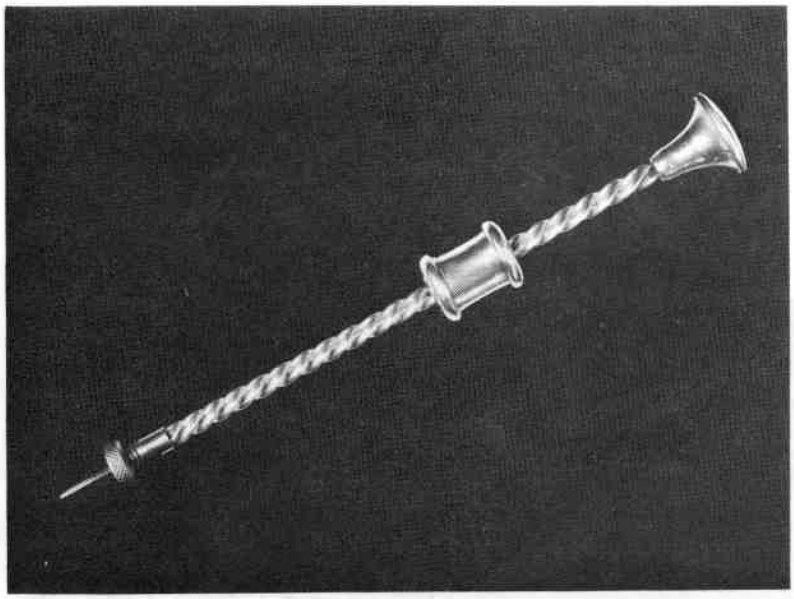


Plate 22. Spiral Drill

D-7789

The John Wilkinson Co. catalogue of Chicago, Illinois (1888) lists a very similar tool to this one "with 6 bits of Stubs' steel" at 70 cents. The slide moves up and down the spindle, turning the bit first one way, then the other. Like the brace and bits, this tool drills holes, but in thin metal as well as wood. The double action is a disadvantage in drilling, as it enforces an "idle stroke", and thereby, discontinuity. The tool is engraved with the word "Hobbies". W.L. Goodman (The History of Woodworking Tools. London: 1962. p. 180) calls this type of tool an Archimedian Drill, and mentions that the first known illustration of it appeared in the 1864 Marples Company catalogue.

Dimensions: 8 1/8" long

Photo No.: 79-402

FILES

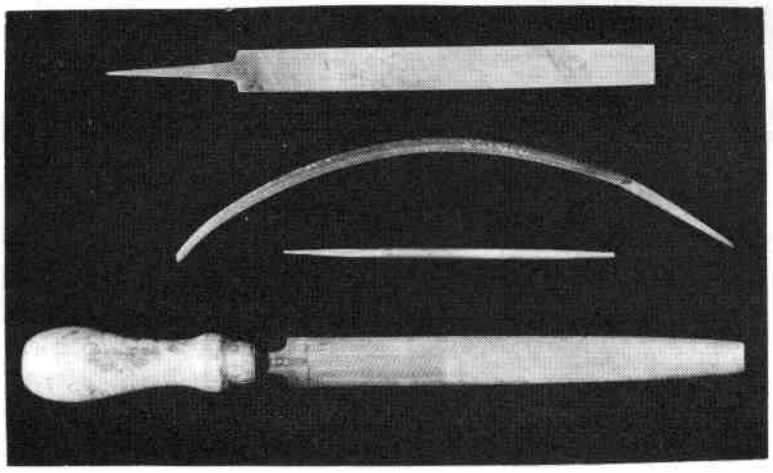


Plate 23. Files

D-7362, D-7353, D-7351, D-7333

Files were used in smoothing edges and surfaces recently cut. Their shapes, whether flat like D-7362 (top), round like D-7351 (third from top) or half-round (or "cabinet") like D-7353 (second from top) and D-7333 (bottom), conformed to the surface to be worked. The flat file has a single slanted cut on its surface while D-7353 has a two-way cut. Handles are not common on files despite the almost invariable presence of a tang.

Dimensions: D-7362: 11 7/8" long
D-7353: 15½" long
D-7333: 12" long
D-7351: 7 3/16" long

Photo No. 79-403

GIMLET

Plate 24. Gimlet

D-7528

The Sheffield List of 1889 (Illustrated Trade List of Prices of Sheffield Goods. Sheffield: 1889.) calls this a "shell spike gimlet". Like the even smaller awl, the gimlet was used to mark and begin a hole too small for the brace and bit. Or it might be used after the brad awl had begun the hole. These tools were very small; this one measures 4 1/16" with the handle.

Photo No.: 79-404

GOUGES

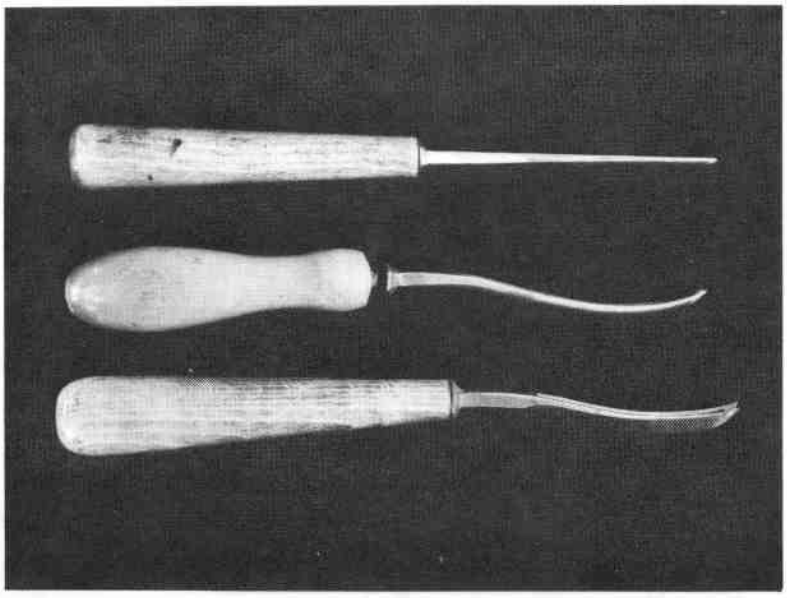


Plate 25. Carving Gouges and Carving Tool
D-7286, D-7304, D-7372

D-7286 (top) is a "straight" gouge, while D-7304 (middle) is a "curved" gouge because of its "S"-shape, and D-7372 (bottom) is a "curved parting tool". The last differs from a regular gouge in having a sharp fold along its back rather than a curve. These carving tools were powered by hand alone, not with strikes from a mallet. Their fine blades are about 1/8" to 1/4" wide.

Dimensions: D-7286: 8 7/16" long with handle
D-7372: 8 7/8" long with handle
D-7304: 8¼" long with handle

Photo No.: 79-405

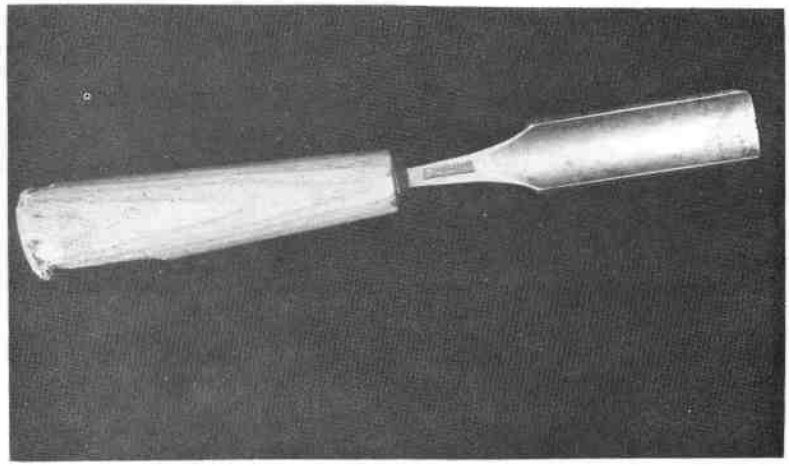


Plate 26. Firming or Forming Gouge
D-7291

Like the firming or forming chisel, the firming or forming gouge was used in conjunction with a wooden mallet to remove superfluous wood. Its blade however was curved rather than straight, and although carving gouges might be curved to any depth, there were usually three standard sizes for the firming gouge: "flat sweep", "middle sweep" and "regular sweep". The gouge shown has the deepest or "regular" sweep.

Dimensions: 9 3/8" long with handle

Photo No.: 79-406

JIG

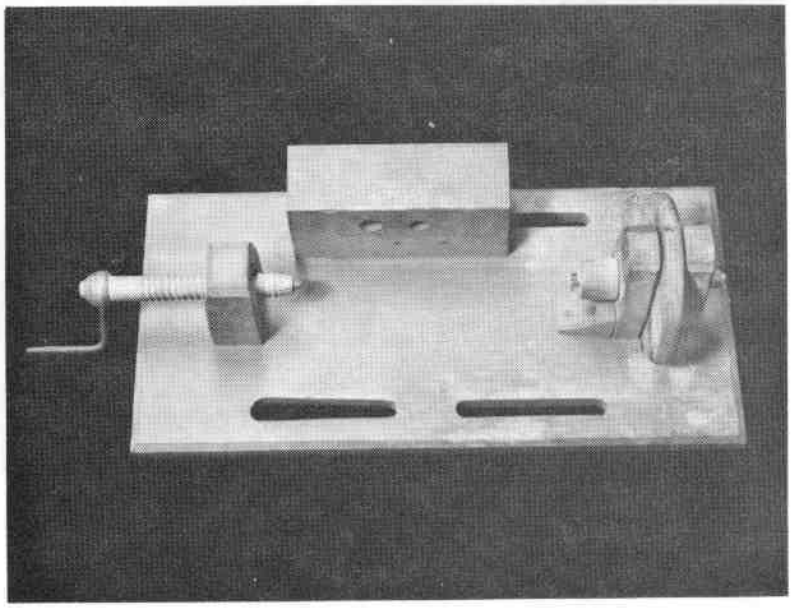


Plate 27. Jig

D-7894

This entirely homemade device held turned wood while it was being marked for fluting or reeding, or while it was being carved. The wheel at the right hand side is perforated at regular intervals so that, when held firm by dowels, it can hold the wood stock firm for symmetrical marking or carving. There are grooves for adjustable sliding tool rests on both sides of the jig between the puppets. The tool rest shown behind and between the puppets has holes bored through it where tools can be inserted and held firm in the same spot on the stock.

Dimensions: 25 7/8" long

Photo No.: 79-407

MALLET

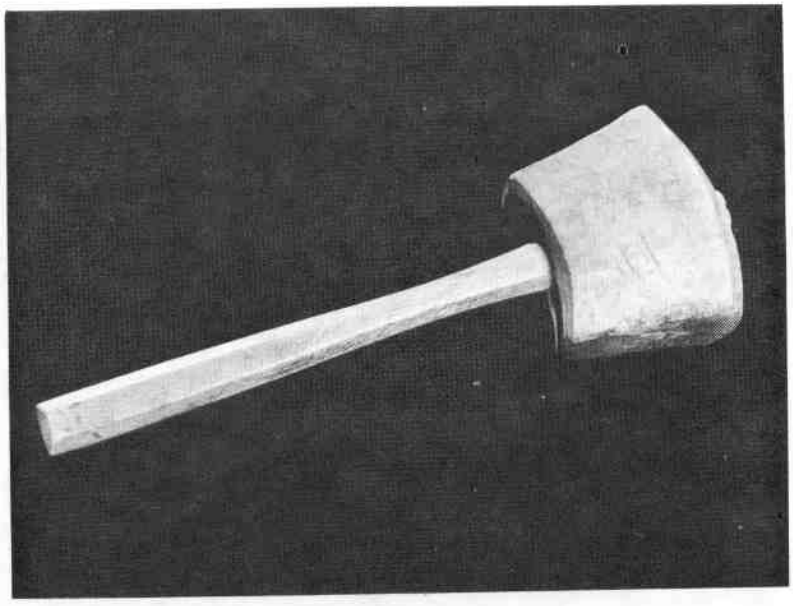


Plate 28. Mallet
D-7494

Hammers with metal heads were used only to strike other metal, such as nails. For all other purposes, wooden mallets were used in order not to scar the wood object. Among other things, they were used to strike planes in order to loosen the irons, to insert wedges and to strike chisels and gouges. D-7494 is of a very conventional shape, although mallets might be any shape from round to square.

Dimensions: $14\frac{1}{2}$" long

Photo No.: 79-408

PLANES - BENCH PLANES

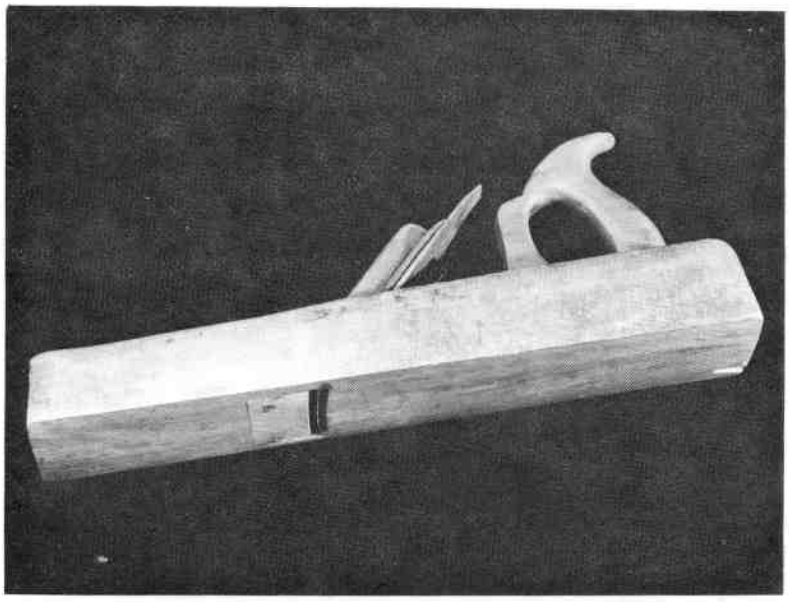


Plate 29. Fore or Jack Plane

D-7441

This was called the "fore" plane because it was used "before" anything else to smooth the rough planks coming directly from cutting and seasoning. The second term, "jack plane", used by Charles F. Hummel (With Hammer in Hand, The Dominy Craftsmen of East Hampton, New York. Charlottesville, Va.: 1968), has become confused, being applied as well to trying planes in the early 19th century (see plate 30) or even to panel or strike block planes in the later 19th century (see plate 31). This last occurs for example in both the already mentioned J.B. Shannon and T.B. Rayl tool catalogues of 1873 and late 1880's respectively. (Further, in these catalogues, the trying plane (see below) takes the name of the fore plane, while the fore plane, with its convex sole, does not appear at all. This may possibly be because at the time of publication of these catalogues, the large planing machines would have taken over the fore plane's function of smoothing lumber.) The slightly convex shape of the fore plane's iron prevents its corners from tearing into the rough surface

of a board. It leaves marks like undulations or ridges which may still be felt on the backs and undersurfaces of furniture (see plate 99). The presence of those undulations is a sure sign of hand planing, and of the probable hand manufacture of the piece. On top of the stock, in front of the bed, is a worn concave area (not shown) indicating where the mallet struck to loosen the iron for adjustment. To correct this, a round insert of hardwood, bone or metal could be put in, as in the panel plane D-7439 illustrated below. Typically, the plane tapers from front to back as a result of the woodworker's putting pressure on the front while planing. Further evidence of hard wear can be seen in the mouth which is very wide. This is because, after much use, the sole of the plane had itself to be replaned to recover its accuracy, and this widened the mouth, necessitating its repair. The blade is embossed "SPEAR & JACKSON, SHEFFIELD", a long-lived edge tool making firm dating from 1819 to 1967. As with all bench planes, the iron is a "double" one, a form invented c. 1750-1775, which helps prevent curling on cross-grained stuff and makes eviction of shavings easier.

Dimensions: $16\frac{1}{4}$" long x $2\frac{1}{2}$" wide

Photo No.: 79-409

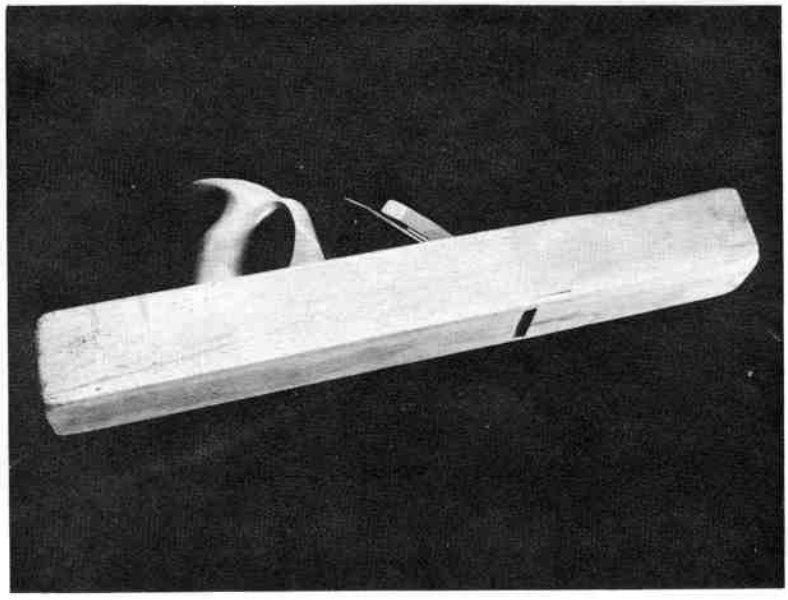


Plate 30. Trying or Jack Plane

D-7445

The term "trying plane" was first attached to this tool because it "tried" the wood after the fore plane, that is, it reduced the ridges left by the previous plane and further smoothed and straightened the wood. As mentioned above, (plate 31) by the early 19th century it was also called the jack plane. The sole and iron edge are absolutely straight and flat. The iron is embossed "SPEAR & JACKSON WARRANTED CAST STEEL", while the front of the block is stamped "WALLACE", which refers to the family of planemakers operating a number of firms in Dundee, Scotland, c. 1824-34. The front of the plane is further stamped with the owner's mark: "F. JONES". Trying planes varied between 20 to 22 inches in length.

Dimensions: 21 13/16" long x 3" wide

Photo No.: 79-410

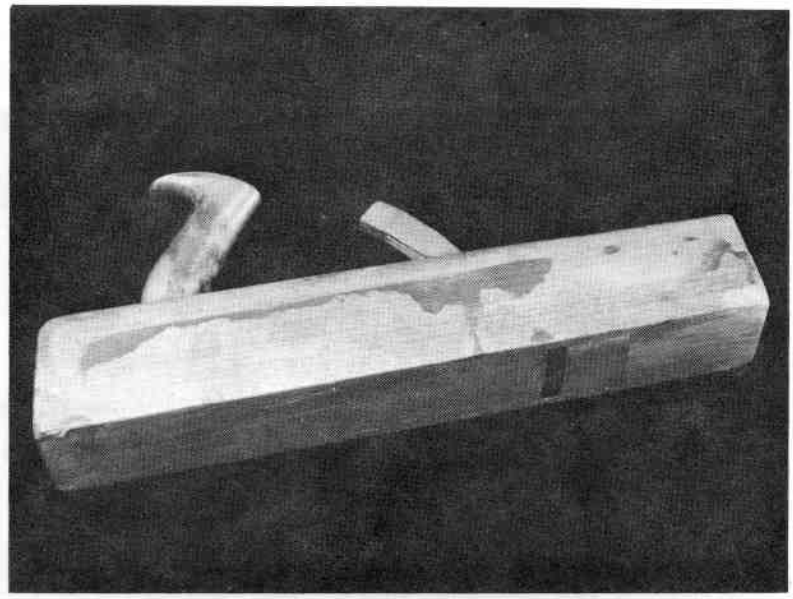


Plate 31. Panel, Strike Block or Jack Plane
D-7439

This type of plane, with a straight flat sole, was used variously to smooth the cross-grain and the ends of boards, to "shoot" short joints, bevels or mitres or to smooth the joints where decorative mouldings came together. To facilitate end-grain work, the iron was set at a low angle -- less that 45^{o} which was the "common" pitch for softwoods. Harder woods or cross-grain required a pitch of 50^{o} or more. The mouth on this plane has been re-inforced with hardwood and there is a hardwood striking button in front of the bed. The iron is embossed "SPEAR & JACKSON SOLID NUT" and the stock is marked: "A. HOWLAND & CO. N.Y.", a firm which operated from 1869 to 1874. The panel or strike block plane could vary between 10 and 17 inches in length, but it was always of a size easily handled with one hand.

Dimensions: 16 1/16" long x $2\frac{3}{4}$" wide

Photo No.: 79-411

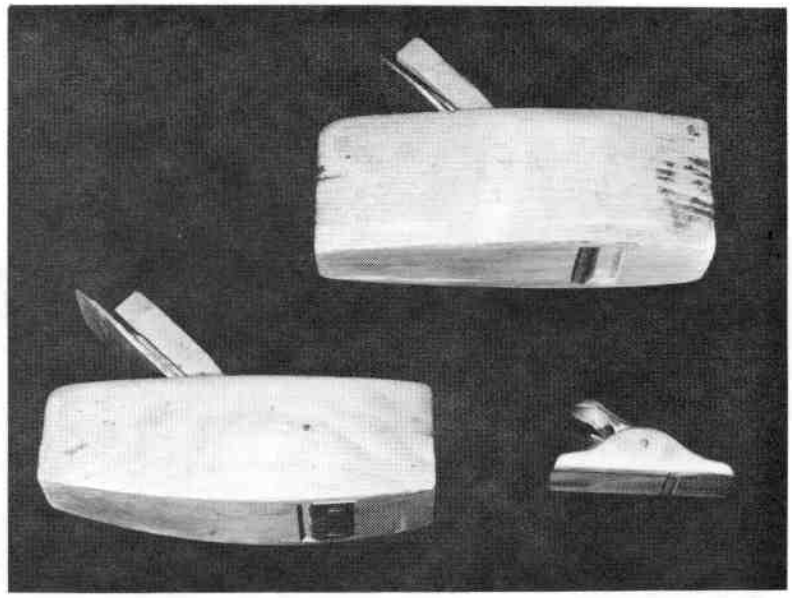


Plate 32. Smoothing Planes
D-7405, D-7410, D-7411

Both D-7410 (top) and D-7411 (bottom left) were planes which would have been used to do final smoothing. They were the last planes used on the wood and created a surface so flawless that any imperfections could not have been detected by the eye. D-7410 has the usual flat sole, but D-7411 has a curved one. It would have been called a "compass" plane and used for the surfaces of wheel rims, or for the curved parts of furniture, etc. Both planes are small so that they can be used where particular areas need attention. D-7410 is marked "J. Dawson" in script, and "MONTREAL" in Roman capitals without a border. D-7411 is embossed on the iron: "R. THOMAS WARRANTED CAST STEEL". This is the mark of Robert Thomas, planemaker at 1 Wardour St., Soho, London, 1852. Both smoothing planes are also marked with Jones's stamp.

The tiny $3\frac{1}{4}$" long thumb smoothing or modelling plane (bottom right) has an iron measuring only 1 inch. Like the spiral drill (plate 22), it is marked "Hobbies". It would have been used to smooth very small work. A similar all-metal plane was advertised by Alex. Mathieson & Sons of Glasgow, Scotland in their 1899 catalogue.

Dimensions: D-7405: 3 5/16" long x 1 1/16" wide
D-7410: $7\frac{1}{2}$" long x $2\frac{3}{4}$" wide
D-7411: 7" long x $2\frac{1}{2}$" wide

Photo No.: 79-412

PLANES - GROOVING PLANES

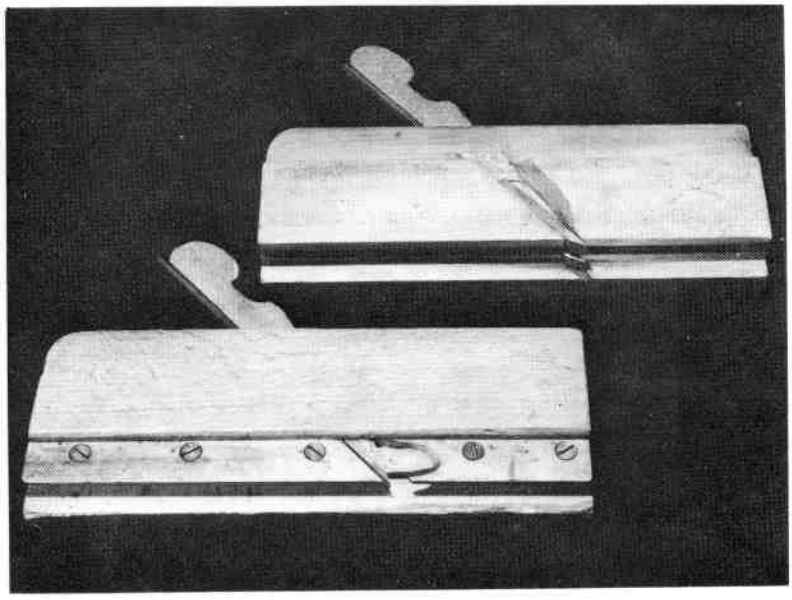


Plate 33. Tongue and Groove Set
D-7446, D-7438

This is a matched set of tongue and groove planes, marked by the manufacturers: "CASEY CLARK & CO. AUBURN, N.Y." That particular mark was used by the firm between 1858 and 1864. The planes were used to join the edges of boards by making interlocking grooves and "tongues" along their thin sides. D-7446 (top) cut the tongue 3/16" wide and D-7438 (bottom) cut the matching groove.

Dimensions: D-7446: $9\frac{1}{2}$" long x 1 5/16" wide
D-7438: $9\frac{1}{2}$" long x 1 1/16" wide

Photo No.: 79-413

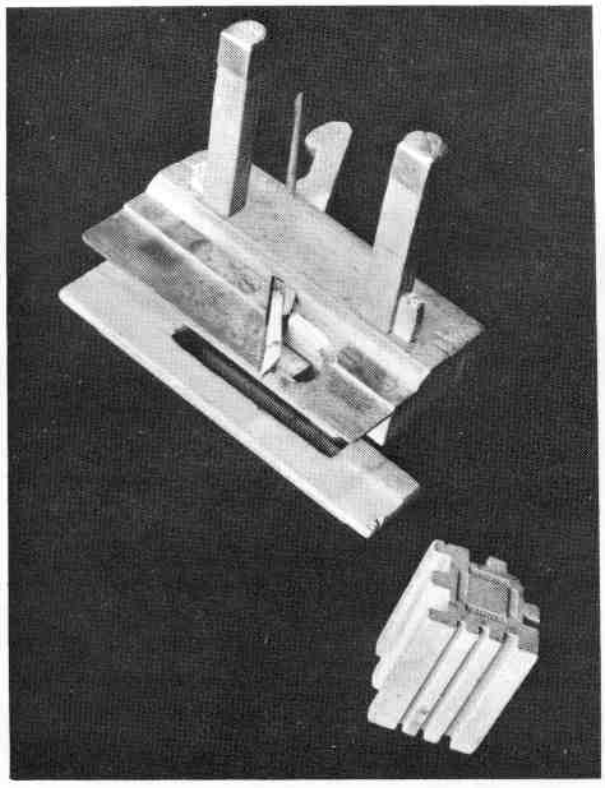


Plate 34. Adjustable Fence Plow and Gauge
D-7403, D-7877

Grooving planes were also called plow planes. This one has an adjustable fence which rides on two sliding arms penetrating the body of the plane. The fence can be set at different distances, and the mouth can be fitted with irons of different widths, so as to make this plow capable of cutting many sizes of grooves on many different thicknesses of board. In addition there is an adjustable stop operated by the brass screw on top of the stock which can determine the different depths of the cut. The plow is marked with Jones's stamp and with "WALLACE" (see plate 30) and can therefore be dated to c. 1824-34, originating in Dundee, Scotland. This type of tool is also called the "universal plough" and came into general use c. 1750-75. The gauge shown with it measures the size of plow irons.

Dimensions: D-7403: 8 7/16" long, adjustable width
D-7877: 3 5/16" long

Photo No.: 79-414

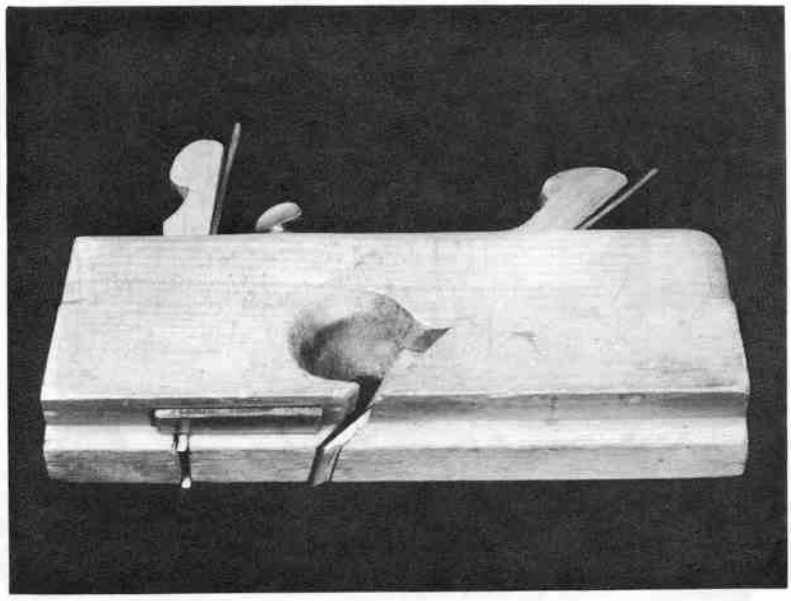


Plate 35. Dado

D-7435

The plow or groove planes shown before would cut a channel along the side of the board, with the grain of the wood. The dado, however, cut a channel on top of the board, or perpendicularly to the grain of the wood. Such grooves across the grain were needed, for example, for drawer bottom and shelf supports. In order not to tear at the wood, the plane iron was skewed and preceded by a pair of points set at the width of the cut. These points scored parallel lines in the stuff while the iron peeled the wood from between them. The depth of the cut was regulated by a stop gauge operated by a brass screw in the top of the stock. This plow is stamped "W. PARKES" in a zig-zag border, indicating it was made by William Parkes & Co., of 37 Staniforth St., Birmingham, between 1825 and 1833.

Dimensions: 9 7/8" long x 1 7/16" wide.

Photo No.: 79-415

PLANES - MOULDING PLANES

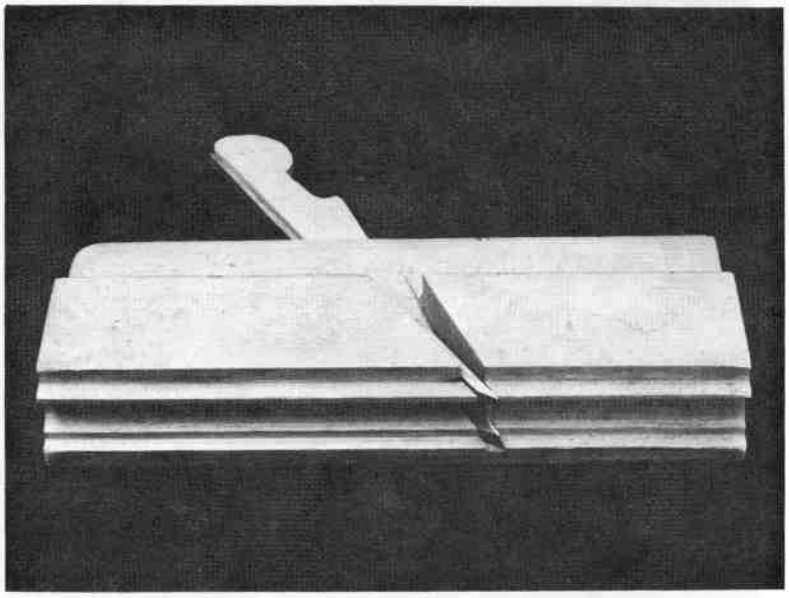


Plate 36. Astragal

D-7408

The astragal was a form of "bead" plane. It cut a thin rod or bead on the edge of a board, a door, a cabinet panel, a chair leg or table edge, etc., which served solely as decorative relief. This plane is stamped: "PHOENIX COMPANY, HITCHCOCKVILLE WARRANTED".

Dimensions: 9 7/8" long x 1 7/16" wide

Photo No.: 79-416

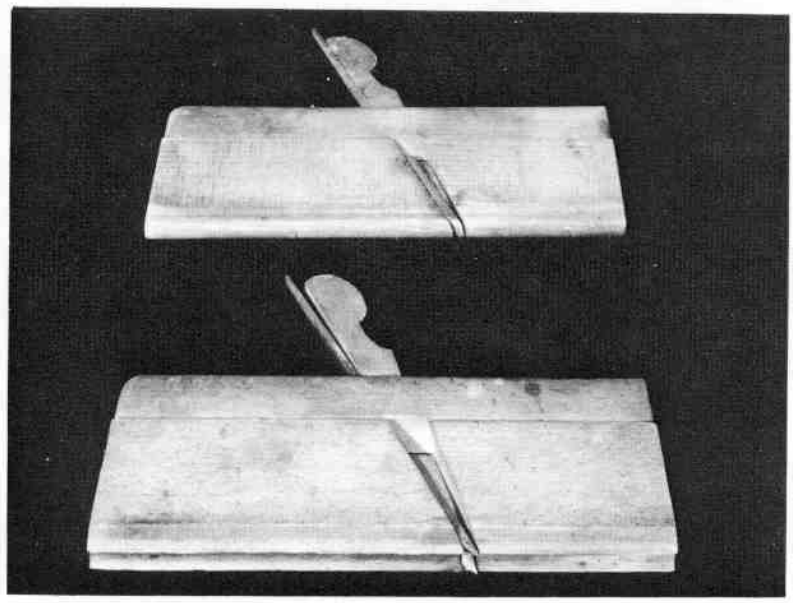


Plate 37. Hollow and Round Set
D-7448, D-7429

Like tongue and groove planes, hollows and rounds also came in matched sets. This set was made by "ADAM HOPE & CO. LONDON" as marked on their stocks. First invented in England around 1750, they were referred to as "casement planes" since their contour, no matter what their size, always formed an arc of 60° of 1/6th of a circle, a measurement referred to as a "casement". The "hollow", D-7448 (bottom) cut a convex cylindrical surface; and the "round", D-7429, (top) cut a concave cylindrical surface. Together they could form decorative curving mouldings.

Dimensions: D-7448: 9 3/8" long x 15/16" wide.
D-7429: 9 3/8" long x 11/16" wide.

Photo No.: 79-417

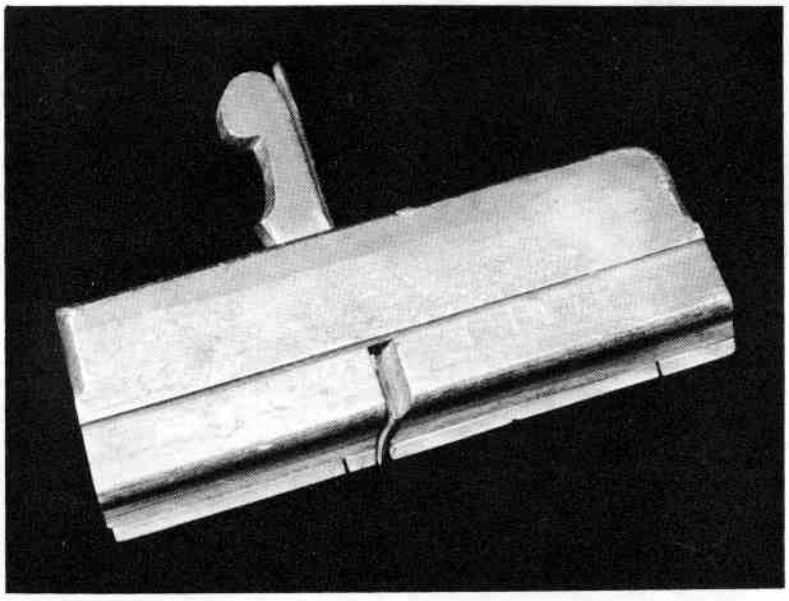


Plate 38. Side Snipe

D-7427

This is a special purpose plane; it has an iron open to the side (opposite to that illustrated) in order to clean out the interior of a "bead and quirk" after it has been cut by another moulding plane ("Quirk" refers to the fact that the bead is "sunk" and sitting close to the rest of the stuff so that a special plane is needed to clean the interior line smooth.) This plane is stamped "MUTTER" in a zig-zag border, meaning it was made by George Mutter, listed at 5 Rose St., Covent Garden, London, in 1791. The plane is further stamped "E. COLLINS", perhaps the name of a previous owner. It was not at all unusual for moulding planes to be handed down from one cabinetmaker to another; they were expensive to make and buy, made of very durable hardwood, and received relatively little wear compared to other cabinetmaker's planes, such as bench planes. Consequently they were valued and used long after their possible dates of manufacture.

Dimensions: 8 15/16" long x 13/16" wide

Photo No.: 79-418

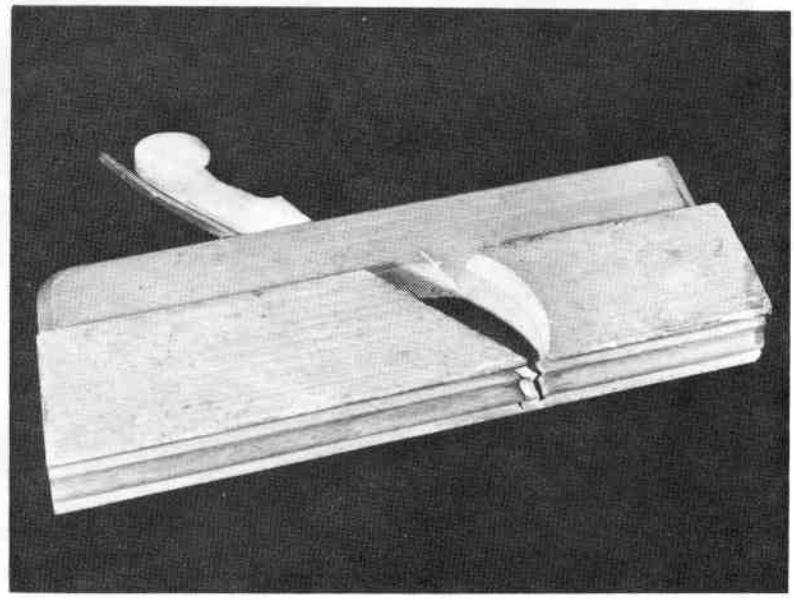


Plate 39. Edge Moulding Plane

D-7418

The iron of this moulding plane is irregularly shaped, incorporating an ogee curve. It may be a chair rail or door moulding plane. It is stamped "I. SYM" in a zig-zag border, indicating it was made by John Sym, Almonry, 3 Dean St., Westminster. W.L. Goodman (British Planemakers from 1700. New York: 1968.) lists Sym's dates as 1755-1802 . The same remarks regarding age which appear above for the side snipe are applicable to this plane, which may be the earliest dateable tool in the Jones collection. There was an almost infinite variety of curved and straight combinations possible in moulding planes; there are seven other irregular ones in this collection.

Dimensions: $9\frac{1}{2}$" long x $1\frac{1}{4}$" wide

Photo No.: 79-419

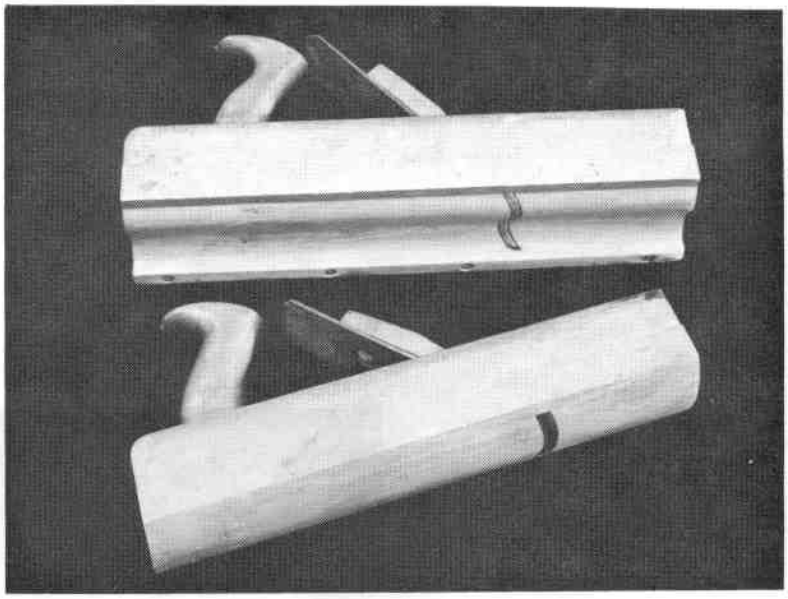


Plate 40. Large Moulding Planes
D-7443, D-7440

D-7443 (bottom) is in effect a large "round" (see plate 39), measuring 14 3/8" in length. Its purpose remains the same: to cut a concave cylindrical surface, but on a large scale, such as that needed for cornices, crown mouldings at ceilings, possibly fireplace mouldings or picture frames and stair rails. Hummel (op. cit. p. 119) states that they were "used over a long period of time by country craftsmen" even after they were abandoned by city cabinetmakers for other ways of cutting large mouldings. The irons on both planes are stamped: "PROVIDENCE TOOL CO. WARRANTED EXTRA CAST STEEL" and the stocks are stamped: "EDWARD CARTER TROY N.Y.". This is followed on D-7443 by: "SMITH CHAPMAN & CO. LONDON CW". Edward Carter's company was active 1854-57 and 1865-97. The last inscription on D-7443 indicates the dealer in London, Canada West, from whom Francis Jones may have purchased the tool. The term "CW" may indicate that Jones bought the plane before Confederation in 1867, although the firm may have continued to use that stamp even after that date.

A similar plane to D-7440 is advertised as a "cabinet ogee, cornice or picture frame moulding" in Mathieson's 1899 catalogue, an extremely late reference. It is offered in sizes of 2" to 5", the size of the irons. In this instance of technical "cultural lag" we should remember that Scottish joiners long remained loyal to hand production. In fact, as lately as the beginning of the Second World War they were still producing moulding by hand planing, possibly as much as 75 years after it had been made obsolete by advanced machinery in the United States!

Dimensions: D-7443: 14 3/8" long x $2\frac{3}{4}$" wide
D-7440: 15 15/16" long x 3 5/16" wide

Photo No.: 79-420

PLANES - REBATING OR RABBETING PLANES

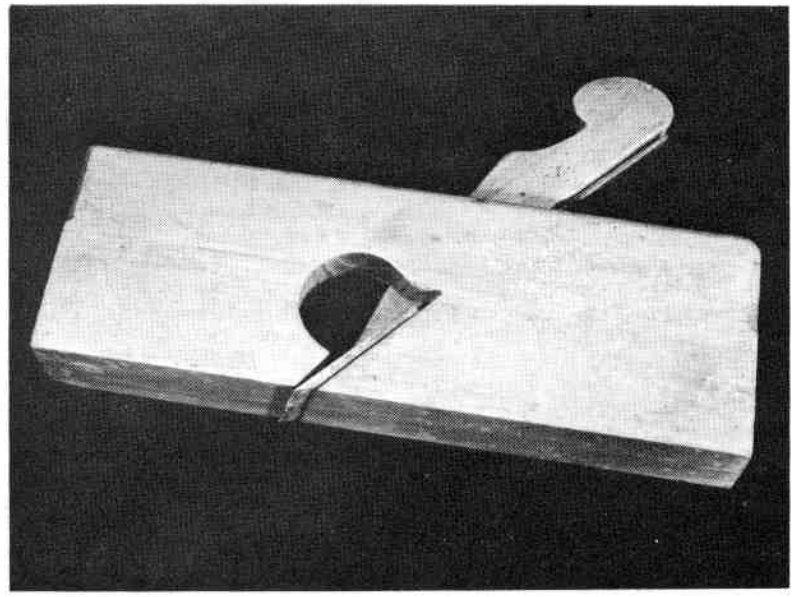


Plate 41. Rebating or Rabbet Plane
D-7422

Rebating or rabbet planes cut out a section from the ends of boards so that they could be overlapped and hence joined. The skew in the iron was to prevent tearing, since the cut would be across the grain. Shavings were expelled through the "eye" above the mouth of the iron. However as there is no fence on this plane to guide the tool, nor any scoring point, it may only have been used to finish and clean the rebate or rabbet after it had been cut by, for example, the tool below.

Dimensions: 9 5/16" long x 1 9/16" wide

Photo No.: 79-421

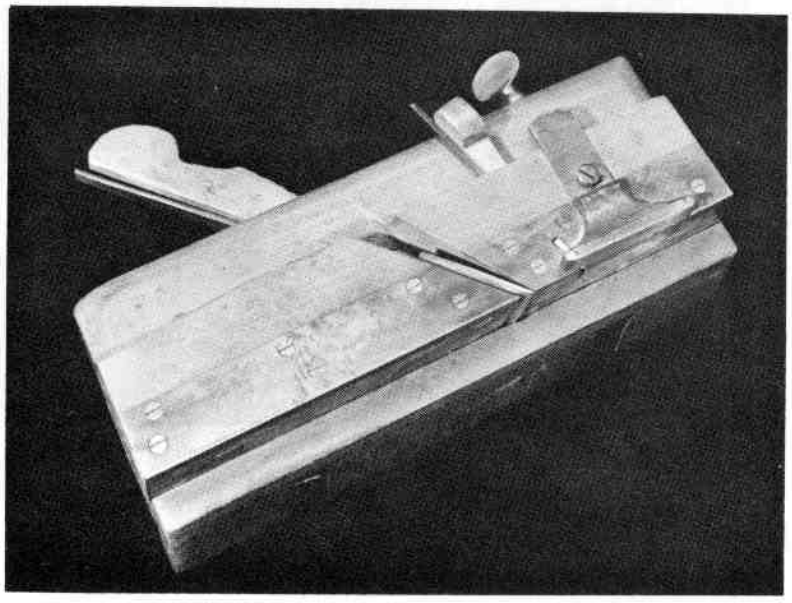


Plate 42. Fore or Moving Fillister or Filletster
D-7450

This plane fulfilled the same function as the one above; however, it has an adjustable fence and stop gauge to regulate the width and depth of the cut. There is also a scoring tooth or point, whose depth may also be adjusted, which first marks out the cut while the iron shaves out after it. This, like the skew mouth, is a precaution against tearing the wood when cutting cross-grain. The guide plate or fence and the screws are made of brass. This is the most sophisticated form of hand tool for its purpose. It is marked with Jones's stamp.

Dimensions: 9 5/16" long x 2 1/16" wide, with adjustable fence

Photo No.: 79-422

PLANES - TOOTHING PLANES

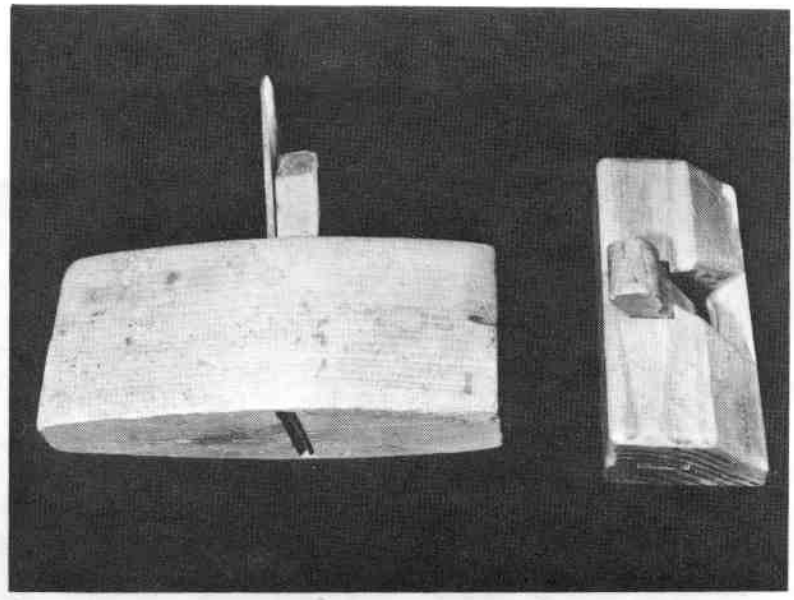


Plate 43. Toothing Planes
D-7404, D-7413

D-7404 (right) is a small plane (whose iron is now missing) which seems to have been called "Old Woman's Tooth", at least in the Alex Mathieson catalogue of 1899 where a similar plane is so dubbed. D-7413 (left) is the more usual form of a toothing plane. Its iron has a serrated edge and is set on a very high angle, almost perpendicular. The toothed edge scraped the wood to prepare it for receiving the glue for veneering. Another suggested purpose related to the high angle of its iron is that of smoothing down hard woods or woods of a twisted or cross-grain. However the Wilkinson tool catalogue of 1888 lists only the former purpose for its toothing plane on p. 8: "For toothing or roughing wood before glueing; also for 'cleaning off' inlays before and after glueing". The iron is marked "T. SHAW" for Thomas Shaw, who was making planes in Bartholomew Row, Birmingham, in 1843.

Dimensions: D-7413: 7" long x 2 3/8" wide
D-7404: 4 15/16" long x 2½" wide

Photo No.: 79-423

PUNCHES

Plate 44. Carving Punches

D-7710, item from D-7951 (tool chest)

These tools are carver's punches. Struck by a mallet, they would have created a decorative ground-work pattern in carving.

Dimensions: D-7710: 3 7/16" long

item from D-7951: 4 13/16" long; 3/8" diameter

Photo No.: 79-424

Plate 45. Nail Punch

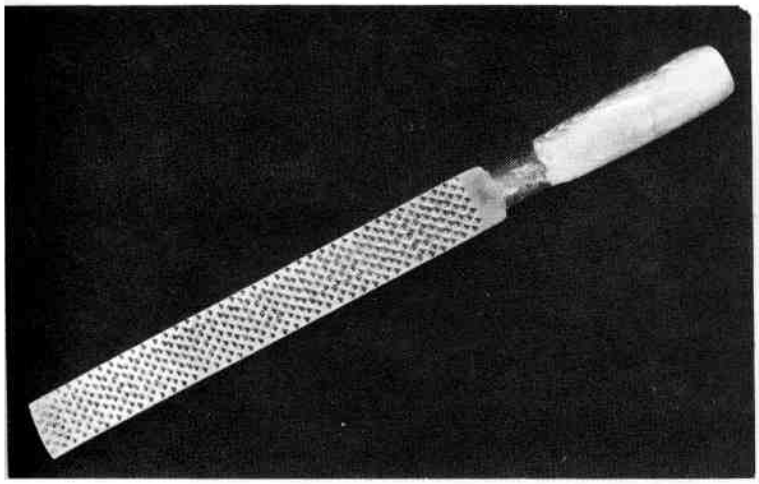
D-7771

This punch was made from a saw file. It is of rectangular shape and was used to push a rectangular-headed nail deeper below the surface of its hole so the nail could then be covered and hidden. It may also have been a cooper's tool, used to punch rectangular holes into metal, ready to receive nails or rivets. There are 22 such round or rectangular nail punches of different sizes in the Jones collection. A simple tool, it was invaluable for helping to finish the cabinetmaker's work cleanly and invisibly.

Dimensions: 4 5/8" long

Photo No.: 79-425

RASPS



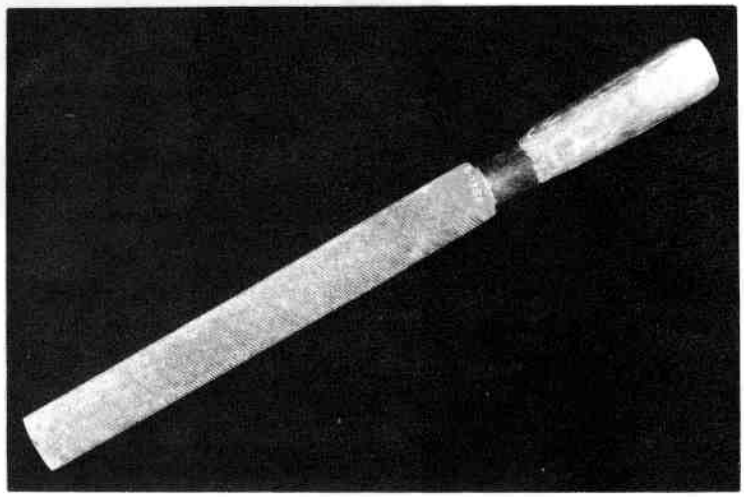


Plate 46. Rasps

D-7359, D-7366

Both sides of D-7359 are shown (top two illustrations), one side a heavy "horse rasp", the other a rough flat file, bastard cut. This is a very large tool, being 20¼" long and 1 9/16" wide. D-7366 is the more commonly known half-round or "cabinet" rasp; it is only 12½" long and 1 1/16" wide. Rasps are basically rough files, used for coarser surface smoothing.

Photo No.: 79-426 (top), 79-427 (middle) and 79-428 (bottom)

SAWS - FRAMED

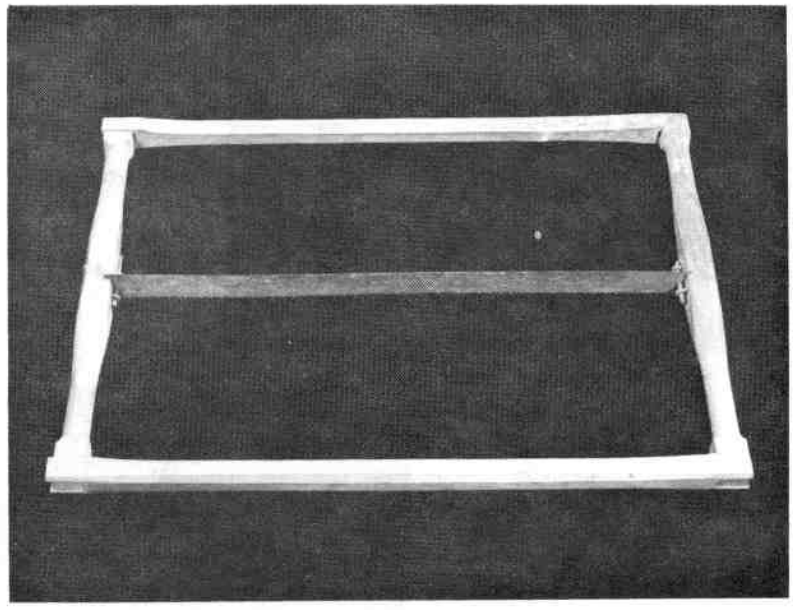


Plate 47. Frame Saw

D-7464

This saw may have been used for cutting straight wood planking from small logs which did not need to be cut in a pit. It seems more possible however that it was used for veneer cutting. The homemade frame, not overly large for its type, is meant to be gripped by two people, one on each short end, to guide it. The grips are turned as part of the frame and placed on the inside of the saw next to the blade, an unusual design, since saw handles were usually attached to the outside corners of the saw. The blade is 1 7/8" wide.

Dimensions: 30 1/8" long x 20 9/16" wide

Photo No.: 79-429

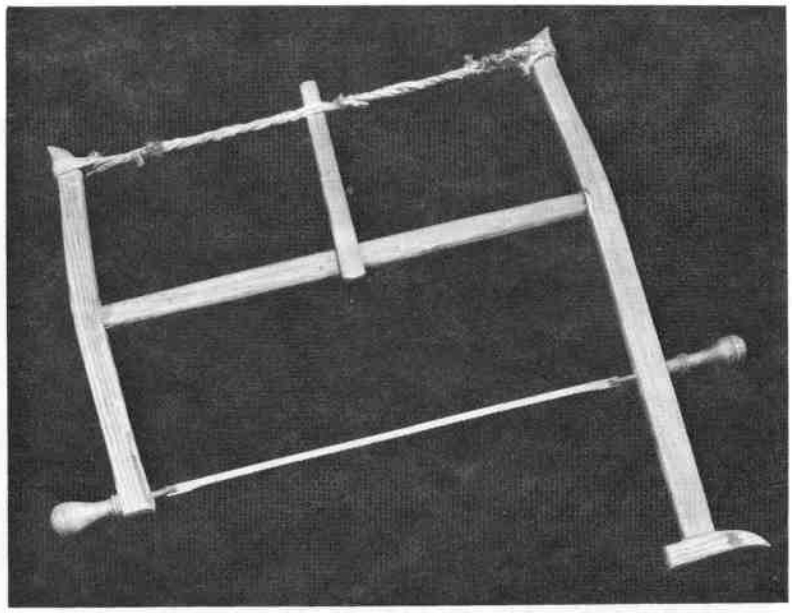


Plate 48. Frame Saw, Bettye Type

D-7465

The homemade frame on this saw is a combination of two types of saw. Like the bow saw, the two round turned handles can adjust the angle of the thin blade to accommodate cutting around corners and curves; but the long extension of the frame on one side into a third handle is the design of a buck saw, which is held by both hands from one side. The bow saw could come in many handy sizes for fine work and could be held perpendicular by one hand on the centre rod, cutting with an action similar to the later machine scroll saw. The blade on the buck saw however is usually much larger than that shown here and is not adjustable, being used for cutting wood or logs into straight lengths. The blade is stamped "WILLMOTT N.Y. CAST STEEL", and has 6 teeth to the inch.

Dimensions: 37" long including turned handles; blade: 24" long

Photo No.: 79-430

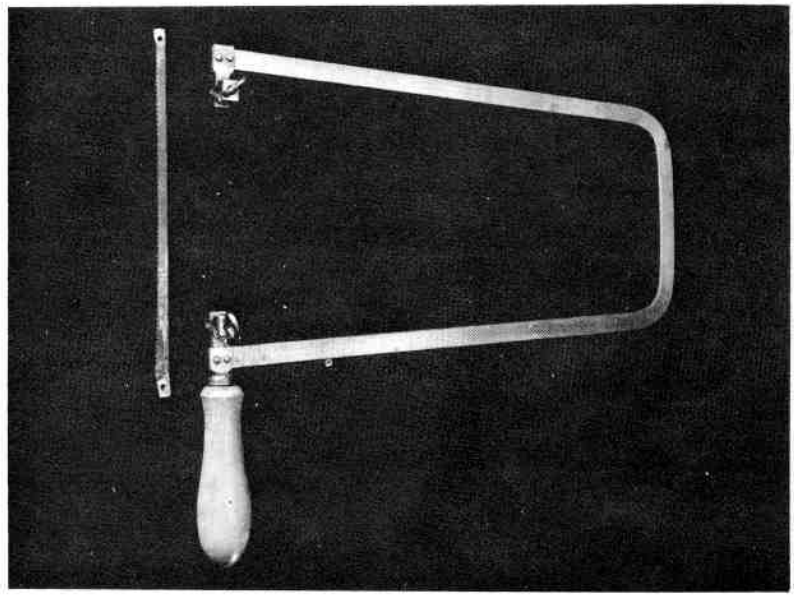


Plate 49. Scroll Saw Frame and Blade
D-7476, D-7480

The blade illustrated does not fit the saw frame; it is however the type which would have been used in such a frame. The function of the scroll saw was to cut flat small ornamental work; its frame is shaped so as to allow room for interior cuts and for unusually shaped stuff. Between them, the hand scroll saw, the small bow saw and the compass saw (see plate 53) could do the type of work which was later done by a band saw and a machine scroll saw in the factory.

Dimensions: D-7476: $11\frac{3}{4}$" with handle
D-7480: 8 1/8" long

Photo No.: 79-431

SAWS - OPEN

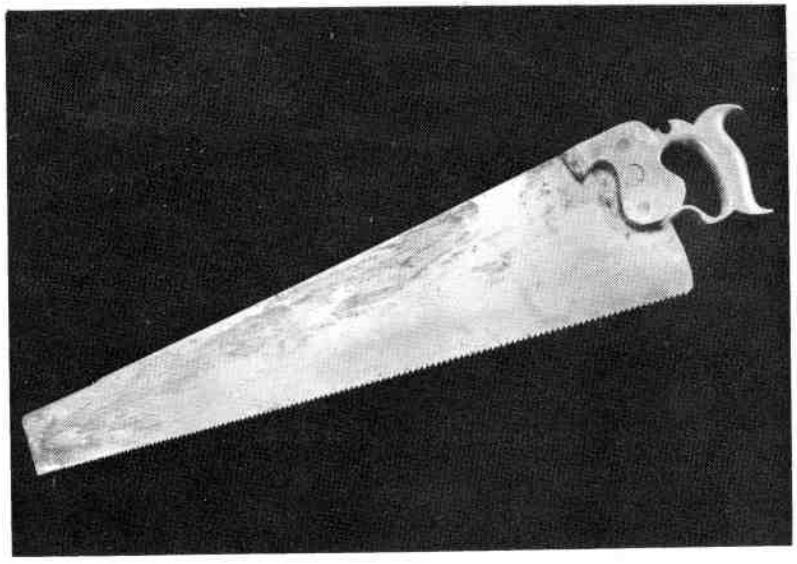


Plate 50. Rip Saw

D-7471

This is a long rip saw with a variable number of teeth to the inch. Toward the handle there are 5 to the inch, graduating to 7 at the tip. On the blade is: "HENRY DISSTON & SONS KEYSTONE SAW WORKS, Philadelphia Cast Steel Warranted #7 patent ground" and the trademark, indicating that it was made by that famous U.S. firm as their "#7" model. The rip saw was used for coarse cutting on large stock. It was as much a carpenter's tool as a cabinetmaker's.

Dimensions: 32 13/16" long with the handle; the blade is 28½" long.

Photo No.: 79-432

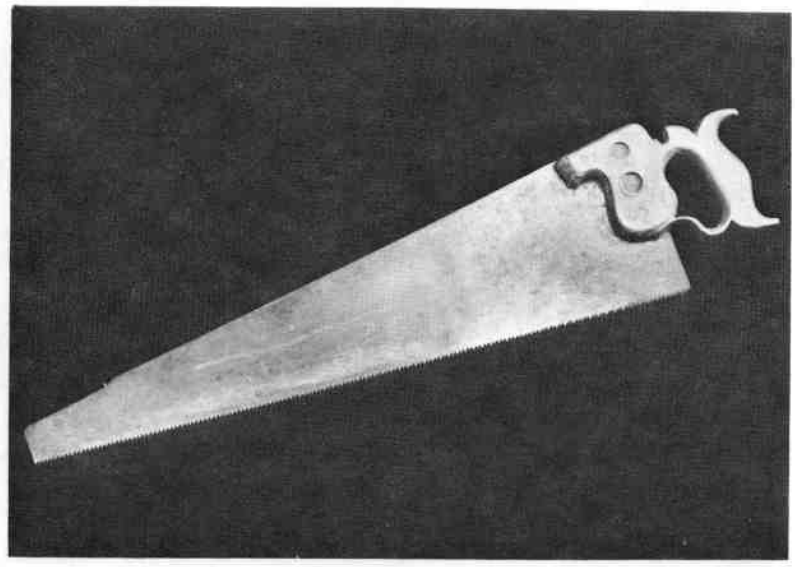


Plate 51. Hand Saw
D-7484

A standard saw for cutting wood straight in medium or fine work, this hand saw has a blade 26 1/8" long with 7 teeth to the inch. Like all slanted peg-tooth saws it cuts only on the downstroke. On one of the brass rings on the handle are the words: "J. FLINT, SUPERIOR PATENTED DEC. 31, 1867" along with the trade mark of a coat of arms and the motto "Dieu et mon Droit". On the blade is marked: "J. FLINT ST. CATHERINES CAST STEEL WARRANTED". The groove in the back at the tip is meant to rest on a nail -- saws were stored upside down against a flat surface (wall or tool chest) with the handle and tip sitting on nails.
Dimensions: 30 1/8" long with the handle.
Photo No.: 79-433

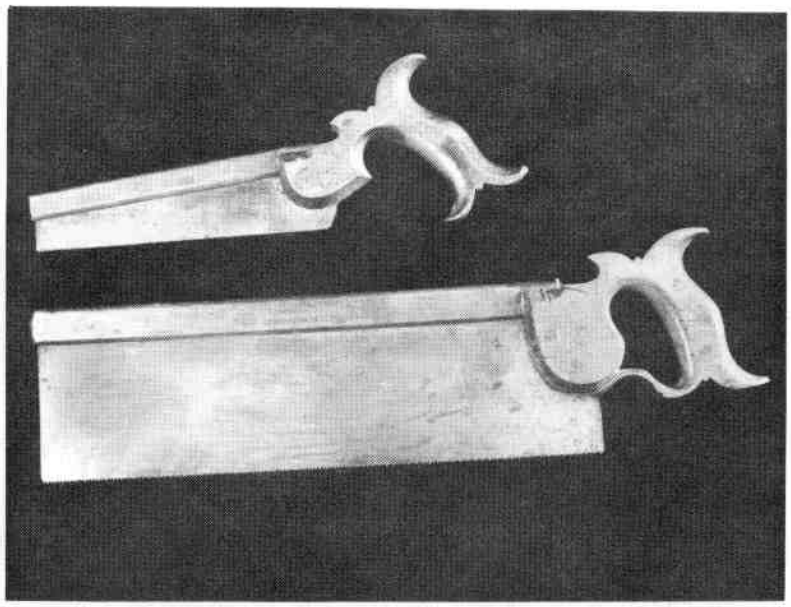


Plate 52. Back Saws

D-7470, D-7474

These saws have re-inforced backs of brass or steel to prevent buckling or waving during sawing. This is particularly helpful in precision sawing such as that done by D-7470 (top) which is a dovetail saw. Its blade is 7 5/8" long and has 18 teeth to the inch. The blade is stamped: "ROBT SORBY CAST STEEL", a maker at 2 Union St., Sheffield, in 1833 and at Carver St., Sheffield, in 1851.

D-7474 has a closed handle, a blade 14 inches long and 11 teeth to the inch; it can therefore be identified as a sash saw. The stamp on the blade reads: "JOHN BRAMALL CAST STEEL WARRANTED MANUFACTURED FOR SMITH CHAPMAN & CO LONDON". This addition of a Canadian dealer's name to a Sheffield-made saw raises the question of whether Canadian dealers placed their own particular saw orders with English firms. Was this perhaps a standard pattern with just the dealer's name added? Or was this a custom pattern made for the southern Ontario market? In this last connection, it should be remembered that it was not unusual for manufacturers to design their tools according to the idiosyncratic preferences of different market areas.

Dimensions: D-7470: 12 13/16" long with handle

D-7474: 18 7/8" long with handle

Photo No.: 79-434

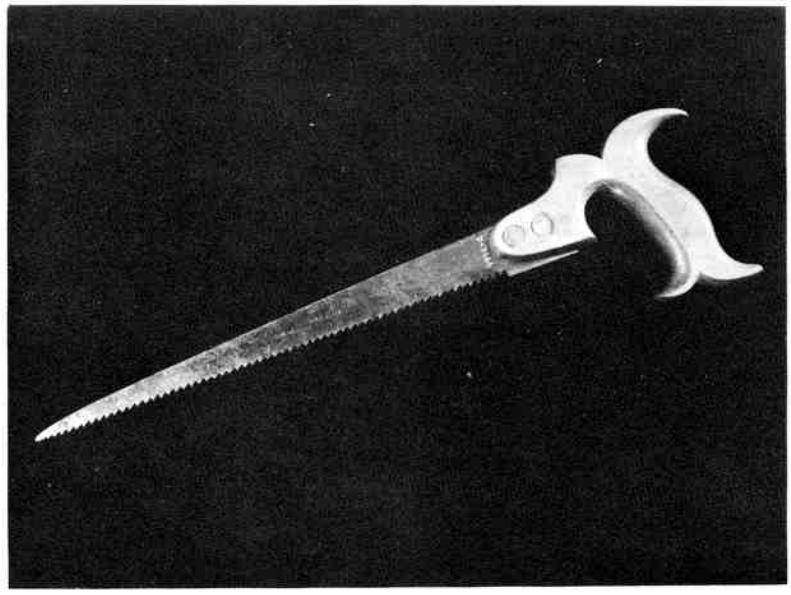


Plate 53. Compass Saw
D-7466

The compass saw was used to cut tight or interior curves. This is the conventional pattern; it is marked "_URLY AND DIETRI_ GALT ONT. CAST STEEL WARRANTED" indicating it was made after Confederation (the term "Ont.") by Shurly & Dietrich, a Canadian firm.

Dimensions: D-7466: 15 15/16" long with handle

Photo No.: 79-435

Plate 54. Keyhole Saw
D-7477

A finer version of the compass saw, the keyhole saw has a thin tapering blade which can be retracted into the handle as a precaution against its snapping off during use on very small holes or in making shallow incisions. As may be inferred, it is used to cut tiny interior holes and curves such as keyholes, latch and lock holes, etc.

Dimensions: handle: 8 1/8" long (blade is retractable)

Photo No.: 79-436

SCREW BOXES

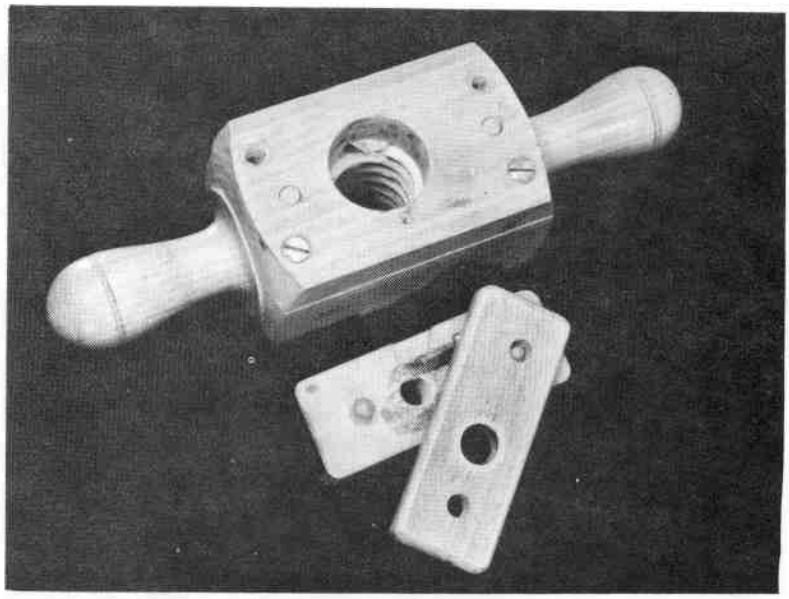


Plate 55. Screw Boxes
D-7520, D-7523

Screw boxes could cut threads onto dowels. Together with screw taps (see plate 57 below) which cut matching threads into holes, they were invaluable for allowing the cabinetmaker to attach wooden parts to each other where a mortise and tenon was inadequate or impossible, such as on the turned tops of bedposts, the turned feet of chests and cabinets, the knobs on drawers, etc. In addition, wooden screws as tool parts were needed in, for example, bench screws, wood clamps and vises (see plate 60). D-7520 has been opened to reveal the cutting edge which slices away the excess wood as the dowel is screwed through the box (or the box is revolved around the dowel). In both boxes the blade has been homemade from a triangular file. The shavings are expelled through a side hole. The bodies of the tools were also probably made by Jones himself; they are both marked with his stamp.

Dimensions: D-7520: 4 3/16" long
D-7523: 10 7/8" long overall

Photo No.: 79-437

SCREW PLATE

Plate 56. Screw Plate
D-7512

This device served the same purpose for metal screws as the screw box did for wooden ones; it cut the thread onto the shaft of the screw blank. The different size holes correspond of course to the different possible screw sizes. None of the taps which would have matched the holes in this plate have survived. It is marked with a maker's name, possibly "TOLLNER".

Dimensions: 7 9/16" long

Photo No.: 79-438

SCREW TAPS

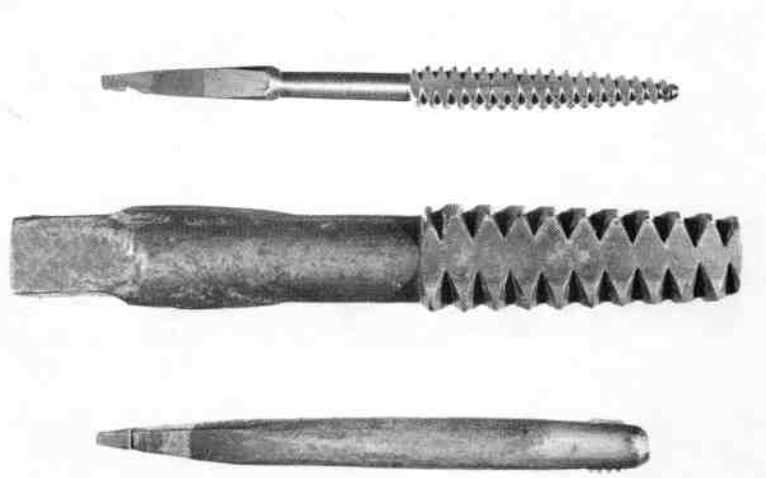


Plate 57. Screw Taps
D-7795, D-7515, D-7521

The screw tap cut threads into a wooden hole to match the screws cut by the tool illustrated in plate 55. D-7515 (centre) would have been turned using a handle probably like that of an auger (see plate 15) while D-7521 (right) and D-7795 (left) could have been placed in a brace.

Dimensions: D-7795: $6\frac{1}{2}$" long
D-7515: 8 3/8" long
D-7521: 6 13/16" long

Photo No.: 79-439

SPOKESHAVE

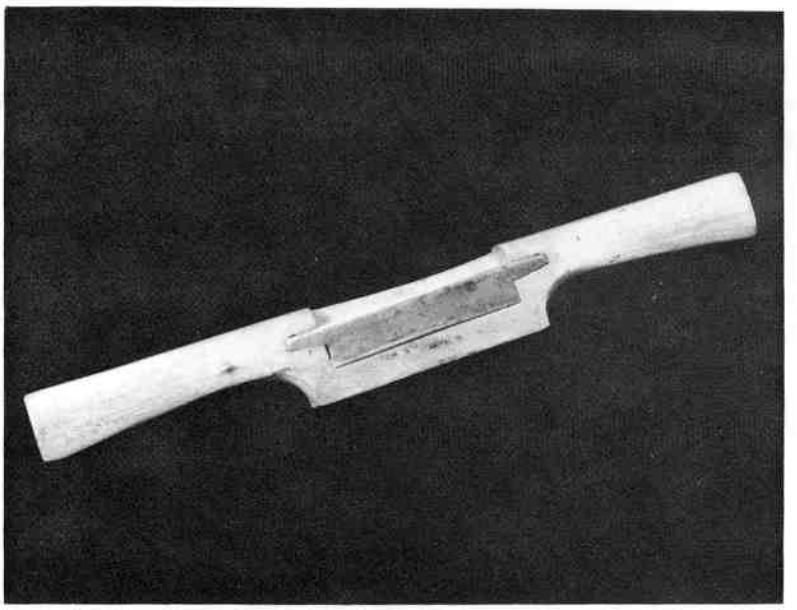


Plate 58. Spokeshave
D-7574

This is one of the more versatile woodworking tools, being used in many different crafts. It shaved out thin layers of wood in shaping and smoothing a piece. It needed both hands to use, with the stuff fixed in some way, for example in a vise, or pressed between the worker's chest and another surface. Unlike the drawknife, a similar tool, the blade is protected. The width of the mouth could be adjusted by tapping the tangs. The blades on joiner's spokeshaves usually ranged from $1\frac{1}{2}$" to $4\frac{1}{2}$". This one is 3 inches. It would have been most useful for smoothing the curves of legs, chair seats, and cresting rails, etc., or it could do rough trimming before planing, help make tool handles, wheel spokes, yokes, and so forth.

Dimensions: 11 3/8" long

Photo No.: 79-440

THE HAND TOOLS

Assembling and Finishing Tools

GLUE POT WITH BRUSH & GLUE

Plate 59. Glue Pot with Brush and Glue
D-7981 a, b, D-7506, D-8105

When joints were fitted together, they were glued for extra durability. The animal glue (D-8105) was kept in a hard clear amber form until needed, then melted in the top half of a kind of "double boiler" cast iron glue pot (D-7981 a,b) and applied hot to the surfaces to be joined with a brush (D-7506). The piece was then kept in a clamp until the glue had set. The glue pot in the illustration is marked "CLARK & CO. NO. 1".

Dimensions: D-7981a: 6 9/16" in diameter
D-7506: $8\frac{1}{4}$" long

Photo No.: 79-441

CLAMPS

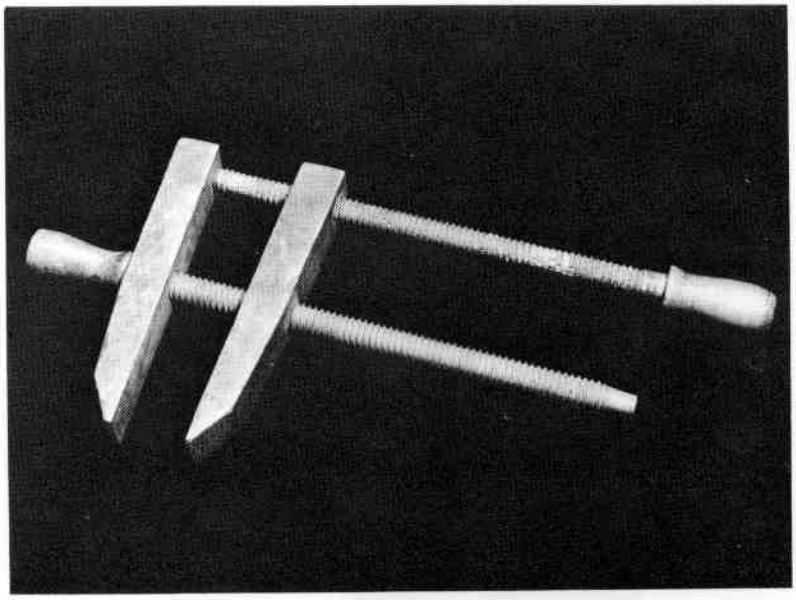


Plate 60. Clamp or Hand Screw

D-7387

This all wood homemade clamp has two jaws tightened by long screws. Jones had 17 of them in varying sizes. As mentioned above, their function was to hold recently glued pieces until the joints had set. Because their surfaces were of wood, they would not damage the objects with their pressure.

Dimensions: the jaws are 11 3/16" long x 2" wide; the screws are 21 7/8" long.

Photo No.: 79-442

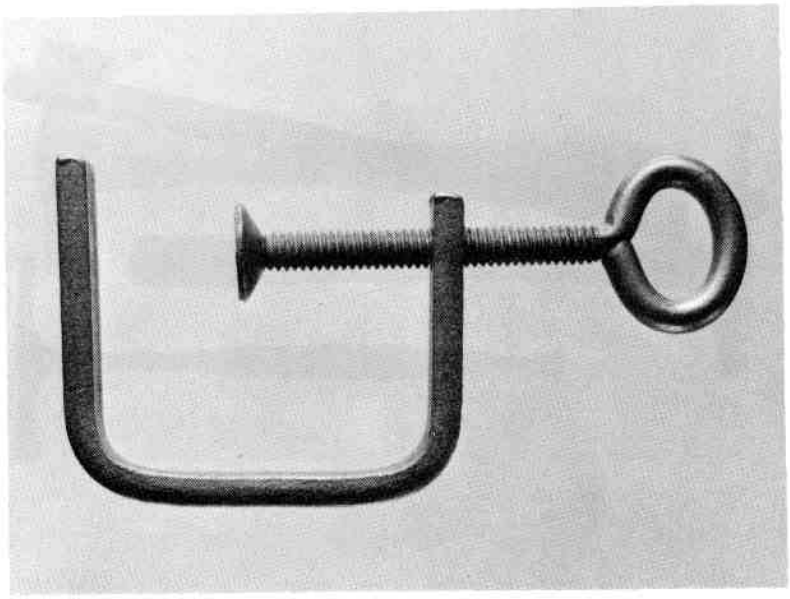


Plate 61. Screw Clamp or "U" Clamp

D-7790

Wilkinson (op. cit. p. 12) advertises a similar "Handy Clamp" which "can be used for quilting frames, veneering, for mending furniture, and glueing scroll saw work, and in a thousand different ways".

Dimensions: the "U" section is 4 1/8" long x 2 1/8" wide.

Photo No.: 79-443

Plate 62. Door or Cabinet Clamp
D-7845

Large clamps such as this would be used to hold fast when glueing up carcases, such as those for cabinets, cupboards, bookcases, bureaus, chests of drawers, even frames, doors and panelling. They might also be used in tightly seating mortise and tenon joints to hammer in their pegs. All four such clamps in the Jones Collection are homemade, with the ratchets for adjusting the clamp being underneath the main bar, rather than on top of it, although the latter was apparently the more common style.

Dimensions: 61½" long

Photo No.: 79-444

HAMMERS

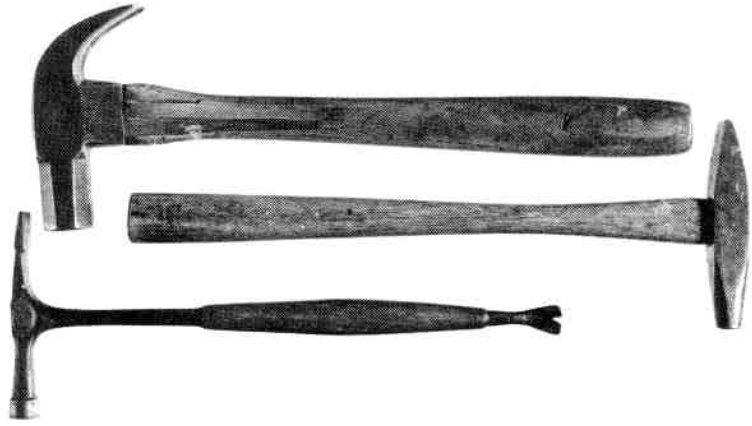


Plate 63. Hammers
D-7490, D-7487, D-7489

The top hammer, D-7490, is an adze-eye nail hammer for heavier nailing; it has a claw for removing nails on its head. D-7487 (middle) is a riveting hammer used on tacks and small nails, while D-7489 (bottom) is an upholstery tack hammer. The latter is marked: "PATENT DEC. 10, 1867, FEB. 13 1869" on the head. Its claw for removing tacks is at the end of its handle. Spons' Mechanics' Own Book (3rd edition, New York: 1889) calls this an "American model".

Dimensions: D-7490: 12 7/8" long
D-7487: 12¼" long
D-7489: 10 7/8" long

Photo No.: 79-445

PAINT BOX WITH PAINT BRUSHES

Plate 64. Paint Box with Paint Brushes
D-8045, D-7507, D-7508

The paint box has 14 compartments, each with at least one, often more, packages of dry paint in it. The paints are mostly in powdered form, some congealed into nuggets, others in their original hard fragments, needing to be ground into a powder. These paints would have been mixed with oil to make them usable. Painting was a widespread method of finishing furniture cheaply and of preserving and ornamenting its surface. Spons (op. cit. pp. 405-433) devotes a long section to "painting, graining and marbling", analysing in detail the chemical bases and actions of different colours. The paints were not only earth colours, imitative of wood; they range, in the paint box shown, from brilliant crimson and powerful blue to bright yellow and green. Jones may not have painted only his cabinet work but also items like pillar post boxes, ladders or iron work, etc. There is, for example, one package labelled "Warranted Genuine Mexican Black Lead. This article gives a firm lustre to Grates, Stoves, and all kinds of Iron Work...". Some of the paints identified by name on their packages are: "burnt umber", "celestial blue", "Brunswick green", "Sugar of Lead" (lead white?), and "mortar red".

The brushes D-7507, and D-7508 would have been the type used to apply the paint.

Dimensions: D-8045: 18 7/8" long x 16½" wide x 4 7/8" high
D-7507: 10½" long
D-7508: 9½" long

Photo No.: 79-446

PINCERS OR CUTTING NIPPERS

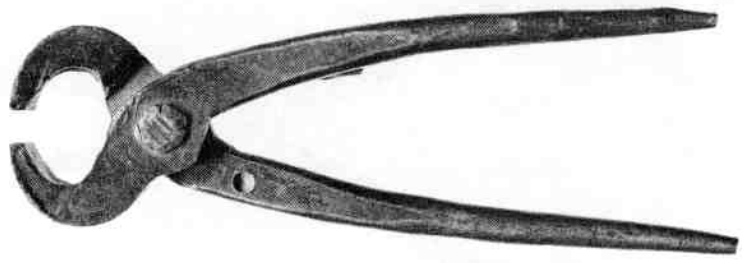


Plate 65. Pincers or Cutting Nippers
D-7540

Pincers were used to cut steel wire, perhaps in upholstery work. Even though these appear to be distinctly homemade (notice their uneven shape and lengths of handle grips) they have been stamped "Jelling-Haus and Co.", possibly a local firm.

Dimensions: 7½" long

Photo No.: 79-447

PLIERS

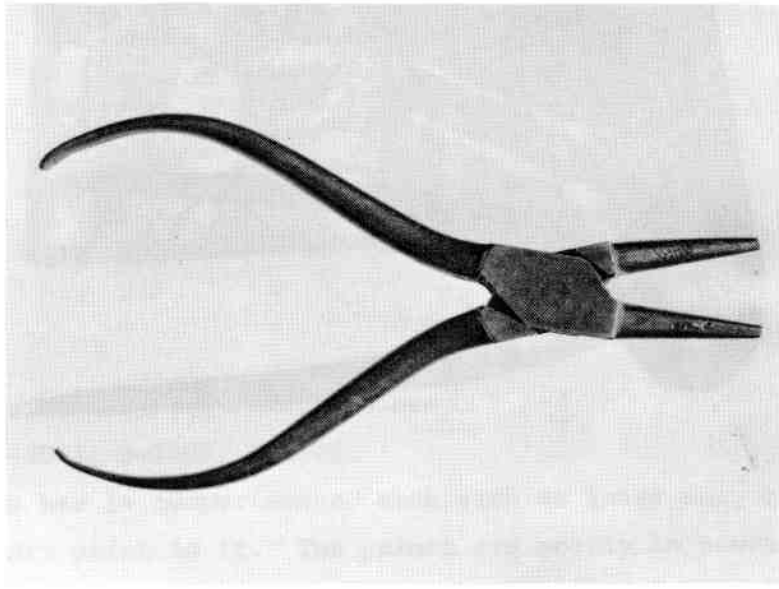


Plate 66. Pliers

D-7539

Round-nosed pliers were useful for bending wire and spring, perhaps, again, in upholstery work.

Dimensions: 5 7/8" long

Photo No.: 79-448

PUTTY BOARD, PUTTY STICK, PUTTY KNIFE & GLASS CUTTER

Plate 67. Putty Board, Putty Stick, Putty Knife and Glass Cutter
D-9138 a,b, D-7582, D-7578

This equipment would have been used in cutting and fitting glass and mirrors, perhaps into cabinets, bookcases, or dressers. The board and stick (1" thick, D-9138 a,b) were used to mix the putty; the knife (D-7582) (incidentally marked "Sheffield Cutlery Co., Montreal") would apply it and the glass cutter (D-7578, bottom) would cut the sheets to the necessary size and shape. The indentations on the side of the glass cutter were gauges to check the thickness of the glass being used.

Dimensions: D-9138a: 20¼" long x 15" wide
D-9138b: 22¾" long x 3" wide
D-7582: 3½" long
D-7578: 4 1/16" long

Photo No.: 79-449

SANDPAPER CORKS OR BLOCKS

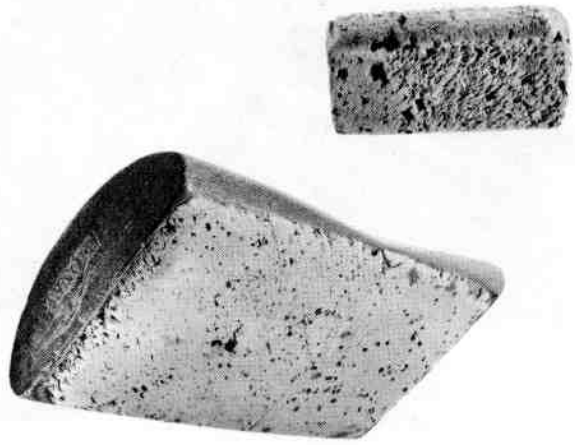


Plate 68. Sandpaper Corks or Blocks
D-7572, item from D-7951 (tool chest)

These corks or blocks would have been wrapped in sandpaper and rubbed over the piece to smooth it down. The small one has a curved side (not shown) which would have been used to sand curved surfaces such as mouldings or dowels, etc. Sanding was constantly necessary in cabinetmaking to give the object clean, faultless surfaces and lines.

Dimensions: D-7572: 4 1/16" long
item from D-7951: 2 1/16" long

Photo No.: 79-450

SCREWDRIVERS

Plate 69. Screwdrivers
D-7532, D-7546

The individual commercially made screwdriver was a relative latecomer to the cabinetmaker's tool box. Jones owned one which has survived, but there are 4 homemade ones like D-7546 (bottom). The screwdriver bit in a brace performed the same function. D-7546 is fashioned from a saw file. The flattened sides on the handle ensure that it will not roll off the workbench. D-7532 (top) is very long and intended for reaching into deep cabinetwork (such as bureaus, or other case pieces) or perhaps into window and sash work.

Dimensions: D-7546: 5 5/16" long
D-7532: 22 1/8" long

Photo No.: 79-451

VENEERING HAMMER

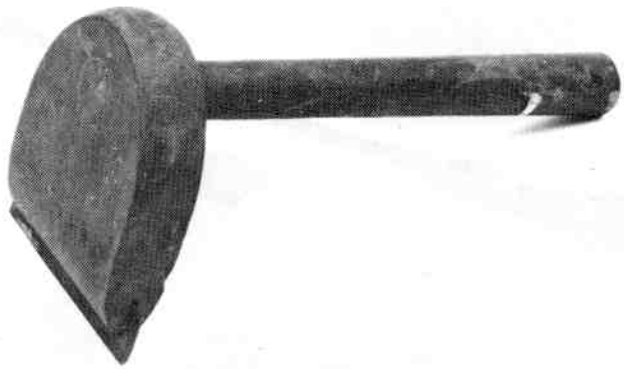


Plate 70. Veneering Hammer
D-7569

This hammer was used to bear down hard on veneer, pressing out unnecessary glue. It was not held like a striking hammer, but rather gripped close to or actually by the head with both hands. The handle could be used to tap the veneer to check for hollow spots where air had been trapped. The veneering hammer, the glueing equipment (see plate 59), and a number of clamps were the basic equipment needed to veneer a surface. This hammer is marked "G.P. Newberry", probably the name of a previous owner.
Dimensions: 11 3/8" long; head: 4 3/16" wide x 4 3/8" high x 1¼" thick
Photo No.: 79-452

VISES

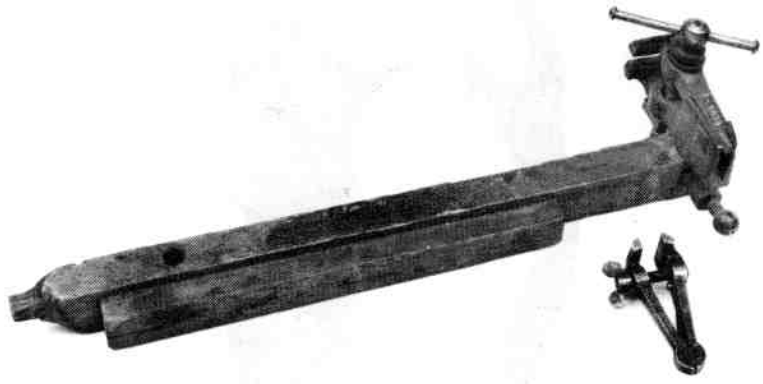


Plate 71. Vises
D-8038, D-7817

D-7817 (bottom) is a hand vise of what Spons (Spons Mechanic's Own Book, 3rd edition. New York: 1889.) calls the "old fashioned" form; it was generally used to hold small articles in the act of filing. It could be used together with the large vise, D-8038, i.e. while the latter held some wood firm, the former, held in the hand of the worker, pressed the object against the wood and the object could be worked on with the man's free hand. The large vise illustrated has been attached to a shaft which can be placed in the wood vice on the workbench and held firm there. It is of a type almost identical to that illustrated by C.P. Hummel (op. cit. p. 204). Hummel dates his example to 1700-1830. Being a relatively expensive piece of equipment, even an older vise might still have been used by Jones, in preference to buying a new one.

Dimensions: D-8038: jaws: 2 3/8" wide; vise screw: 6 1/8" long
overall length plus base: 24"
D-7817: 4½" long

Photo No.: 79-453

WRENCH & SPANNER

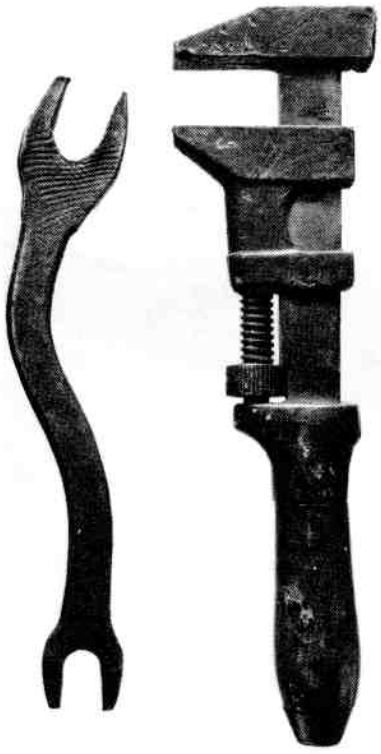


Plate 72. Wrench and Spanner
D-7808, D-7809

D-7808 (left) is an S-shaped spanner made out of a heavy file or rasp (possibly a horse rasp, see above, plate 24). It is open at both ends. D-7809 is a pipe wrench, very similar to a tool advertised as "Coe's Wrench" in the T.B. Rayl catalogue of the 1880's. Both these tools loosened nuts and bolt heads; the latter however is adjustable to different sizes of nut or bolt.

Dimensions: D-7808: $8\frac{3}{4}$" long
D-7809: 10 1/8" long

Photo No.: 79-454

THE HAND TOOLS

Assembling and Furniture Hardware

CASTERS

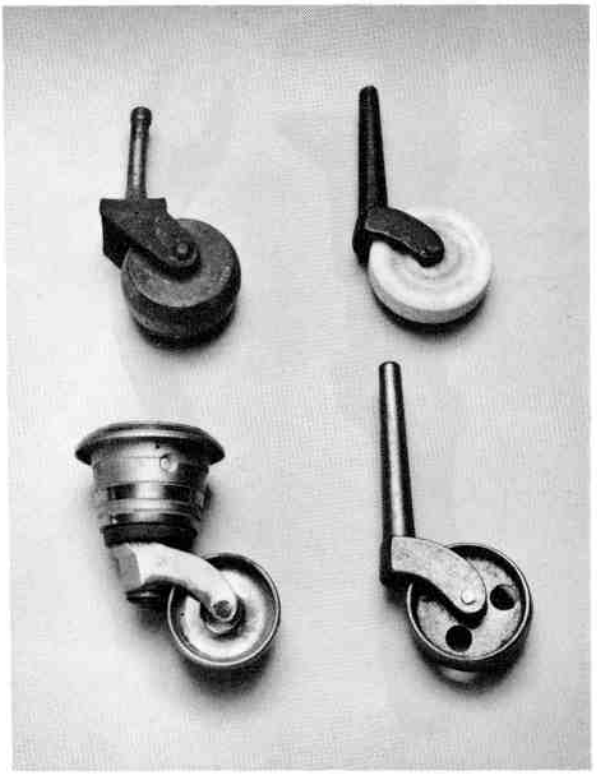


Plate 73. Casters
D-8113 i-iii, D-8106

Casters for furniture legs appeared in a variety of sizes and materials. Wood, porcelain, (both top) and cast iron were the most common. Also illustrated is a brass cup (or socket) caster of a type seen on late Empire pieces and a cast iron caster coated with a coppery surface.
Dimensions: D-8113 ii, the porcelain caster: 1 5/8" diameter wheel
3 5/8" overall height

Photo No.: 79-455

HINGES & BUTTS

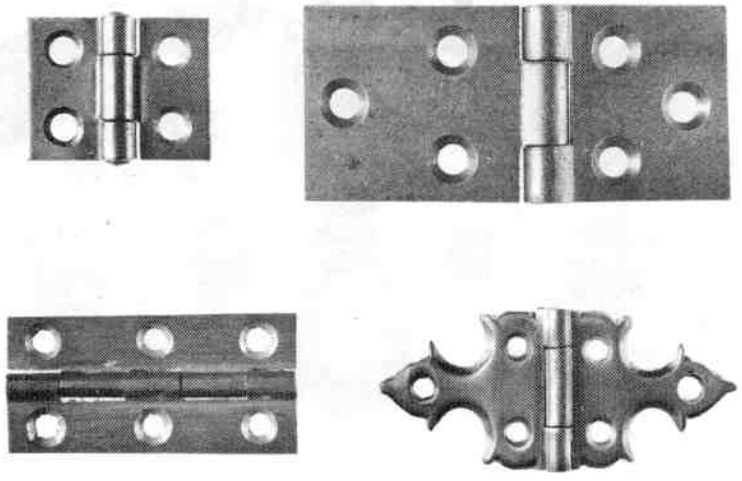


Plate 74. Hinges and Butts
D-8000, D-8006, D-8060b, D-8083a

D-8000, of steel, (top left) and D-8006, (bottom left) of brass, are both termed "narrow butts" and would have been used to hinge desk and chest tops, possibly cabinet panels or similar items. D-8060b (top right) is a table hinge; the label on its box lists the manufacturer as "Stanley Works". The last is a coffin butt made of "superior white metal".

Dimensions: D-8060b, the table hinge: 1 3/8" wide x 3" long

Photo No.: 79-456

KNOBS & HANDLES

Plate 75. Knobs and Handles
D-7861, D-8043 i - iv, D-7957 ii, D-7957 i, D-8107a, D-8107b, item from D-8106 (box), D-8056

The knobs D-7861 and D-8043i-iv (front row) would all be made by the cabinetmaker himself. They were attached to the furniture with metal screws which either came out of them or else entered them from the furniture. Or they could be made with wooden extensions which would be threaded. D-8043iv (front row, second from right) illustrates two knobs in the process of being turned. The shaft between them would later be cut and threaded.

The last six handles (back row) are all machine produced. Porcelain knobs like D-7957ii (far left) became very common after production of them was started in the States c. 1850. The small brass knob next to it was usually used as a drawer pull. D-8107a is a simple ring-pull type of drop handle made of white metal, while D-8107b is a showy gilded and ebony one. The item from D-8106 (box) is a leafy carved wooden pull produced in large numbers by carving machines and intended to be appliquéd to drawers. D-8056 is a heavy cast iron recessed handle, painted black to avoid rust; it was intended for weighty pieces.
Dimensions: vary from 7/8" diameter (D-7957i) to 1 5/8" diameter (D-7861)
Photo No.: 79-457

LOCKS, KEYHOLE LINING, ESCUTCHEON

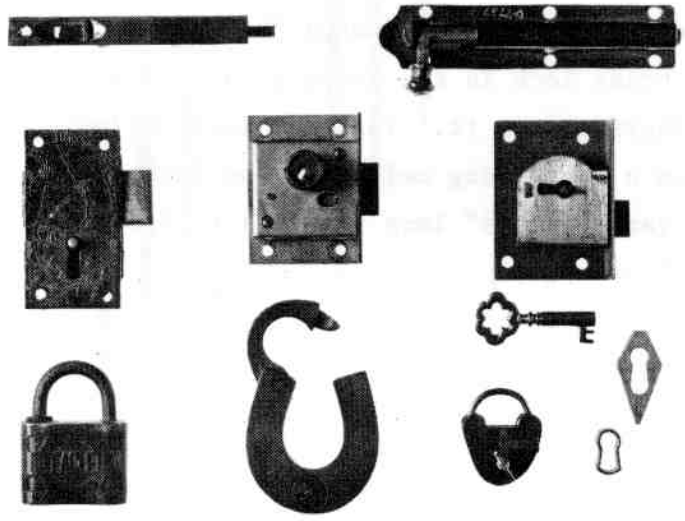


Plate 76. Locks, Keyhole Lining, Escutcheon

top row: D-7788c
D-7737

middle row: D-7757
D-8019
D-8002

bottom row: D-8027
D-8020
D-7951i
D-8080
D-7951ii

D-7788c (top left) is a brass and iron cabinet bolt; attached to the top or bottom corner of a cabinet door, it could be pushed home into the frame of the piece to hold the door closed. Beside it, D-7737 is a sliding bolt lock made of cast iron and steel with a brass knob. It would have been used on doors, with its bolt sliding into a bracket on the opposite frame. D-7757, on the middle left is a cupboard lock made of black painted iron with a steel bolt. The bolt can slide either to the right or the left. The next two items (D-8019 of brass and D-8002 of iron) are tills. The former has its keyhole lining attached and the back is marked "Eagle Lock Co. Terryville, Conn. U.S.A." The latter, shown with its key below it, would have needed a keyhole lining like D-8080 (bottom, second from right) to form the lock on a drawer. Sometimes an escutcheon

would be placed round the keyhole for further decoration; illustrated is a wooden one, D-7951ii. The last three locks are padlocks. D-8027 (far left) is embossed with the word "EAGLE" while the middle one, D-8020, is a brass lock in the shape of a horseshoe with the words "GOOD LUCK" imprinted on it. The last lock, D-7951i, is a common type, usually called a charm, dog collar or box lock.

Dimensions: vary from $4\frac{1}{2}$" long (D-7737) to 7/8" long (D-8080).

Photo No.: 79-458

NAILS

Plate 77. Nails

D-8012i, ii, D-8061c, D-8012iii, D-8012iv, D-8001, D-7994, D-8097gi, gii

All the nails illustrated except for the last two were formed by the process of "cutting", i.e. of shaping or stamping the nails, usually out of iron, steel, or iron and steel plates. Beginning c. 1790 in the United States, this process generally superceded "wrought" nails which were forged by hand out of nail rods. Machine cut nails were cheaper and numbered more to the pound than hand wrought nails; they could be driven without previously boring holes to receive them as they had two parallel sides which could be placed with the grain of the wood. Further they were less liable to split the board and had better holding power. However they were somewhat brittle and could not be bent for clinching without breaking. For this latter purpose the more pliable wrought nails were still used.

The most common nail appearing in the Jones collection is the type represented by D-8061c, (third, left side group). This is a "finishing nail" and was used in many sizes in assembling cabinetwork. The other two nails in the left group, D-8012i ii, are larger but of the same general type as the finishing nail; their heads are more developed but they are still rectangular and taper on two sides to a rather flat point. The first nail in the next group, D-8012iii, is termed a "modern" nail (in H.R. Bradley Smith's Supplement to Blacksmith's

and Farrier's Tools at the Shelburne Museum -- Chronological Development of Nails, published by the Shelburne Museum at Vermont: n.d.). Like all the nails illustrated it came in many sizes; its manufacture has been dated from the 1820's to the present. The next nail, D-8012iv, is similar to the "modern" nail except that its shaft is more clearly defined as separate from the head and its head is shaped into the type known as a "rose-head" usually associated with wrought nails. The last nail in the centre group, D-8001, is another fairly common nail called a blued clout nail. It appears to have been cut from nail rod rather than from sheets of metal. Its round shaft however has been formed into a square point. The next nail, D-7994, was called a "patent brad" and seems to be a very tiny finishing nail, used on fine work. The last two nails are made from steel wire, a new process for nail making which began about the 1850's and grew till by 1892, it exceeded cut nail production in the United States. It has retained its lead till the present. The second last nail, D-8097gi has a relatively broad head which identifies it as a "common" wire nail made from the 1850's onward. D-8097gii next to it, is a wire nail with a chequered head, in production in the States from 1850-1875 "following the custom of foreign makers". Its appearance in Jones's collection suggests it may have been used in Canada longer than that. A cabinetmaker might have found its thin shaft and broad head useful in attaching the backs onto large case pieces; but its main purpose would probably have been for lathing in house construction. Together with the roofing nails and spikes in the collection (not shown) it re-inforces the possibility that Jones also did carpentry work.

Dimensions: Vary from $2\frac{3}{4}$" long for the modern nail (D-8012iii) to 5/8" long for the patent brad (D-7994).

Photo No.: 79-459

NUTS & BOLTS

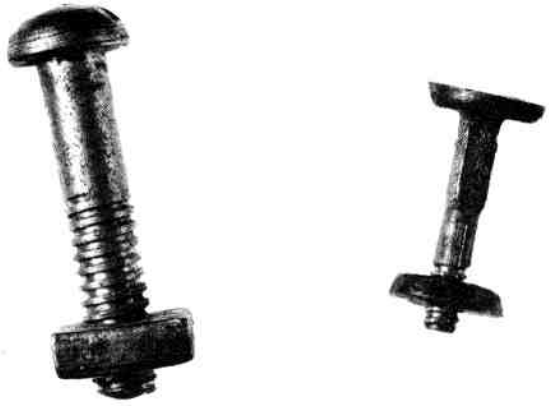


Plate 78. Nuts and Bolts
D-8091a and item from D-7951 (tool chest)
Despite being somewhat crooked, D-8091a (left) is a machine-made nut and bolt, possibly already used once and taken out for re-use. The other brass nut and bolt appears to be more crudely made, though intended for use where it could be seen, perhaps on a lock.
Dimensions: D-8091a: 1½" long
Photo No.: 79-460

SCREWS

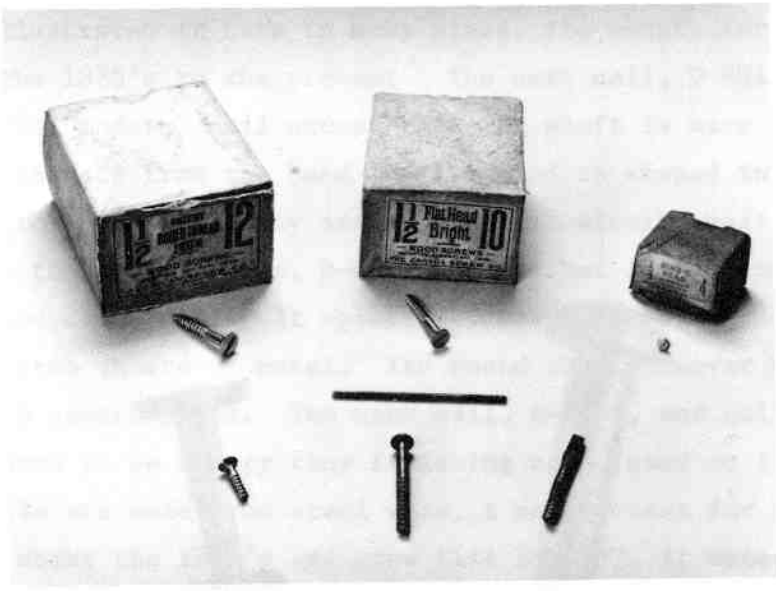


Plate 79. Screws

4 items from D-7951 (tool chest), D-7991, D-7990, D-8072

The items in the foreground and middle (all from D-7951, Jones's tool chest) are handmade screws either in the process of completion or completed. Hand made screws are identifiable by their flat ends (as compared to the gimlet points on the machine made ones behind them) and by the occasional irregularities in their thread or heads. You can see how the worker has begun to thread the end of a wrought iron rod (middle) through a screw plate, (see plate 56 above), prepatory to cutting off a length and forming a head.

The machine made screws in the background have been given a high polish to protect them against rust. Notice the similarity in the labels of the "American Screw Co." (of Providence, R.I.), D-7991, and "The Canada Screw Co" (of Dundas, Ont.) D-7990. The American company patented its rolled thread iron wood screw on May 30th, 1876, while the Canadian firm has a patent date of August 5, 1876. It is unknown to the author whether these firms were in any way connected. The last box, D-8072, contains ¼" metal screws made by the P.I. Robertson Mfg. Co. Ltd. of Milton, Ont. The thread on metal screws reaches right up to the head. They would have been used to attach metal items such as locks and hinges.

Screws are useful in that, although they connect parts more closely than nails, they may afterwards be disconnected. In cabinetmaking, they were usually concealed by having their heads countersunk and the holes plugged, possibly with dowels of the same type of wood, with the grain running in the same direction.

Dimensions: the screws from the boxes D-7990 & D-7991 are $1\frac{1}{2}$" long

Photo No.: 79-461

TACKS

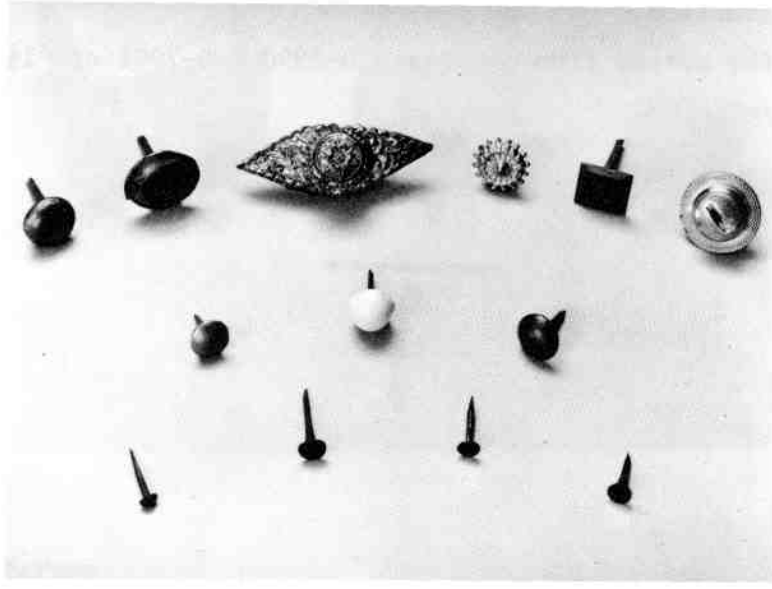


Plate 80. Tacks
D-8097e, D-8007, D-8075c, D-7999, D-8096a, D-7951i-v, D-8093, D-8096d, D-8106

D-8097e, (front row, far left), with its round head, was called a "gimp tack" and D-8007 next to it is labelled a "Swedes' Iron Cut Tack". Both tacks are cut from iron and would have been used in upholstering. The third & fourth tacks, D-8075c and D-7999 are carpet tacks; both are "blued" so as to be held in the mouth of the worker till needed, without risking rust once fastened, but D-7999 is cut and D-8075c is made from nail wire. All the other tacks illustrated are decorative tacks used in upholstery. They range in materials from porcelain through copper, brass, tin and other alloys. The brass ones in particular appear to be homemade. D-8093, (back row, far right) very large and silvery, is called a coffin "tack", although it has a threaded "screw" shaft.

Dimensions: vary from $\frac{1}{2}$" long for the carpet tack, D-7999, to 1 5/8" long for the coffin tack, D-8093, which also has a head $\frac{3}{4}$" in diameter.

Photo No.: 79-462

THE HAND TOOLS

The Workshop of the Craftsman

The workbench, set against a wall under a window for proper lighting, was the cabinetmaker's staple tool. On it he placed his work in progress, using its various design features to hold his stuff firm while his hands were free to work. Illustrated is Francis Jones's workbench which he made himself, (D-7950, plate 81). By the last half of the 19th century similar benches could easily be purchased. Its surface is 78 inches by $21\frac{1}{2}$ inches; it stands rather low, about $34\frac{1}{2}$ inches from the ground. This was probably to allow Jones to bend over it, applying the pressure of his arms and shoulders to the work, should that be necessary. Attached to it are two bench vises, one on the long front side, one on the short end at the right. The front vise worked together with the perforated board which was set into runners between the front legs of the bench. The vise would hold a board or other object while it was being worked on, and a peg thrust through any convenient hole in the sliding perforated panel would hold up the other end and keep the work from moving. On earlier benches, these holes for pegs or stops were sometimes made in the bench legs themselves. Jones's bench has an additional sliding block of wood just under the bench surface with room for three additional pegs. Along the left edge of the bench was a "bench stop" (not visible). This could be pushed up from the surface of the bench, where it usually rested when not in use, and its square toothed head, acting somewhat like a claw, would hold the board flat and still during planing. The "bench holdfast" (D-7510) inserted in the top of the bench, plate 81, was shaped like a large iron hook and it too could be used to hold a board still. Its shaft, 15 3/8" long, fitted into a hole in the surface of the workbench and its arm gripped the board. Occasionally other holes appear along the sides of the workbench; these were to accept tools temporarily not in use. Now and then the space between the legs of the bench would receive a flat board to be used as tool storage space; or drawers would be built below the surface of the bench.

Tool storage was, of course, an important consideration for a cabinetmaker who hoped to keep his tools usable for many years, perhaps for his entire lifetime. He would make special tool racks or containers for them such as those illustrated in plate 82. But the most common method of keeping hand tools was in a chest or cabinet. Jones had what was apparently a travelling chest converted into a tool chest (see

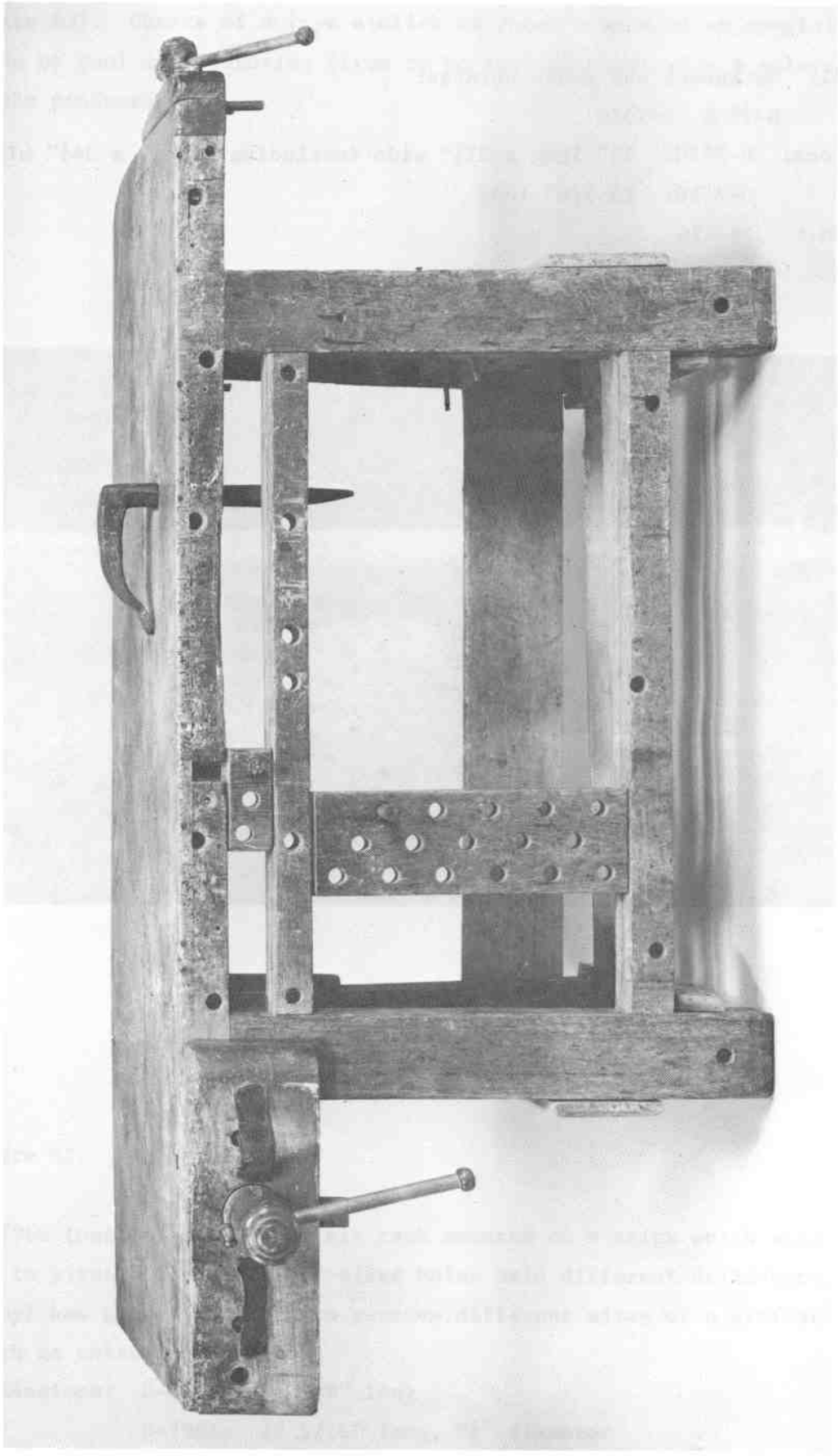


Plate 81. Workbench and Bench Holdfast, see p. 110.

Plate 81. Workbench and Bench Holdfast
D-7950, D-7510

Dimensions: D-7950: 78" long x $21\frac{1}{2}$" wide (excluding vises) x $34\frac{1}{2}$" high
D-7510: 15 3/8" long

Photo No.: 79-479

plate 83). Chests of a type similar to Jones's were often specially made by tool manufacturing firms to be sold together with a selection of their products.

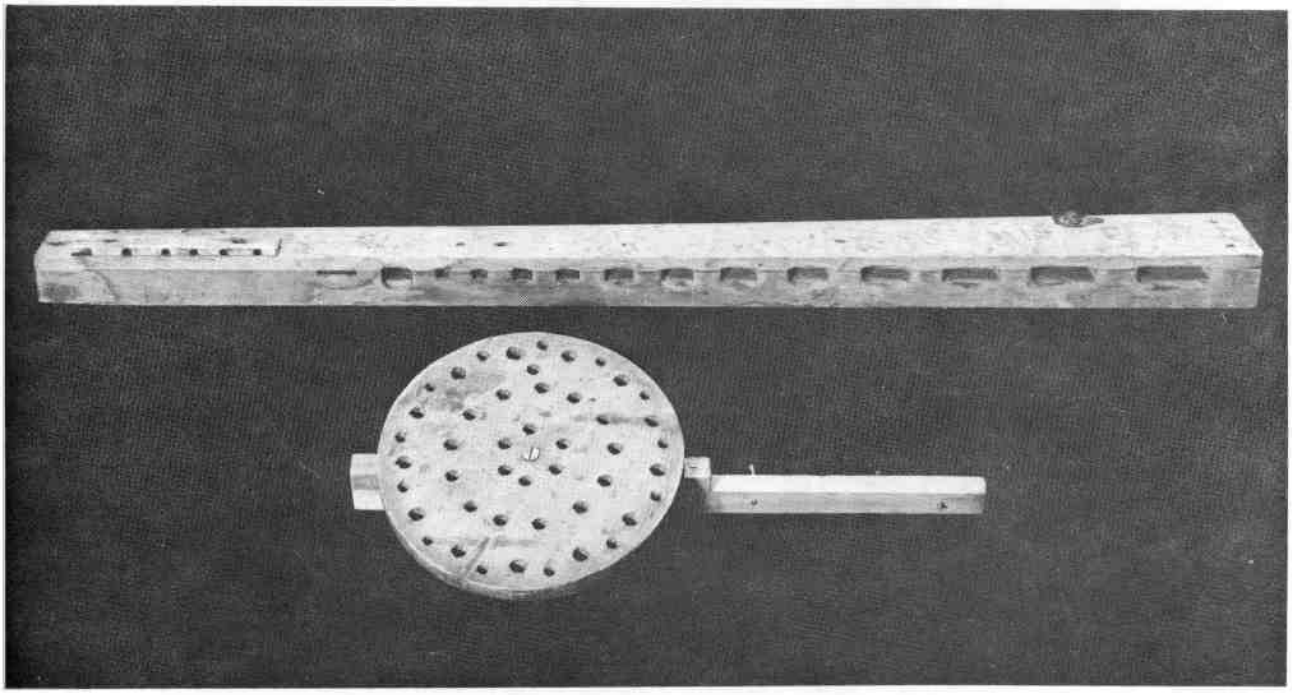


Plate 82. Tool Racks
D-8030, D-7966

D-7966 (bottom) is a drill bit rack mounted on a stick which will allow it to pivot. The different-sized holes held different drill bits. D-8030 (top) has graduated slots to receive different sizes of a similar tool, such as chisels or gouges.

Dimensions: D-8030: 36 5/8" long
D-7966: 17 5/16" long, 8¼" diameter

Photo No.: 79-463

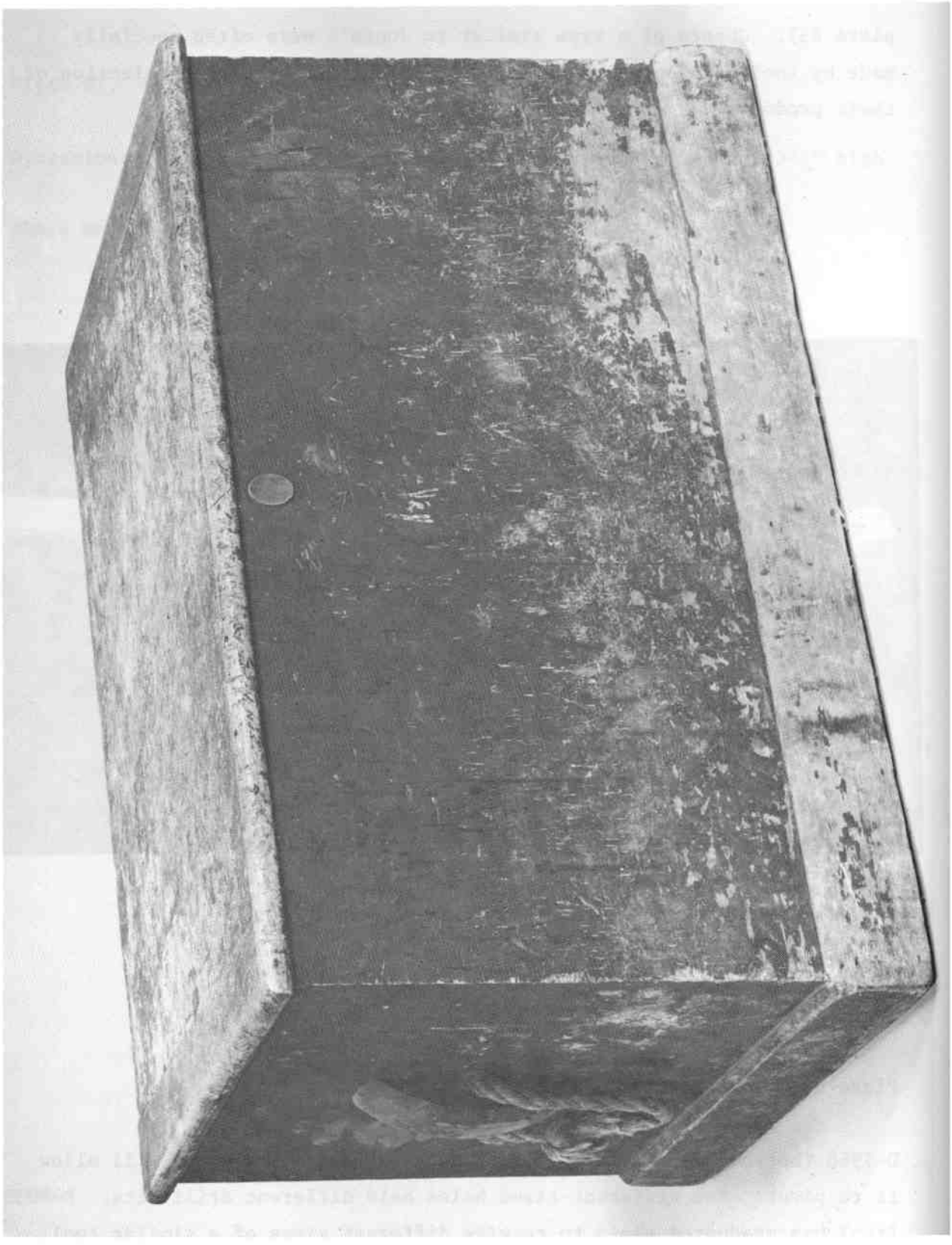


Plate 83. Chest, coverted into Tool Chest, see p.113.

Plate 83. Chest, converted into Tool Chest

D-7951

The dark painted exterior with its heavy base is very battered and pitted; the sides are made of single planks, dovetailed, but the bottom is made of three boards, as is the top. The centre board on top is flanked by wood with the grain set at right angles to it so as to avoid warping. The interior is stained a reddish colour and fitted with a moveable bank of 12 drawers, one of which is false. These drawers appear to have been a later addition, perhaps themselves borrowed from another piece, as they are finely veneered in dark red wood and fitted with small brass pulls. They have been used as storage space for nails, screws and small loose tools. The rest of the chest must have held saws, planes and other cabinetmaking equipment.

Dimensions: at base: 41 3/8" x 23 3/8"; 23½" high

Photo No.: 79-464

A most elaborate example of a company's pre-selected tool set is provided by D-4819 (plate 84) which is a substantial veneered cabinet, its interior lined with numerous drawers and shelves containing a wide selection of certain standard cabinetmaker's tools.

Plate 84. Tool Cabinet
D-4819
Dimensions: at top: 51 1/8" x 13 7/8"; 51 1/8" high
Photo No.: S79-2556

This piece was acquired by the National Museum of Man in 1963 from a descendent of the original owner. Most of the tools are stamped with the name of the manufacturer: "T. Mackenzie, No. 3 Loveday St., Birm^{m} (Birmingham)". They are further stamped with "A. Sorrill", the name of the owner. A few of the tools originally belonged to other craftsmen, and hence bear other name stamps as well. Almost all the tools are in exemplary condition which would suggest that they were not used a great deal. The illustration shows some of the saws, planes and other tools which the cabinet contains. Not illustrated however are the fine almost entirely brass-plated planes which the cabinet also contains. This magnificent set is of a very late period, dating possibly to the last years of the Mackenzie firm which operated from 1863 to 1894. It appears to be a rather luxurious example of a type whose more plebian form is shown in the 1889 advertisement for Thos. J. Syer & Co. on plate 85. That company lists their set as being "the most complete tool chest made. Contains a full set for either mechanic or amateur. Everything in its place and ready. Can be made perfectly air-tight for colonial use." The last phrase would indicate that this English-made item was available for export.

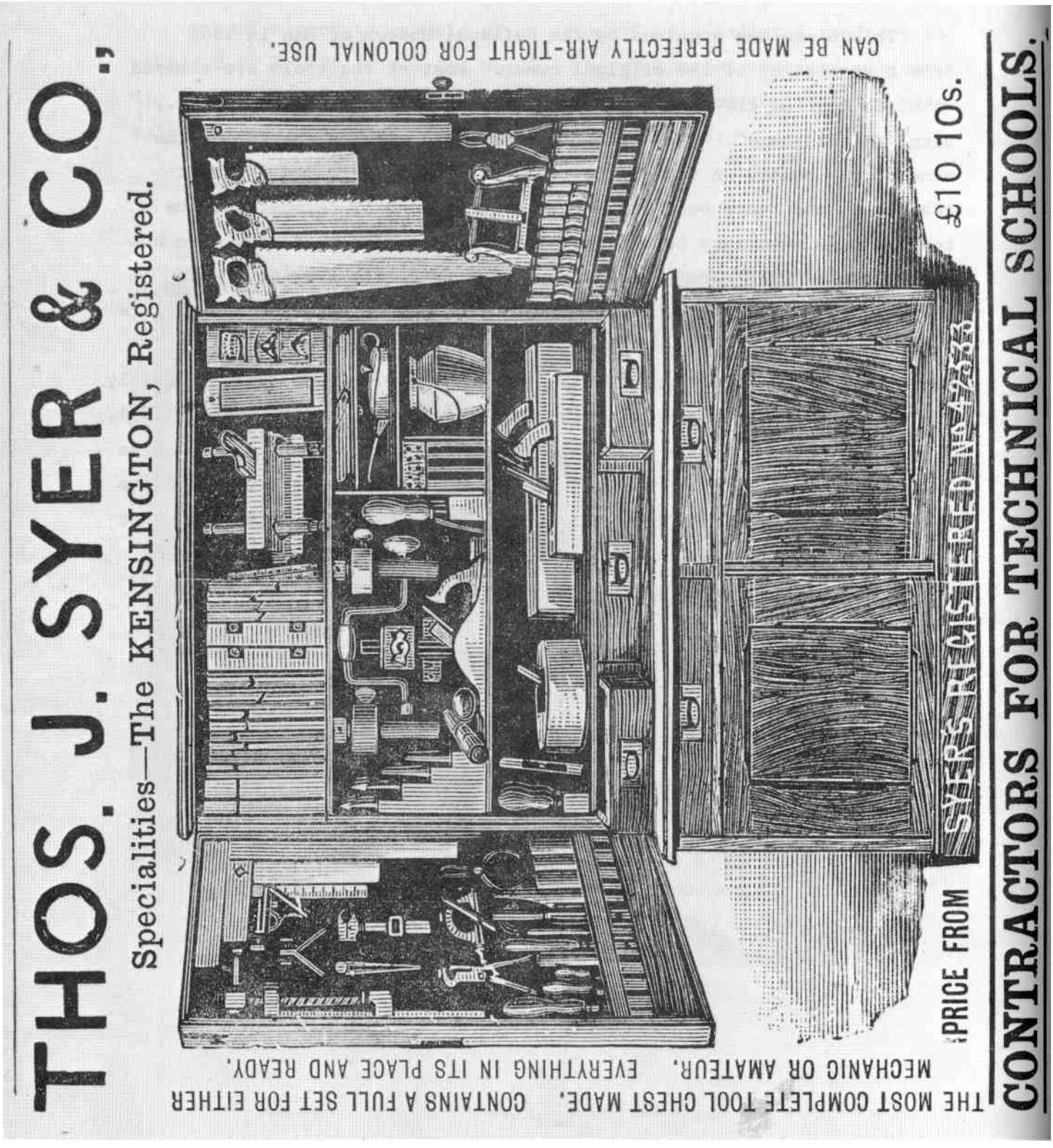


Plate 85. Advertisement for a Tool Cabinet by Thos. J. Syer & Co. from Spons' Mechanics' Own Book, 3rd edition, published by E. & F.N. Spon, London and New York, 1889. Page 8 under "Advertisements".

Photo No.: 76-2592

Further to preserving his tools in good condition, the cabinetmaker used certain maintenance tools. A large grinding wheel would have been needed for heavy edge tools such as axes or large chisels. The smaller maintenance tools encompassed saw files, saw sets, honing stones and so forth. Examples of these are shown on plates 86, 87, and 88.

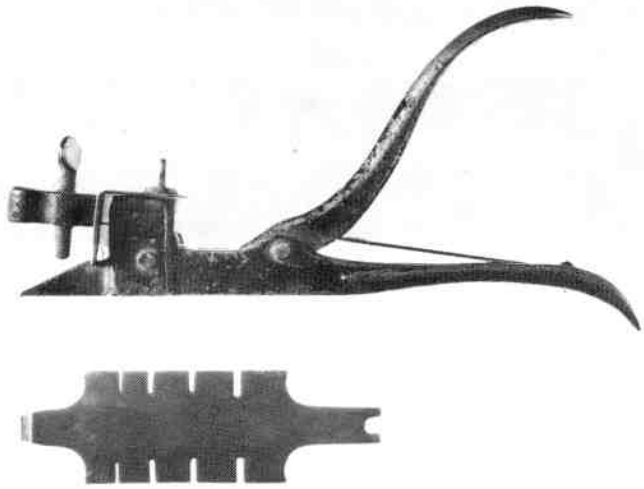


Plate 86. Saw Sets

D-7581, D-7583

Both of these tools were intended to set the angle of saw teeth. D-7583 (bottom) is the earlier type, called a "plate saw set" or "steel saw set"; it has "turnscrew" or screwdriver ends and may be used to tighten screws as well as set saw teeth. D-7581 (top) is apparently identical to a saw set illustrated on p. 11 of T.B. Rayl & Co.'s 1880's catalogue and described as "Leach's Saw Set".

Dimensions: D-7581: 7 1/16" long

D-7583: 4 3/8" long

Photo No.: 79-465

Plate 87. Honing Stones and Steel
D-7822, D-7823, D-7779

Honing stones or whetstones came in a variety of sizes and qualities depending on the fineness of the object to be sharpened. D-7822 (top) was known as an "oil-stone" as it was used together with a drop or two of oil on its surface when fine honing a blade such as that of a chisel or gouge. It was usually kept in a case to protect its surface from dust. D-7823 (middle) was called a "desk stone"; presumably it was meant to be held in the hand against the object while fine honing. The bottom item, D-7779, is a corrugated steel against which to sharpen knives; it was also known as a "striking knife".

Dimensions: D-7822: 10 1/8" long with case
D-7823: 7 9/16" long with handle
D-7779: 10 5/8" long

Photo No.: 79-466

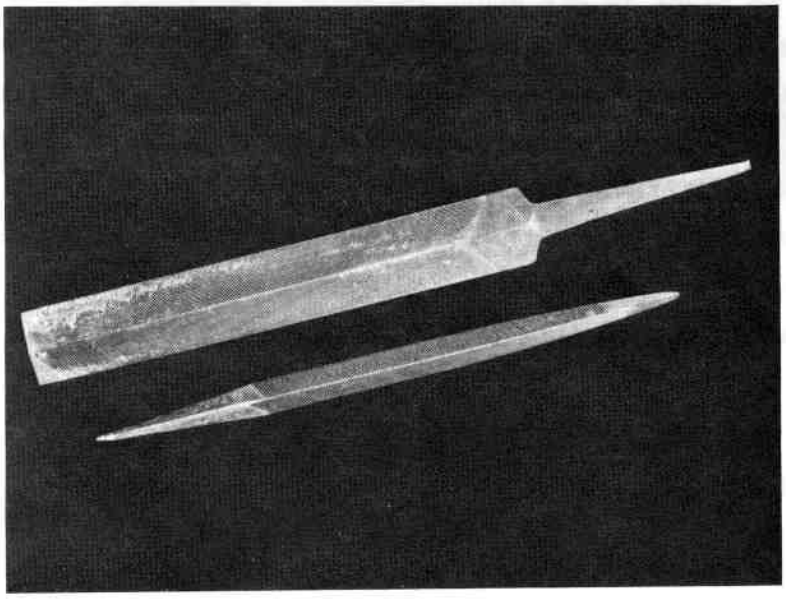


Plate 88. Saw Files
D-7322, D-7985

Such triangular or 4-sided files were used basically for sharpening saw teeth. However their fine quality steel also served as material from which to make other tools, such as the blades in screw boxes, etc. D-7322 (top) is marked "T. JOWITT", while the other, D-7985, is marked "Black Diamond, Made in Canada".

Dimensions: D-7322: $5\frac{3}{4}$" long
D-7985: 7 1/8" long

Photo No.: 79-467

A complete description of Jones's workshop can not pass over a number of intriguing remnants in the collection which, taken together, would suggest that Francis Jones, perhaps later in his career, operated a number of machines in his shop. Certainly he would always have had a wood lathe, powered possibly by a great wheel or by foot, as is corroborated by the extant spur centres, chucks and lathe rests shown on plate 89 as well as the turning chisels and gouges on plate 21. However, in addition, D-7979 (plate 89) is possibly the chuck from a metal-working lathe; it shows burn marks where the metal would have been turned. Such a small lathe could have turned out parts for furniture handles or similar small metalwork.

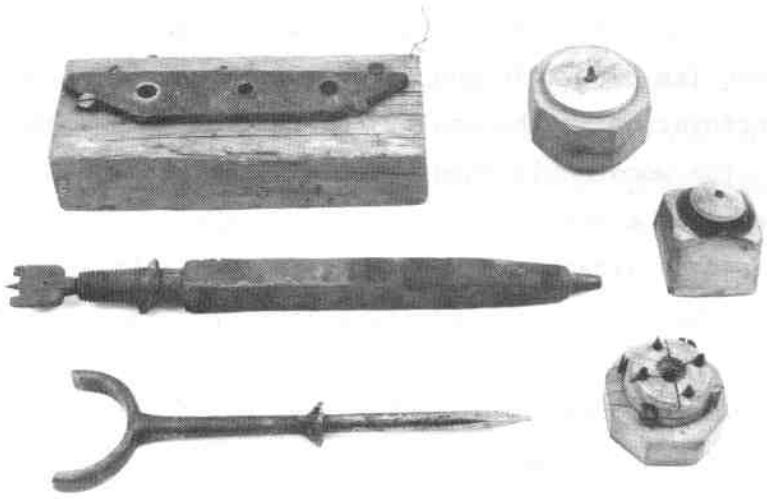


Plate 89. Remnants of a Wood Lathe, including one Chuck possibly from a Metal-working Lathe
D-7891, D-7974, D-7892, D-7979, D-7833, D-7880

These items are respectively, a lathe rest, D-7891, (top left), for the chisels & gouges during operation, a chuck, D-7974, for fixing objects to the lathe, and a spur centre with axle, D-7892, also for fixing objects to the lathe. The chuck next to it, D-7979, is possibly from a metal-working lathe as it seems to have burn marks. In the bottom row is a support, D-7833, possibly for supporting the free end of an object when only one end is fixed to the lathe, and another chuck, D-7880.

Dimensions: D-7891: 8½" long
D-7974: 3 1/8" diameter
D-7892: 13 3/8" total length
D-7979: 2 1/8" wide
D-7833: 9 13/16" long
D-7880: 2 3/8" diameter

Photo No.: 79-468

Other machines are suggested by D-7888, D-7883 and D-7895 (plate 90) The first (top) is a circular saw attached to an axle and a pulley; the last two are a dado attachment and a grinding wheel. The circular saw would have had its own table and stand, with the tip of the saw coming through a perforation in the table, the rest of the machine being placed underneath. The wood could then be slid along the table, perhaps while being held against a fence, and then cut by the blade. Both the grinding wheel and the dado attachment might have fitted into a similar set up. The dado is formed by a circular saw blade which is fitted at an angle onto a wood block chuck. As it turns in operation, it cuts, not a straight line as the regular circular saw, but a straight groove in the wood (cf. the dado plane above). The width of the groove is determined by the size of the angle at which the blade is set.

Plate 90. Circular Saw, Dado Attachment, Grinding Wheel
D-7888, D-7895, D-7883

Dimensions: D-7888: 7 1/16" is the diameter of the blade; 19 1/8" is the total length
D-7895: 4 5/8" diameter of blade
D-7883: 4½" diameter

Photo No.: 79-469

Other possible machines in Jones's shop are a milling machine and a planing machine to plane down rough lumber. The possibility of the milling machine is raised by the existence of a small homemade bed suitable for such a tool (plate 91). The bed slides onto a bench where it is held fast. The machine body fits into the space cut out for it; the mill-heads operate just above the semi-circular groove in the bed which receives the wood shavings. The fence was originally adjustable with wood screws, but was later made firm in the one position. The small holes in the bed are to receive set screws which would aid in holding the wood firm against the fence. Such a bed is useful for processing a lot of wood in an identical manner, the stock held against the fence and piloted through. A number of different blades could be used separately or together to produce multiple grooves, mouldings, etc. in the wood. In 1889, Spons (op. cit. p. 35) describes something similar as a "moulding board". The mill-heads could also be grinders or sanders; and the bed could be angled to cut a bevel if desired.

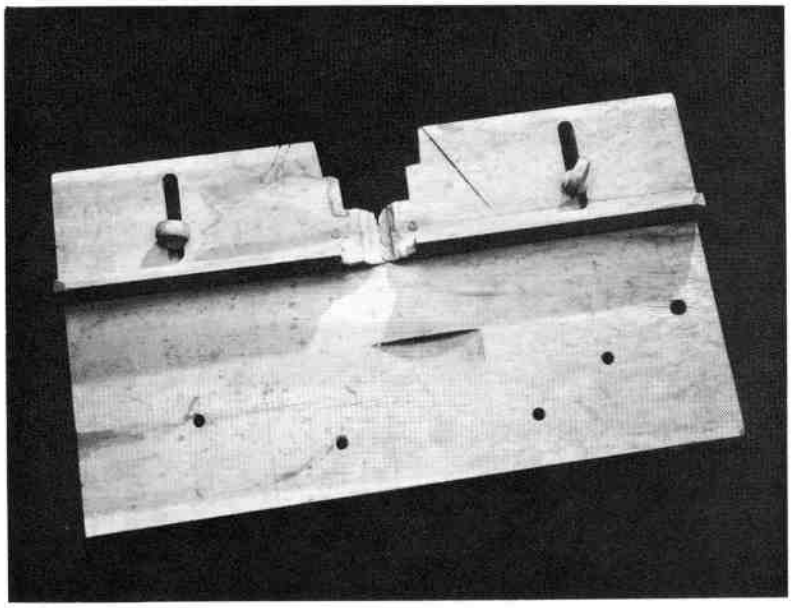


Plate 91. Bed for a Milling Machine
D-8044
Dimensions: 25 3/16" long x 14 1/8" wide
Photo No.: 79-470

The evidence for the planing machine is the presence of a very wide (17" x 1 5/8") planer iron among the tools (plate 92, D-7589). It would have been mounted in a large machine and would probably have needed a non-human power source. The possibility of such a source running at least some of these machines is re-inforced by D-7890 and D-7893. The first (middle, plate 92) is a "shaft hanger" or "bearing" which would have been suspended from the roof of the shop holding the rotating line shaft steady; the second (top, plate 92) would have been a "fast pulley" held firm to the line shaft. It has a square hole, suggesting it was fixed (or made "fast") to the shaft which may have been forged square at that point. It was through such pulleys, linked to machines on the ground by belting, that the power was transmitted from the line shaft to the machine.

Plate 92. Pulley, Shaft Hanger, Planer Iron
D-7893, D-7890, D-7589

Dimensions: D-7893: 7 1/8" diameter
D-7890: $12\frac{3}{4}$" long
D-7589: 17" x 1 5/8"

Photo No.: 79-471

If, however, we suggest a power source other than the human one for Jones's shop, we are bound to suggest where this may have come from. There was no water within a convenient distance to the location of his shop in Ireland, which leaves steam or electric power. The latter is highly unlikely as electrical motors were only beginning to be used in furniture factories about 1910-15 and it is improbable indeed for Jones to have used one. Yet the objection to steam is that Jones's grandson, who once visited the deserted shop as a young boy and who disposed of the contents later in life, maintains that all power in the shop came from human hands and feet and that there was no steam or water power used at all. According to his recollection, the wood lathe was run by a great wheel. Without further research, the matter of machinery in Jones's workshop remains a mystery. The question however does open the way to further discussion of the relationship between the craftsman and the machine which will be taken up later.

4. THE TRANSITIONAL PERIOD AND THE FACTORY SYSTEM

The Transitional Period

The last half of the nineteenth century in Canada may be termed the "transitional" period when furniture making began to change from hand craft to factory production. The general introduction of the circular saw for cutting lumber after c. 1840 seems to mark the beginning of an accelerated rate of invention for many different kinds of woodworking machinery. G.W. Yapp (Art Industry: Furniture, Upholstery, and House Decoration, etc. London: 1879.) made the point that the wood building requirements of the Great Exhibition of 1851 in London, England, inspired the creation of a number of machines with specific jobs related to building Paxton's Crystal Palace. Born out of necessity, these machines proved the viability of producing much previously hand made joinery, such as stair rails, sashes, doors, etc., by mechanical means. Thereafter (and particularly in North America) the woodworking and furniture producing industries increased their use of existing specialized machines and invented new ones to produce their work speedily, with greater accuracy and at a cheaper cost than simple hand labour could accomplish. The rapid progress of this trend is revealed in an article which appears in a Toronto newspaper, THE GLOBE. In the issue for August 25, 1855, on page 2, we can read the following detailed description of the Canadian entries to the Paris Exposition:

> The tonguing and grooving machine, for flooring, is not excelled by any in the Exhibition. There is one also for planing thin as well as thick timber.... A morticing (sic) machine, said to be on a new principle, is one of the most complete and useful machines yet adopted for this work. There is a cabinet or joiner's table 12 feet long by 8 feet wide, on which is a tenor (sic), planing six different moulding and grooving machines. If it

> performs one half of what it is said to do, it must be a most valuable machine. Circle saws and sweep saws are also shown. A very fine self-acting turning lathe, lighter and more compact than those generally used; .... Tools in great variety for cutting, polishing, and manufacturing of woods, in number and quality they are not equalled in the Exhibition, both as regards adaptation and workmanship. The tools of local manufacture are superior to those from Sheffield. The latter in Canada and the United States being generally complained of.

Keeping pace with this development, the furniture factory became a common sight in many small and large southern Ontario towns where lumber was a plentiful commodity. A concentration occurred in the counties of Oxford, Perth, Waterloo, Huron, Bruce and Grey. Places like Kitchener (originally Berlin), Hanover, Napanee (plate 93) and Ottawa all had their own firms, some still in operation. Toronto had the biggest factory of all: the Jacques and Hay firm which operated from 1835 to 1870 and already employed over 90 men in 1851. That number grew to 400 by 1866. An exact history of all these firms has not yet been written, but clearly they produced a large part of the furniture of the period which is still extant today, and they exported it around the country wherever the railroad could reach. Plate 94 for example is an advertisement for the Toronto firm showing their expansion right into the market which Francis Jones would have served. Indeed such expansion was necessary for a firm which, as reported in the Toronto Globe in January 1851, produced 75,000 chairs and 10,000 bedsteads in one year.

How would these factories, often located in the same rural areas as the independent cabinetmaker like Francis Jones, have impinged on his trade? On the tools and methods of his craft? On the style of his furniture?

Plate 93. Exterior, J. Gibbard & Son Manufactory and Ware Rooms, Napanee, Ont. Photo courtesy of the Gibbard Furniture Shops Ltd., Napanee, Ont.

First, in glancing further through some of the newspaper advertisements for rural Ontario, particularly for the area around London, we discover that the phrase "machine made" had a desirable cachet to the clientèle of the later 19th century. It meant progressive methods, exactness and modern style at low prices. (In this connection we may note that men at the highest social and economic level of Canadian society -- men like Chief Justice John Beverly Robinson and James Austin, founder of the Dominion Bank - bought furniture from Jacques and Hay. Furthermore the firm was commissioned to produce all the furniture used by the Prince of Wales on his Canadian visit in 1860). As the advertisement for George Moorhead (Plate 95) makes clear, the manufacturer started with a small shop and proudly developed it into something similar to a factory, a selling point for his products.

The availability of machines to mechanize and expand such a small cabinet shop where power came originally from hands or feet seems to have been extensive. Tool catalogues such as Wilkinson's (The John Wilkinson Co., Chicago, Illinois. Price List of Tools and Machines for Metal and Wood Workers.) of the late 1880's offer a number of foot-powered machines, some convertible to belt and pulleys, all intended perhaps more for the use of the single cabinetmaker than the employee in a factory. This is borne out by the illustration from the back of Wilkinson's book (a detail of that illustration is shown on Plate 96) which includes, among the scroll saws, circular saw, combination saw, hand mortiser and wood and metal lathe, two tiny cuts of a woodworker in his shop, surrounded by his tools, tool chest and workbench.

NEW FURNITURE ROOM.

Opposite the City Hall Richmond Street,

JACQUES & HAY.

RESPECTFULLY beg to inform the inhabitants of London, and surrounding country, that they have opened in the above premises, under the management of John Beattie, the Largest Assortment of new Furniture, ever offered in London. Which they will sell for cash at the lowest possible price, which they will warrant good, and of the best Material Manufactured.

This stock consists in part of Sofas, Lounges Chairs, Tables, Bureaus, Bedsteads, Mattrasses, Pillows, Looking-Glasses, Washstands, &c., &c.

Save your money and call before purchasing elsewhere.

London, March 19, 1858. n2-1m.

Plate 94. Advertisement for Jacques & Hay, a furniture factory of Toronto, from a London, Ontario newspaper: The Journal of Industry, April 3, 1858. Photo courtesy of the Public Archives, Ottawa.

Plate 95. Advertisement for George Moorhead, owner of a "Furniture Manufactory", from a London, Ontario newspaper: The Daily Prototype, November 17, 1868.

Photo courtesy of the Public Archives, Ottawa

Like the hand tools machines too may have been imported into Canada from the United States. An example of a scroll saw, used to do the intricate flat scroll cutting which often decorated, for example, Victorian brackets and gallery boards, is illustrated on the left in Plate 97 (D-3296). It is all cast iron, operated by a foot pedal and embossed with "TRUMP BROS. WILMINGTON DEL. U.S. PAT'D JULY 23.72 (1872) REISSUE NO. 6.77 (1877)." A cruder model, possibly of home construction is shown beside it (D-1563). Machines such as these, whether imported or homemade, along with those already mentioned relating to Jones, probably complemented the hand tools in the independent craftsman's shop. So the use of machinery in his work was something towards which the hand craftsman tended to aspire as easing his work and as increasing both his trade and his prestige.

But do we call his work "hand made" or "machine made"? The criterion for "hand made" work of a craftsman working in his shop, forming the object from start to finish, begins to seem questionable when we learn that, like Jones, he may have possessed a planer, a circular saw, a milling machine and a metal working lathe as well as the familiar wood lathe. The 19th century cabinetmaker's own attitude toward this distinction between a "machine made" and a "hand made" product (upon which today's value judgements often seem to be based) is revealed as even more equivocal when we realize that certainly Jones had nothing against selling factory-made pieces in his own shop. Among the documentation related to him have survived five itemized bills from Jacques and Hay of Toronto listing, among other things, 3 "sofas in hair cloth", 25 "painted woodseat Diners", 2 "Round Table Chairs", 3 "Round Child's Low ditto", 3 "Common Bostons",

PRIZE HOLLY SAW. For description and price, see page 1.

Plate 96. Detail of the Back Cover of the Tool Catalogue of John Wilkinson Co., Chicago, Illinois; entitled: Price List of Tools and Machines for Metal and Wood Workers; published in the 1880's.

Photo No.: 76-2587

Plate 97. Scroll Saws, see p.135.

Plate 97. Scroll Saws

D-3296, D-1563

Dimensions: D-3296: 40½" high

D-1563: 35¾" high

Photo No.: 79-472

3 "B & T (sic) Bedsteads", 2 "Common Full Size Couches in Union Damask", 6 "Caned top loose seat Chairs", and 6 "shaped back carved loose seat Chairs" as items shipped to Jones over the period Nov. 15, 1870 to March 5, 1871. Presumably he sold them through his shop, allowing his name, at least as a dealer, to be associated with them. This complicates not only the presumed status of differently made furniture but also the question of Jones's own skills. Cabinetmaking for example was often divided up as a profession into "case making" and "chair making". Did Jones specialize in case work (we are reminded that the extant measuring rods, Plate 8, refer only to case work) while importing chairs and sofas from a large factory for his customers? It seems likely.

THE TRANSITIONAL PERIOD AND THE FACTORY SYSTEM

The Factory System

But no matter how mechanized the craftsman/merchant became, in response to his clientèle's or his own desires, or in response to competition from factories, it is still true that the methods and techniques of the factory, resulting in a large, cheap output, militated against the continued existence of independent shops. By the end of the 19th century a large percentage of the furniture sold in Ontario came from a factory. The methods and techniques of that mass-production may be described as follows:

The power for the factory would be provided by mechanical drive with line shafting, most probably run on steam. Earlier, water power may have been possible; but electrical motorization did not take place till c. 1910-15. All the machines would be attached to the main shaft by belting and pulleys.

After the turn of the century, perhaps earlier, factory-ready furniture designs were often imported from the United States. The design would move from a small-scale drawing to a full-sized one, showing proportions and complete constructional details. The hand craftsman, with the possible aid of pattern books, had done all this designing, drawing and figuring associated with producing a piece of furniture himself. Jones was known to have made his full-size sketches on pieces of newspaper. In addition, one of his sketchbooks has survived (Plate 110).

The factory would then make a sample piece to check design and cutting problems and to allow estimates of materials, fittings,

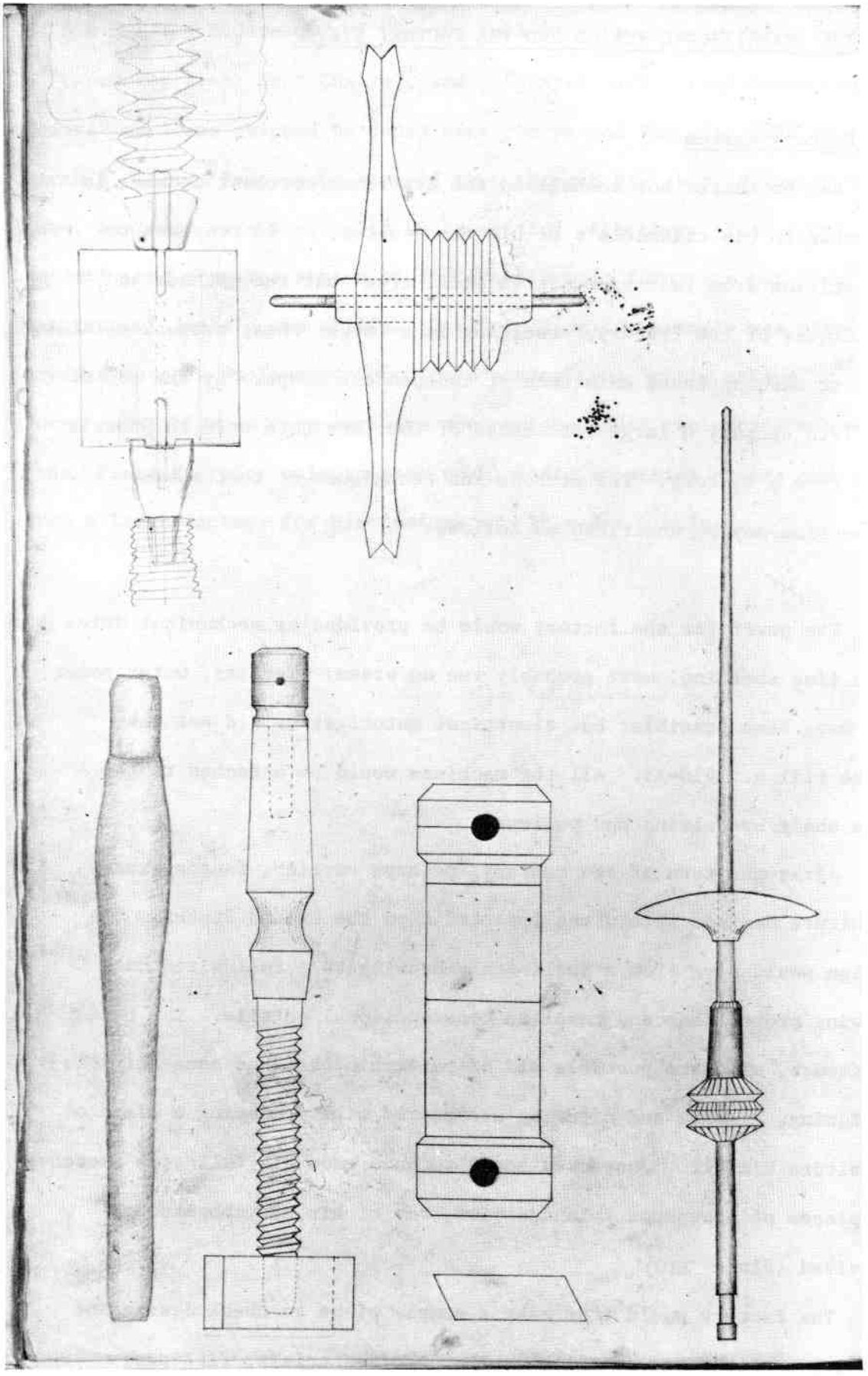


Plate 110. Page from Francis Jones' sketchbook.

Photo No.: 77-156

finish, machining and assembly times to be worked out. Then the design was sent to the plant where wooden patterns or models for the separate parts would be made and production in quantity begun. The hand craftsman too could use such models; Jones however also used "measuring rods" (see plate 8), a tool which F.E. Ransom (The City Built on Wood, A History of the Furniture Industry in Grand Rapids, Michigan, 1850-1950. Ann Arbor, Mich.: 1955.) claims was not introduced into Grand Rapids, Michigan, factories till the 1920's. Its presence in the Jones collection suggests that it existed and may have been well-known much earlier than that, at least in the independent cabinetmaker's shop.

Once a factory design was settled on, the lumber was sent to the machine shop where various primary planing and cutting operations were performed on it to create each standardized part. Yapp (op. cit. p. 13) writing in 1879, mentions:

> At the present moment almost every operation in woodwork, from the sawing up of the tree to the cutting of dovetails for the finest cabinetwork, is performed by means of machinery...and this has naturally given rise to the establishment of many large works where the elements of the carpenter's, joiner's and cabinetmaker's work are prepared and sold; as, for instance, flooring boards...all ready to be laid down...even doors, windows, partitions and wainscoting all ready for fixing.

Hence, if we recall as well the description of the Canadian machines at the Paris Exposition of 1855 (p. 125), it is clear that both varied machinery and the value of standardized parts were well-known by the second half of the 19th century. Among the wood-working machines that Yapp discusses are: the circular saw, the band or ribbon saw, the borer, the mortiser, the corner saw, the shaping machine, the scoring machine, the "original general joiner" (which could be used for ripping out,

mortising, tenoning, and grooving), the dovetailing machine, the moulding machine, the lathe, the double spoke or copying lathe, and the "all in one" machine, which, like the "general joiner" was a combination machine, being mortiser, moulder and tenoner all in one.

From this solid basis machining only became more specialized, accurate and refined, but not basically different in the types of operations performed -- planing, cutting, turning, forming joints and mouldings, rebating, grooving, sanding, even carving and decorative sawing. Spindle carving machines with more than one spindle were a relatively late development, appearing about the 1890's. The single spindle machines, where only one piece could be worked on at a time, still required a fine dexterity on the part of the operator to produce pieces nearly identical in design. Plate 98 is a snapshot of the interior of the Knechtel furniture factory in Hanover in the early 1900's showing a row of carvers at work on their single spindle machines. After the appearance of the three-spindle carver in the 1890's came the multiple-spindle machines of 20 to 32 knives in the 20th century. These machines followed the shape of a "model" to produce multiple identical parts. Even today however, machine carving often requires the finishing touch of a man's hand to smooth and re-define the rougher edges and lines.

As Yapp also implied in the quotation cited above, machining specialty shops developed which produced not a finished product, but a standard part to be used by others in carpentry and cabinetwork. This happened early in Ontario as well. The description of woodworking factories in the Ottawa Directory for 1866-67 separates the "furniture, chair and bedstead" makers, who were "doing a large business" and

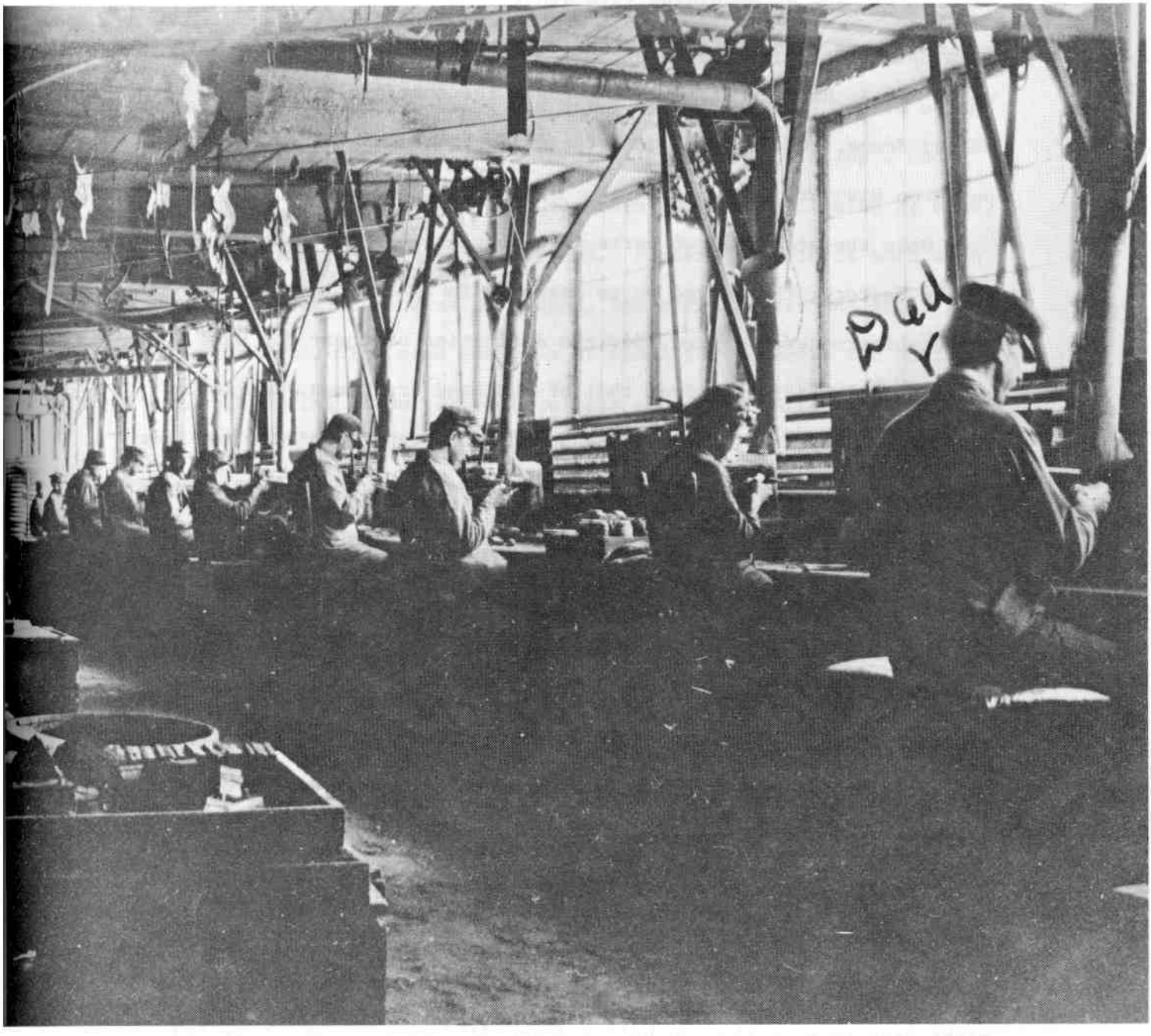


Plate 98. Interior of Knechtel Furniture Limited, Hanover, Ontario showing carvers at work on single-spindle carving machines. Early 1900's.

Photo courtesy of Knechtel Furniture Limited, Hanover, Ontario.

"employing a large number of hands" from both the "sash, door and blinds" makers and the "wood turning establishments". Such specialty shops could also be used by hand craftsmen who perhaps needed some special turning or machining work done. (Indeed in England, cabinetmakers were sending out their turning as lately as the First World War.) Hand craftsmen also bought the standard products of such shops; Jones, for example, used factory-produced mouldings and drawer pulls on his furniture.

Once the standardized parts were completed in the machine shop of the factory, they moved on to assembly in the "cabinet shop". Here the "cabinetmakers" worked, but the definition of their job was substantially different from that of the hand craftsman. At their rows of benches, they would sub-assemble the prepared pieces for door frames, drawers, carcases and so forth using animal glues and clamps. If the cabinetmaker has some machining to be done, such as sanding newly assembled joints or shaping new edges, he might send the piece back to the machine shop. In final assembly he would fit drawers to either an "easy" or a "snug" fit, trim doors, do hand sanding, etc. His job was still important, requiring a fair amount of skill, but it had been vastly reduced in the range of its duties compared to the hand craftsman.

Similarly, the furniture industry produced other professional specialties, including chair makers, finishers ("French polishers"), carvers, turners, upholsterers, etc. Typically, for example, a chair might have to pass through half a dozen different hands before being completed.

Interestingly, despite this growing "assembly line" technique in the factory, where less expertise within a narrower range of skills was required of the worker as a result of the invention of many new and more efficient machines, furniture making remained a highly labour intensive industry. Many of its operations were simply not amenable to total mechanization. Veneering was still applied by hand before being pressed between clamps; finishing involved staining, "filling", and varnishing or shellacing with a brush, then repeated polishing by hand, finally ebonizing or gilding if desired. Fitting the pieces both with metal parts, such as handles or hinges, and with mirrors was still a manual procedure. The same was true of upholstering where the stuffing of horsehair, flax straw, dried tree moss or cotton batting had to be put in by hand, and the canvas or muslin covers, followed by the upholstery fabric, had to be tacked on manually as well. When coiled spring construction became common, it had to be inserted individually and by the specialist worker. Even today, upholstering is the most intransigently manual of all the furniture making operations, only using improvements in the saw to cut multiple fabric layers, and replacing the tack hammer with the staple gun; all other operations must still be completed by hand. Today furniture factories in Canada still employ a relatively large staff compared to the amount produced and, interestingly, they are still scattered in their traditional towns and cities, resisting amalgamation into an industry of giants. In the future, the history of Canadian furniture must incorporate the history of these firms.

THE FURNITURE

How to Distinguish Hand Made and Machine Made Furniture

The labour density in factories creates a problem for the researcher, raising once again the question of hand made versus machine made products. On the one hand the independent craftsman was mechanizing his procedures, while on the other the factory employed many hands. Toward the end of the 19th century in particular, the relationship between what can be termed "hand made" and what "machine made" becomes difficult to recognize or classify. A factory made piece may have much hand labour in it, though not all performed by the same man, and the hand made piece may be an assemblage of machined parts. There were also varying levels of modernity in the machines used by factories; some retained more traditional cabinetmaking techniques while others continually modernized and installed new machines. Furthermore the relative smallness of most factories, their scattered position, often in small towns, tended to make them less impersonal than other factory industries developing in Canada. Their workers continued (and still continue) to feel pride in their hand craftsmanship, thus blurring further the possible quality distinction between hand made and machine made furniture. In earlier days, a factory piece, particularly one rich in carving, might even be attributed to a specific worker by name. Charles Rogers, for example, "Designer and Carver" for the Jacques and Hay firm, received credit for the bed he created which the company exhibited at the 1852 Provincial Exhibition.

Even furniture style is not a reliable indicator of how a piece was made as factories flooded the market with standard pieces, minimizing customization, while the craftsman either "lagged" in an old style or followed their lead and produced similar products. It becomes difficult, sometimes impossible, to distinguish the origins of some furniture of

this type. There are however a number of guidelines which can be of help in deciding both how a piece was made and when.

Canadian furniture is rarely marked with the maker's name, though very occasionally this will be the case. The mark may appear in many forms -- as a label, a pencilled or inked inscription, a branded or stenciled or stamped name, etc. -- usually placed on the underside of chairs, or on the side of a drawer. This is not an infallible indicator of the maker though, as the owner or the dealer would sometimes mark his own furniture, particularly when moving or having it repaired.

Saw marks may be perceptible on the back of the piece, or on the undersides of drawers. Both the circular and the vertical saws left marks when cutting the boards which the maker may not have entirely planed away. The vertical saw marks may indicate a pre-1840's date, as the circular saw (leaving arc-like marks) came into common use about that time. This is also not a sure indicator as vertical saws continued to be used after that period, or else earlier seasoned boards may have been used in making later pieces. Vertical sawing may have been done by hand in a pit, creating slanted narrow ridges, or it may have been done by a powered saw, resulting in straighter, broader ridges.

If the backs or undersides of pieces do not betray saw marks, they may have "planing" marks, or soft regular undulations. These marks were caused by the round-soled "fore" plane (see plate 99) which was used by the cabinetmaker to smooth boards directly after cutting and seasoning. They are a very good indicator that the piece was hand made, as factories smoothed their rough boards with a large planer which produced a flat surface.

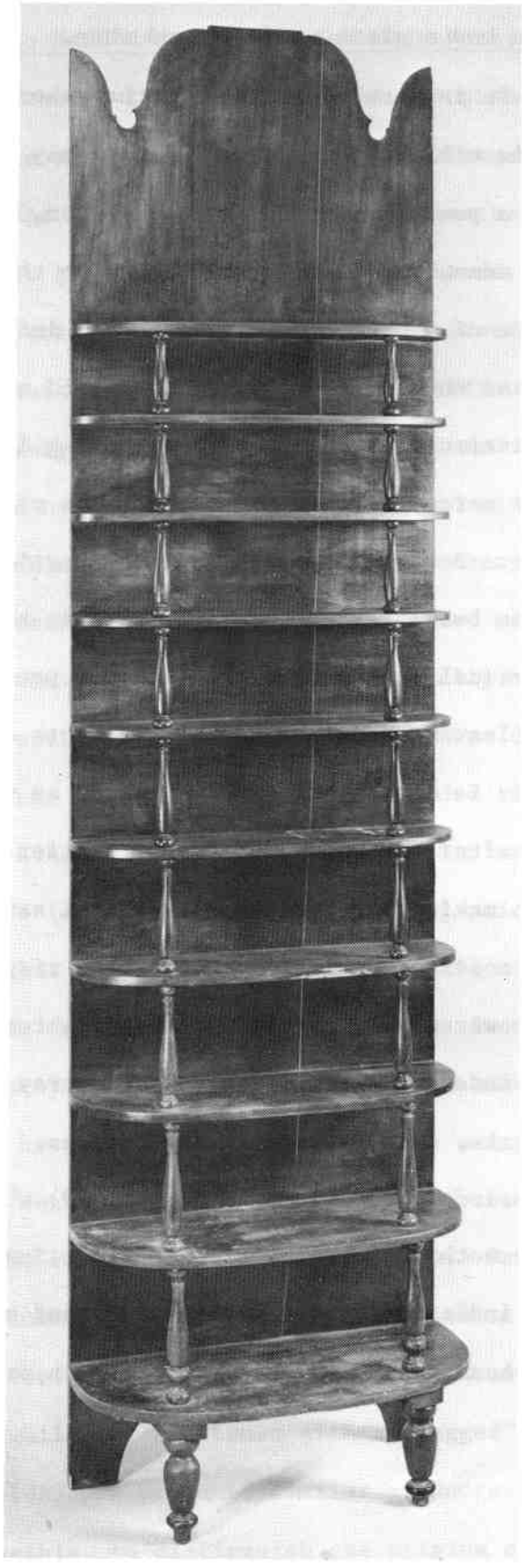


Plate 99.

What-not, see p.147

Plate 99. What-not

D-7940

The tall what-not, intended as a display case for numerous knick-knacks, is an entirely Victorian invention. This one has 10 shelves with the top two uniform in size and the next eight graduated to the largest at the bottom. The shelves are each supported by two turned posts. The sanding is roughly done with rather slapdash shellacing on the surface. The wood has been stained red. This is a piece that could have been speedily turned out by a cabinetmaker such as Francis Jones. The undulations of hand planing with the fore plane can be felt on the back.

Dimensions: 85" high x 22 7/16" wide x 9 13/16" deep

Photo No.: 79-473

Great exactitude in the dimensions of a piece, the look of precision, is an attribute of machine made furniture. This exactness, in dovetails, or in the symmetry of two sides, or particularly in turned parts such as chair or table legs and stretchers, may not require callipers to determine. For example, plate 100 shows two almost identical side tables from the Jones collection. The legs of the one on the right are perceptibly thicker than those of the one on the left. Furthermore, the exact size and placing of the curves and grooves along the length of the leg can never be exactly duplicated by the hand craftsman doing one leg at a time in his lathe, although a deceptive degree of precision can be attained. This is because his hand must guide his chisel over the turning stock; in the later factory lathe, once the automatic cutter blades are set, they pass over the rotating stock in regulated and identical fashion each time.

It is also important to recognize if handles, pulls or mouldings on furniture are machine made or homemade. Although machine made fittings appear on homemade pieces, homemade fittings very rarely appear on machine made pieces, except perhaps as substitutes or repairs on the original. Consequently the presence of homemade fittings on what may otherwise be either a hand crafted or a machine produced piece, may tip the balance in favour of the former. Examples of such fittings are illustrated on plate 79 and appear on some of the furniture illustrated.

The same applies to nails, screws and other hardware. Although machine made screws for example, with their gimlet points and precision tooled profiles, were largely used in hand made as well as machine made furniture, hand made screws, with their flat points and manually produced threads, would have been used almost exclusively in hand produced items.

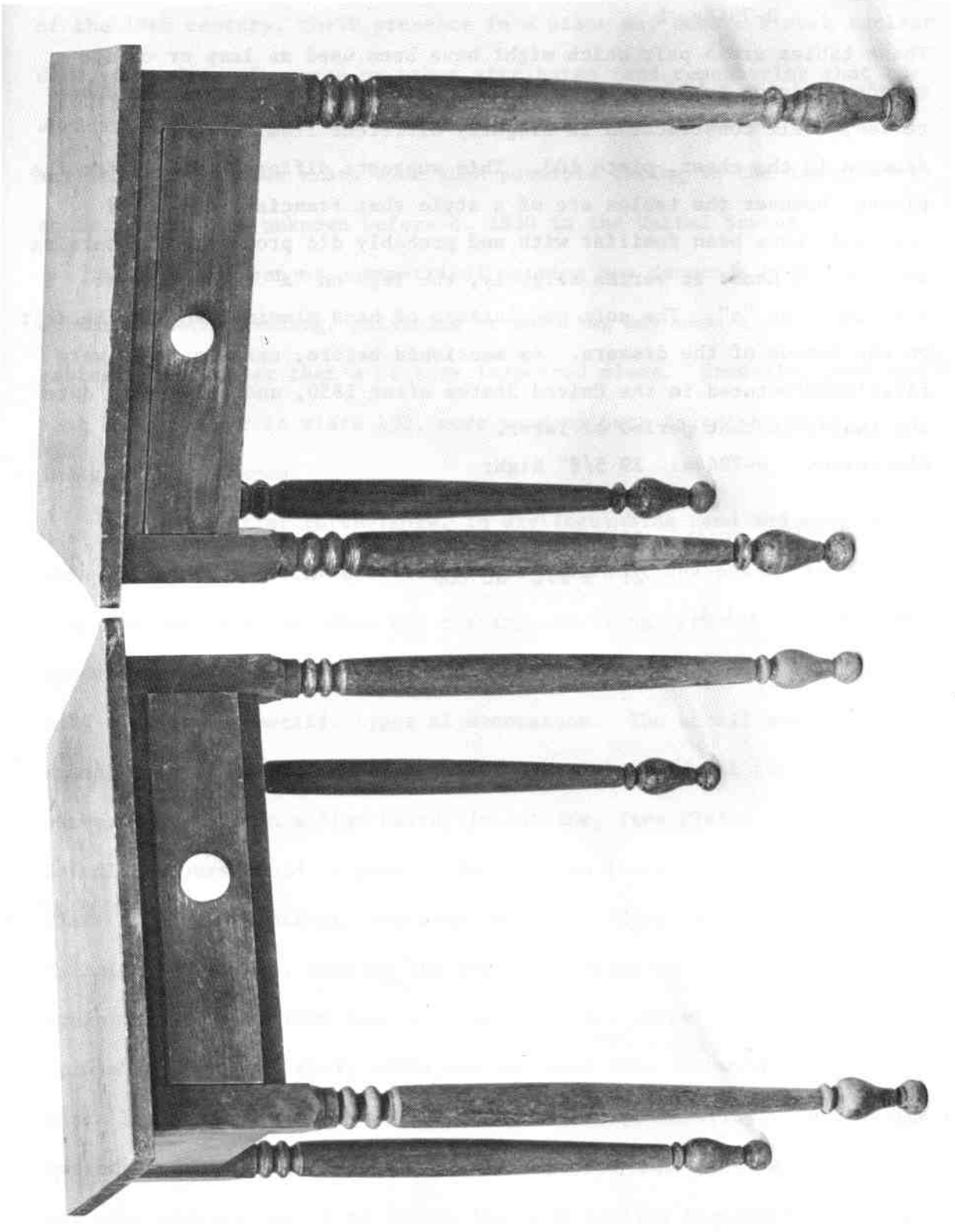


Plate 100. Small Tables, see p.150.

Plate 100. Small Tables

D-7944a, b

These tables are a pair which might have been used as lamp or candle stands, bedside tables or work tables. Although the drawers are dovetailed, their construction is slightly different from that of the drawers in the chest, plate 103. This suggests different makers for the pieces; however the tables are of a style that Francis Jones would certainly have been familiar with and probably did produce. The turning was done by hand; it varies slightly, the legs on "a" being thicker than those on "b". The soft undulations of hand planing can also be felt on the bottom of the drawers. As mentioned before, ceramic pulls were first manufactured in the United States after 1850, and this would date the tables to that period or later.

Dimensions: D-7944a: 29 5/8" high;
21" x $17\frac{3}{4}$" at top

D-7944b: $29\frac{1}{2}$" high;
21" x $17\frac{3}{4}$" at top

Photo No.: 79-474

Although Jones occasionally made and used his own screws in the last half of the 19th century, their presence in a piece may denote a much earlier date, depending of course on other attributes (and remembering that the earliest possible date for a piece is the date of its latest original attribute). Another example of such possible dating is the use of wire nails, which were unknown before c. 1850 in the United States.

Slightly uneven or asymmetrical carving may denote a hand carver at work; uneven sanding, polishing or painting may mean a careless cabinetmaker sooner than a factory inspected piece. Stencils, such as that on the chair in plate 102, were used by both factories and individual craftsmen.

It is essential furthermore, in distinguishing hand and machine made 19th century furniture, to be fully aware of the possibilities and characteristics of machines for carving, incising, pressing or producing other decorative effects. Machines were indeed highly adaptable, but only to certain specific types of decoration. The scroll saw, for example, (also called the fret saw or jig saw) could cut complex interior curves, but only on a flat board, in outline, (see Plates 103 and 104). Spindle carvers could be used to incise thin lines onto flat wood, (see Plate 104). In contrast, the hand carver could produce work much more "plastic" in effect, varying the depth and width of any one line or sculpting its form from flat to round at will. Other machines could "press" or "emboss" their elaborate patterns into the wood (see plate 102), again usually with a recognizable peculiarity. To complicate matters, though, some factories still employed hand carvers to finish off such carving, so as to reduce the machine-like regularity. At the same time, this type of machine carving, particularly scroll-cutting, became the vogue and even hand craftsmen were taking it up to satisfy their customers' demands.

Plate 101. Side Chair, see p.154.

Plate 102. Side Chair, see p.154.

Plate 101 and Plate 102. Side Chairs
D-7942, A-1619

The Windsor chair (D-7942) was a type commonly produced in large numbers by furniture factories. Certainly the turned legs and back of D-7942, the first chair, along with the stenciled decoration, would make this an easy style to produce mechanically. Shackleton (op. cit. p.85) mentions that "scrolled half-round cuts" in the top rail are "familiar in many Empire-style chairs". He reproduces an almost identical chair from an old photograph (on p. 139 of his book, op. cit.) calling it a "mid-century kitchen Windsor". This could easily be the type of "wood seat diner" imported by Francis Jones from the Jacques & Hay factory in Toronto for re-sale to his own costumers.

A-1619, the second chair, is "pressed" with an ornate design and a portrait of Sir Wilfred Laurier on its scroll or band saw cut back. Included are the words "Premier of Canada 1890 DR". This type of "press-back" wooden portrait chair appears to have been popular in the late 19th century in Canada.

Dimensions: D-7942: 34 5/8" high
A-1619: 41¼" high

Photo No.: Plate 101: 77-157
Plate 102: 77-158

Plate 103. Writing Desk, see p.156.

Plate 103. Writing Desk

D-7947

The sloped lift top has a main board and flanking strips of wood with the grain running at right angles in order to prevent warping. The gallery board could have been cut with a scroll or compass saw; the legs are turned and attached by mortise and tenon to the sides. Underneath on the right is a small extra drawer, added sometime later. Its workmanship is much inferior, without dovetails or grooving to fit the bottom, and with the screws for the runners attached to the bottom of the desk such that their points come through to the inside where they remain projecting. The stained reddish interior has pigeon holes in the back, with two veneered drawers and brass pulls. This desk is more likely to have been produced by a worker using his hands rather than a machine.

Dimensions: 37 3/8" high x 38 3/16" wide x 23 5/8" deep

Photo No.: 79-475

Plate 104. Day Bed, see p.158.

Plate 104. Day Bed

D-7937

This style of day bed, perhaps deriving its inspiration ultimately from similar late Empire models, was extremely popular in the very late 19th century, produced in bulk by furniture factories and sold as a piece of dining room furniture. Eaton's of Toronto was advertising an almost identical one in their catalogues of 1896. There is no part of its wooden frame which could not have been executed by machine. In particular, the flat, incised and applied carvings on crest and feet are easily mass-produced. Although this bed comes to the collection from the Jones family, and Francis Jones had the tools to make a day-bed of this type, including the veneering, it seems more likely that this piece was made in a factory. If we presume Jones made it, we must also presume he followed the latest furniture styles; that would not correspond with the very late survival of Ontario Regency in the chest of drawers, plate 106.

Dimensions: 70" long x 34¼" high x 21½" deep

Photo No.: 79-476

The lushness of the carving can also be a give-away. Always expensive when done by hand, earlier pieces or hand made pieces tend to be sparer of carving than those produced once machines became common. Indeed, after lush carving could be produced with ease, it proliferated on Victorian furniture. It was not until the earlier 20th century, when it once again became relatively expensive to produce and, for various reasons, less stylish, that it began to disappear.

Finally must be mentioned the overriding importance of achieving familiarity with the objects produced during the Victorian period. The styles in catalogues, photographs, engravings, magazines, newspapers and advertisements are many and eclectic. They are also the surest indicators of the more popular and the most often purchased items, even allowing a certain amount for pretension and fantasy in the written medium as opposed to real life. Furniture catalogues with photographs, supplemented by travelling salesmen, became the most common method for the wholesaler to make the retailer aware of his goods after c. 1860. Today, along with the other media mentioned above, they provide us with a primary source for machine made furniture styles of the later 19th century.

THE FURNITURE

Sources for Style of Later 19th Century Furniture

Francis Jones learned his trade in Ottawa in the 1840's under the tutelage of another cabinetmaker -- John Blyth. This set him on a more skilled plane than those country carpenters or woodworkers who, through necessity, taught themselves to make some rudimentary cabinetwork. He received his education in a town where he would have been likely to pick up some knowledge of contemporary furniture trends, at least as imported from England and the United States. What styles in fact might he most likely have learned? Do they correspond to the pieces which he might have produced?

In 1833 John Claudius Loudon first published his book Encyclopedia of Cottage, Farm and Villa Architecture and Furniture in London, England. It contained over 2000 illustrations and was repeatedly re-issued even as late as 1867. This book was most certainly familiar to the craftsmen of Upper Canada as there are many pieces of furniture extant which owe obvious debts to Loudon's illustrations. Perhaps the book's suggestions were so enthusiastically taken up because in fact it enshrined what was already being imported into Canada as the "Empire" style (when it came from France vis the United States) or as the "Regency" style (when it came from France via England). That Empire or Regency style lasted till about the 1830's in Europe, after which it was deposed by the developing "Victorian" styles. It remained fashionable in the English colonies and the States however, including Canada West where the colonists were beginning to see some return on their efforts in settling the country and were able and willing to exchange their crude homemade furniture for more skilfully produced pieces.

The main characteristic of this Empire style in France, as described by Philip Shackleton in his book The Furniture of Old Ontario (Toronto, 1973), was a rather massive neo-classicism, using much ornamentation in the form of eagles, dolphins, swans, harps, acanthus leaves, winged feet, etc., the whole often covered with metal inlay, gilding or painting. The English adaptation of the style also tended to heavy proportions, but with less ornamentation, more straight lines and a simpler profile. Being based on the classical revival which itself had architectural origins, pediments and pilasters were common forms of decoration. Two popularizers of the style in England were George Smith, who published The Cabinet-Maker and Upholsterer's Guide in 1826 (as a follow-up to his 1808 book Designs for Household Furniture and Internal Decoration) and Rudolph Ackerman who published a periodical called The Repository of the Arts from 1809 to 1828. Shackleton also mentions that both of these works were known by some Canadian craftsmen, if not as many as later came to know Loudon's book. A late Canadian version of the Empire style can be recognized in the chest of drawers on plate 105.

Plate 105. Chest of Drawers, see p.163.

Plate 105. Chest of Drawers

D-7938

The overhanging top drawers on this piece supported by flanking half-columns, and the generally heavy proportions identify it as a survival of the "Ontario Regency" or "American Empire" style. By mid-century this style had been largely superceded by more typically "Victorian" types. There are however examples such as this one of its persistence in more rural Ontario areas far into the second half of the 19th century. (Shackleton, op. cit. illustrates another one, p. 39) The chest is fitted with black painted wood pulls, brass keyhole surrounds and turned front feet. It is constructed with dovetailing and rectangular-headed cut finishing nails. There has been no attempt at graining or veneering.

Dimensions: 49 $\frac{3}{4}$" high x 49 7/8" wide at top x 19 7/8" deep at top.

Photo No.: 79-477

Peter and Michelangelo Nicholson were two other influential stylemakers; they put out The Practical Cabinetmaker, Upholsterer and Complete Decorator in London, England in 1826. The book was reprinted in 1843; plate 106 shows an example of the type of furniture they recommended. Their style book preceded the somewhat simpler one by Loudon. Again, compare the legs of this "window seat" with those on the drop-leaf table, plate 107.

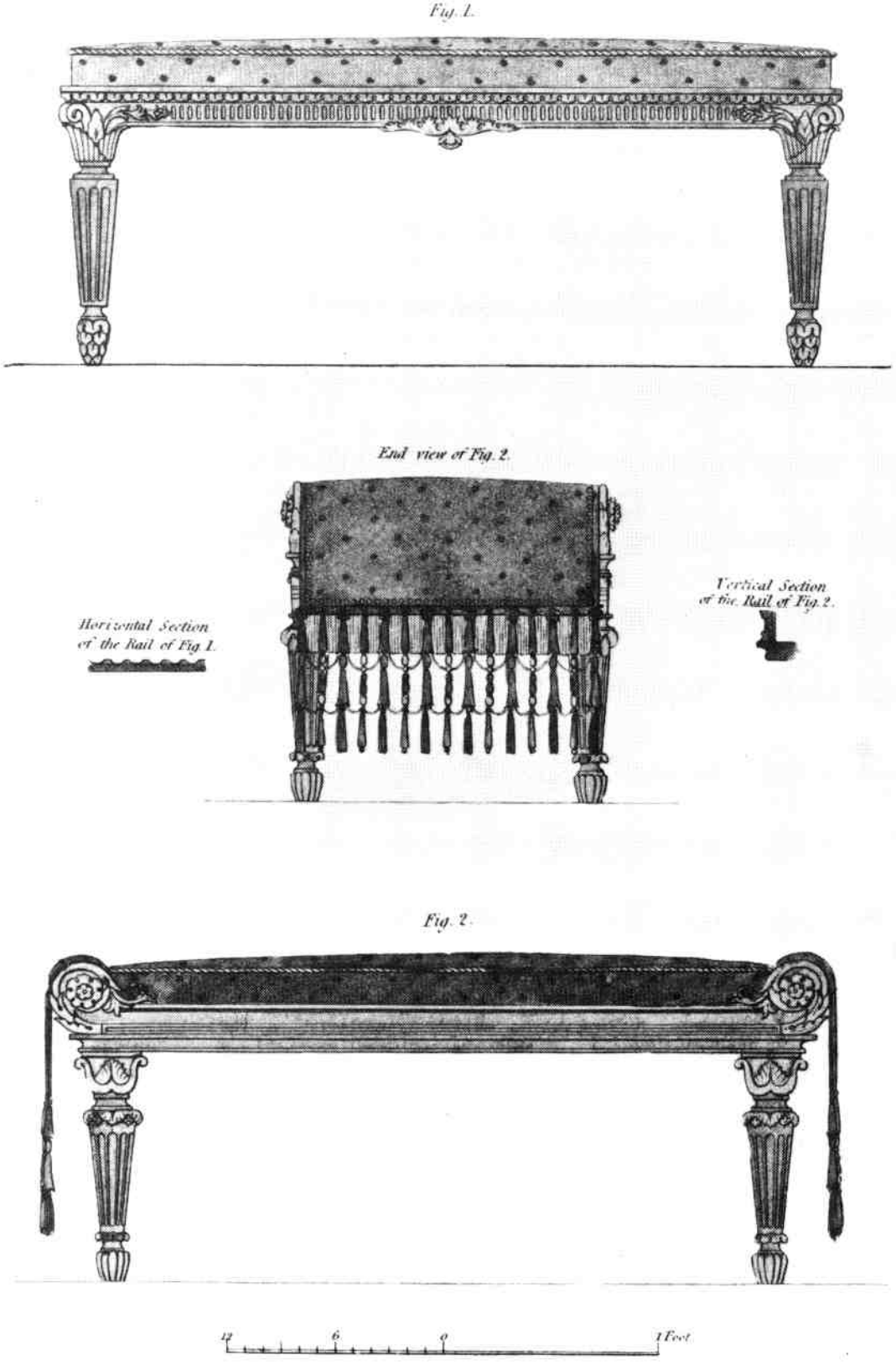


Plate 106. Illustration from The Practical Cabinetmaker, Upholsterer and Complete Decorator by Peter and Michelangelo Nicholson, London, 1826.

Plate 22, "Window Seats".
Photo No.: 76-2457

Plate 107. Drop-leaf Table, see p.167.

Plate 107. Drop-leaf Table

D-7946

This table is one of a pair; its companion piece however has been retained by the Jones family. The turned legs are reeded and supported on porcelain casters with brass cups. The round edge of the table is moulded. The reeding was probably produced by turning dowels on the lathe, then cutting them in half and applying them to the legs with small finishing nails. The positioning of the reeds might have been done with the aid of the jig shown on plate 27. The style and proportioning of the legs reveals the same late Empire influence noticed in some of the other pieces.

Dimensions: $28\frac{3}{4}$" high x 38 3/8" wide x 34 5/8" deep (extended)

Photo No.: 79-478

Yet even more effective perhaps than Loudon in presenting the last stages of the neo-classical revival to North American workshops was John Hall, a Baltimore architect who published his Cabinet Maker's Assistant in 1840. In his book the weighty forms of the style are simplified and adapted so as to allow partial manufacture by machine. The flat scroll shapes could easily be produced on the band saw or the scroll saw; indeed in his preface, Hall made a point of saying "particular attention has been bestowed in an economical arrangement to save labor". The development into easily reproduced furniture was well under way. (Compare his lounge and table, plate 108 and 109, with plates 104 and 100.) A further adaptation of the style was presented in 1850 by the American Andrew Jackson Downing in The Architecture of Country Houses.

However a recitation of all these sources suggests that late Empire or Regency was the only style in North America. In fact there were many other "revivals" such as the "Gothic", the "Elizabethan", the "Rococo". All of these styles lent themselves to machine processes since they were basically changes in ornamentation rather than structure, and ornamentation was the purpose behind many of the different saws and carving machines being invented by the Victorians. Empire however is most extensively dealt with here since it is almost exclusively the style which seems to have influenced the makers of the pieces of furniture illustrated in this text which are attributed either to Francis Jones or to furniture factories. (The attribution to Francis Jones is made on the basis of tradition within the Jones family and on the suitability of the style to his period and place, using technical details such as hardware and construction as corroboration. These are however still uncertain bases for conclusions and so the attributions are not presented as unquestionable.

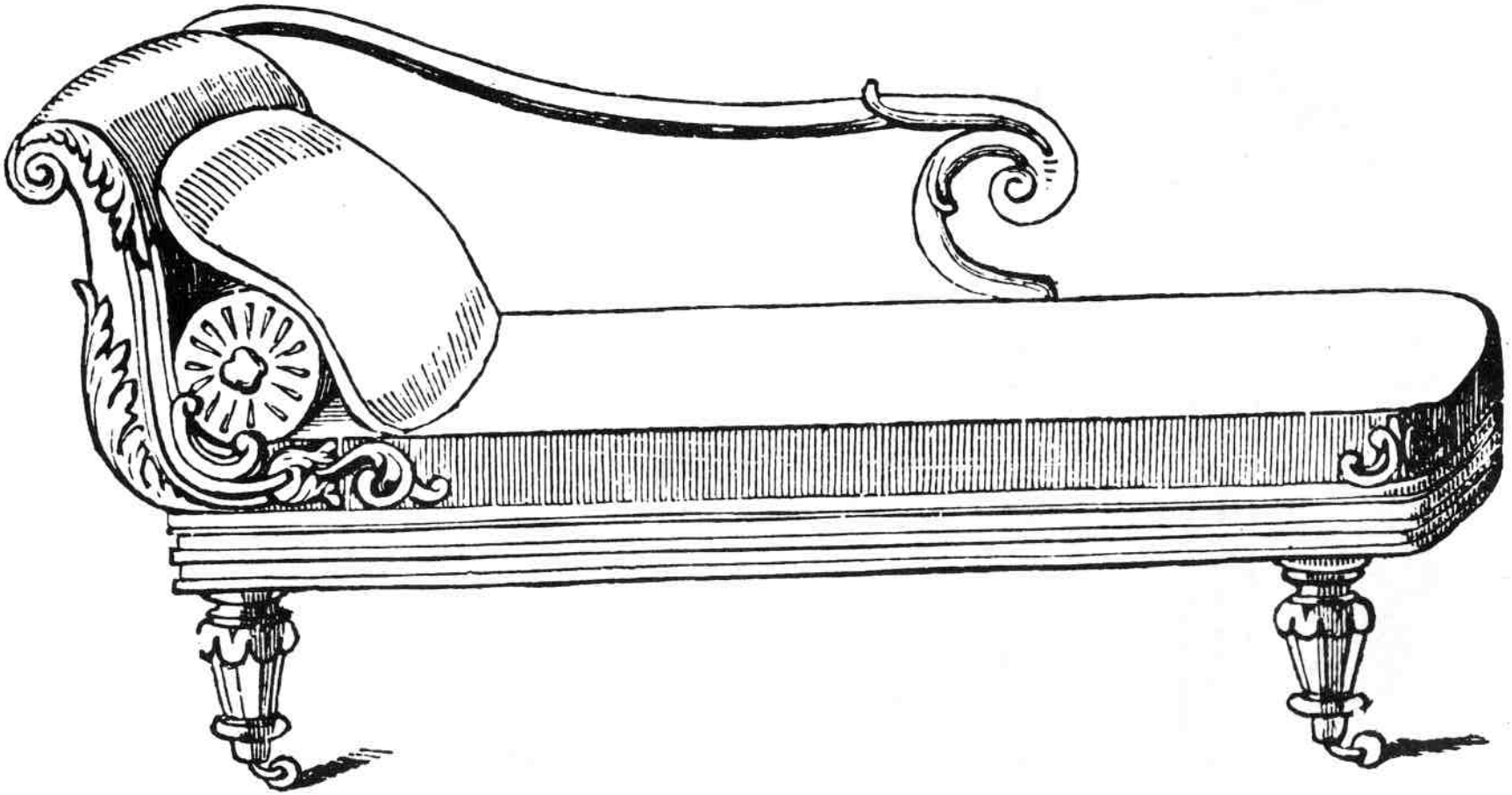


Plate 108. Lounge. Illustration from the Cabinet Maker's Assistant by John Hall, Baltimore, 1840.

Photo No.: 76-5041

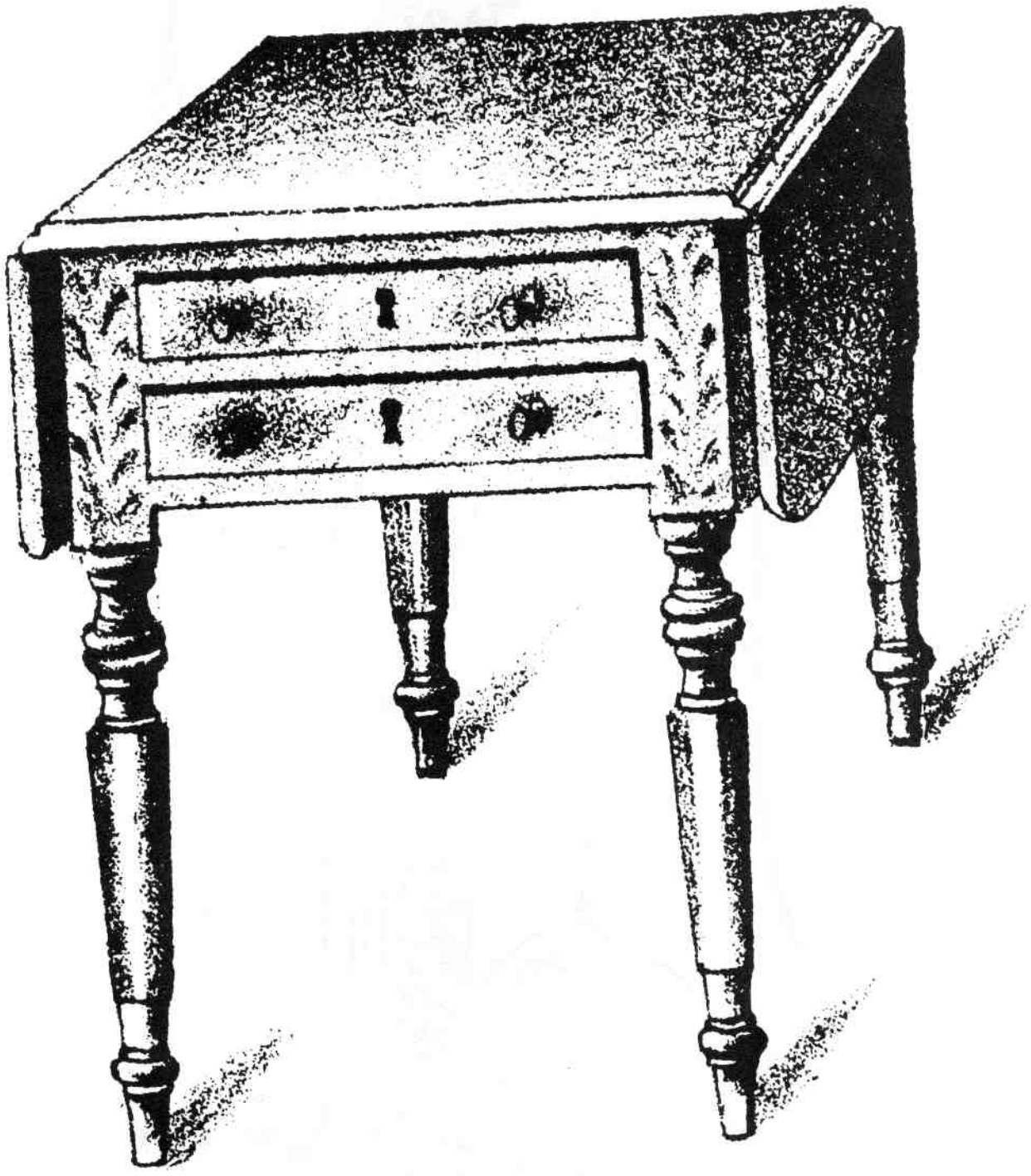


Plate 109. Table. Illustration from the Cabinet Maker's Assistant by John Hall, Baltimore, 1840.

Photo No.: 76-2590

The pieces would nevertheless seem to be competent and fairly typical examples of rural Ontario cabinetmaking in the last half of the 19th century). With the background outlined above we can recognize the motifs which determine their style and take note of the impressive "cultural lag" which occurs in the country, and even factory, furniture, made possibly as latterly as the 1870's and 1880's in a style superceded by the 1830's on the continent. (cf. Plate 105) We are reminded that fashion is unstable only where there exists a population capable and desirous of buying and supporting new things -- usually in the major centres of a relatively wealthy country, not in the developing settlements of a new land.

CONCLUSION

This study has focussed on the tools and techniques of furniture production in Ontario in the last half of the nineteenth century, highlighting in particular the life of one rural Canadian cabinetmaker whose methods may be considered typical of the craftsmen of the period. What has been learned?

Firstly, outside influences were very strong in Jones's workshop. Many of his tools and tool parts were imported, whether from Great Britain, the United States or some other part of Canada. He seems to have taken advantage of every improvement within his means to ease the effort of work; his nails and hardware, his saw sets and some measuring tools, to name only a few, all indicate a steady supply from factory sources which he indirectly patronized through retail outlets. Illustrated catalogues and travelling salesmen were also becoming popular as sales techniques with certain firms. Both tools and furniture were sold this way, bringing mass-produced goods to even the sparsely populated areas of Canada. It may have been through such contact that Jones became a client of Jacques and Hay in Toronto, apparently selling their chairs through his shop.

The complimentary attitude of the general public toward machine-produced objects has been mentioned, and there is no reason to doubt that Jones would have shared in that admiration. After all, consistent precision was one of his own ideals, as his measuring instruments and the postulated machines in his workshop make clear, so the achievements of the factory machine must often have seemed his own ultimate aim. It is perhaps because of this attitude that the transition from craftsman to factory worker was so gradually achieved with relative acceptance in the small towns of Ontario. The craftsman was already used to assembling some factory produced parts into

his furniture. The division of work in a factory was very similar to the steps followed by the craftsman himself, from design, to the formation of parts, to assembly and construction methods to the final finishing. The craftsman easily became a "commuter" bringing his tools to work in different parts of a factory. And even if he finally became a "specialist" in one or other area, he never lost the pride of craftsmanship associated with skilled labour. Even present-day firms whose history reaches back into the nineteenth or early twentieth century maintain this pride in many of their workers, whose long-time loyalty to the firm can be remarkable. Unlike other factory environments, unionization never achieved a hold in the furniture industry in Ontario where the factory remained an integral part of a small community, heavily labour intensive, and the alienation of worker from product was minimized. However there is no doubt that the factory gradually dominated the market, absorbing the craftsman, re-training him, re-defining his job, but still maintaining enough hand labour to call itself a skilled workplace, rather than a mere assembly line.

The same outside sources which gave Jones so many of his tools and techniques, also determined his style of furniture. English and American examples formed the basis of his adaptations and simplifications of the "Empire" or "Regency" styles. Copying traditional examples was entirely laudable; it placed the craftsman in a tested tradition, understood by his clients who could easily judge the quality of execution in every piece. Changes in these styles seem to have come more slowly than the change from craftsman to factory. Further, the confusing reciprocal imitation between pieces of furniture made by the craftsman and the factory has already been discussed. As with techniques however, the factory style in decoration, shape and construction, gradually superceded the craft style as it answered

the needs and desires of a growing population at a reasonable price. This fact brings us back to the disappearance of the craftsman; one of the reasons for his demise was exactly this inability to compete in the market-place against vigorous, organized and wide-ranging large scale competition. The country cabinetmaker, like Francis Jones, lasted longer because of his more remote location; but significantly, there was no one to take over his work-shop when he died.

SELECTED SOURCES AND SUGGESTED BIBLIOGRAPHY

The following list of sources and books is certainly not exhaustive, but it will help to orient those interested in pursuing this subject further through the use of both primary and secondary material.

Chapter 1 -- THE BIOGRAPHY OF FRANCIS JONES AND HISTORY OF HIS AREA

For much of the information in this chapter I am indebted to the Public Archives of Canada in Ottawa (Census Rolls, Assessment Rolls, City and County Directories, etc.) to the National Library, Newspaper Division, and to Francis Jones' private papers preserved by his descendents. The information on the Welsh settlement was taken from a Phd thesis by Frederick Rosser entitled The Welsh Settlement in Upper Canada, presented to the University of Ottawa in 1953, although subsequently published by the University of Western Ontario in 1954.

Chapter 2 - THE HAND TOOLS

The books which list cabinetmaker's hand tools and their history are legion. Perhaps the most valuable to date is Charles F. Hummel's With Hammer in Hand, The Dominy Craftsmen of East Hampton, New York, published for the Henry Francis du Pont Winterthur Museum by the University Press of Virginia, Charlottesville, U.S.A. in 1968. That book however deals mainly with the pre-1840 period. Further excellent general historical works written in the 20th century, any of which may be used as a starting point for research, are:

Goodman, W.L. The History of Woodworking Tools. (London: 1962).

Mercer, Henry C. Ancient Carpenter's Tools. (first published in 1929; reprinted in Doylestown, Pennsylvania: 1951)

Sloane, Eric. A Museum of Early American Tools. (New York: 1964)

Welsh, Peter C. Woodworking Tools, 1600-1900. (Paper 51, Contributions from the Museum of History and Technology, Smithsonian Institution, Washington, D.C.: 1966)

Wildung, Frank H. Woodworking Tools at Shelburne Museum. (Shelburne, Vermont: 1957).

Publications with the same historical approach but relating to tools on a more specific level are W.L. Goodman's British Plane Makers from 1700 (New York: 1968) (unbeatable for identifying British made planes), Kenneth and Jane Roberts' Planemakers and other Edge Tool Enterprises in New York State in the Nineteenth Century (New York: 1971) and the magazine of the Early American Industries Association called The Chronicle. This magazine, with its in-depth studies of particular tools, has been publishing since 1933 and has compiled a useful index to its volumes.

Apart from these and similar historically-minded works, there are many books which might be termed "primary"; that is, that were written perhaps as hand books or trade manuals, intended actually to be used as guides by cabinetmakers of previous centuries. Two of the earliest of these, though by no means the only ones, are:

Moxon, Joseph. Mechanick Exercises, or the Doctrine of Handy-works. (first printed 1678/80 in London, England; 3rd edition: 1703, reprinted New York, Washington, London: 1970)

Diderot, Denis. L'Encyclopédie, ou Dictionnaire Raisonné des Sciences, des Arts et des Métiers. (first printed Paris: 1763; edited and reprinted New York, Toronto: 1959).

Some nineteenth or early 20th century volumes of this type are:

Denning, David. The Art and Craft of Cabinet-Making, A Practical Handbook to the Construction of Cabinet Furniture (London: no date, possibly early 20th century)

Holtzapffel, John Jacob. Turning and Mechanical Manipulation, 5 vols. (2nd edition: London: 1864-84)

Nicholson, Peter. The New Practical Builder and Workman's Companion in Carpentry, Masonry, etc. (London: 1823-24)

Spons' Mechanics' Own Book: A Manual for Handicraftsmen and Amateurs. (3rd edition, London, New York: 1889)

Yapp, G.W., editor. Art Industry: Furniture, Upholstery and House Decoration. (London: 1879; reprinted Westmead, Farnborough, England: 1972).

Another invaluable source of primary information that is being increasingly reprinted is the wholesale or retail manufacturer's catalogue. Among the examples referred to in the text is the Early American Industries Association 1973 reprint of T.B. Rayl & Co.'s wood-worker's tool catalogue from the late 1880's. Further volumes are produced by the Ken Roberts Publishing Co. (e.g. a Chapin-Stephens Co. catalogue of 1914, 3 Stanley Rule and Level Co. catalogues (1867, 1870, 1879) and a history of the Stanley Rule and Level Co.'s Combination Planes from 1870 to 1895). Furthermore, the same publishing firm has produced the 1899 catalogue of Alex. Mathieson & Sons Limited of Glasgow, Scotland. Arnold and Walker of London, dealers in antique tools, have reprinted the Illustrated Trade List of Prices of Sheffield Goods, 1889 edition.

Chapter 3 - THE TRANSITIONAL PERIOD AND THE FACTORY SYSTEM

As almost no research exists in these areas there are only a few books relevant to the text which may be mentioned. Among them are:

Acton, James, ed. Canadian Book of Furniture. (Toronto, Montreal: 1923)

MacKinnon, Joan. A Checklist of Toronto Cabinet and Chair Makers. (National Museum of Man Mercury Series, History Division, Paper No. 11, Ottawa: 1975)

Ransom, Frank Edward. The City Built on Wood, A History of the Furniture Industry in Grand Rapids, Michigan, 1850-1950. (Ann Arbor, Mich.: 1955).

It is from the publication by Joan MacKinnon that most of the information on the Jacques and Hay firm in Toronto was taken.

Chapter 4 - THE FURNITURE

A number of the relevant books on furniture styles for 19th century Ontario are mentioned in the text. However certain others might also be listed for a fairer sampling of the taste of the time, such as:

Dobson, Henry and Barbara. The Early Furniture of Ontario and The Atlantic Provinces. (Toronto: 1974)

Freeman, Larry. Antique Furniture Handbooks, Vol. 3, Federal-Empire. (Watkins Glen, N.Y.: 1956)

Freeman, Ruth and Larry. Victorian Furniture. (Watkins Glen, N.Y.: 1950)

Ingolfsrud, Elizabeth. All About Ontario Chests. (Toronto: 1973)

Morse, John D., ed. Country Cabinetwork and Simple City Furniture. (Winterthur Conference Report 1969, Charlottesville: 1970)

Wills, Geoffrey. English Furniture 1760-1900. (Enfield, Middlesex, England: 1971)

Yeager, William, general ed. The Cabinet Makers of Norfolk County. (Simcoe, Ontario: 1975).

It might also be mentioned that among the best style sources for everyday furniture in the late 19th century are the reprints of retailer's catalogues such as Eaton's in Toronto or Sears Roebuck & Co. in the United States.

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MERCURY SERIES PUBLICATIONS

Each component of the National Museum of Man (the History, National Programmes and Education & Cultural Affairs Divisions, the Canadian Ethnology Service, the Archaeological Survey of Canada, the Canadian Centre for Folk Culture Studies and the Canadian War Museum), provides papers for publication in the Mercury Series. These are available from the following address on receipt of a cheque made payable to the Receiver General of Canada.

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La division d'Histoire a déjà contribué à la Collection Mercure les numéros suivants:

1972

No. 1 "The Twenties in Western Canada" edited by S.M. Trofimenkoff. 259 p.

[Out of Print - Epuisé]

1973

No. 2 "History Division: Annual Review 1972" by F.J. Thorpe. 22 p.

[Out of Print - Epuisé]

No. 3 "Mid Forests Wild: A study of the Concept of wilderness in the Writings of Susanna Moodie, J.W.D. Moodie, Catherine Parr, Trail and Samuel Strickland, c. 1830-1850" by Edward H. Dahl. 59 p., 4 illustrations. $1.00

This brief study uses content analysis to provide a refreshing approach to understanding the experience of early Canadian pioneers.

1974

No. 4 "History Division: Annual Review 1973" edited by F.J. Thorpe. 22 p.; on request.

No. 5 "Some Sources for Women's History in the Public Archives of Canada" by Heather Rielly and Marilyn Hindmarch. 93 p., 5 photographs. $1.50

A selected bibliography of holdings (19th and 20th centuries, English language private papers) in the Public Archives of Canada of interest to the study of women's history.

No. 6 "Le Sauvage: The Native People in Quebec historical writing on the Heroic Period (1534-1663) of New France" by Donald B. Smith. 133 p., 20 photographs. $1.50

The treatment of native peoples in Canadian History texts is currently the subject of some debate. This paper analyses the treatment of authors who have written on the period prior to 1665, a period of tremendous importance for it was the period of first contact when many of the stereotypes regarding native peoples were set down.

1975

No. 7 "History Division: Annual Review 1974" edited by F.J. Thorpe., 40 p., 5 plates.

[Out of Print - Epuisé]

No. 8 "Un ferblantier de campagne (1875-1950)" par Jean-Pierre Hardy. 61 p., 34 planches. $1.25

L'outillage et les produits décrits et illustrés dans cet inventaire proviennent tous de la boutique des Lévesque de St-Pacôme, Comté de Kamouraska, ferblantier depuis le dernier quart du 19e siècle. Une brève biographie des deux plus vieux artisans de la famille sert d'arrière-plan historique.

No. 9 "The Social Gospel in Canada: Papers of the interdisciplinary conference on the Social Gospel in Canada, March 21-24, 1973 at the University of Regina" dedited by Richard Allen.

The Social Gospel Movement has long been recognized as one of the creative forces in the development of a uniquely Canadian style of social criticism. The eleven papers presented in this volume examine the movement from a wide variety of perspectives. Five active participants in the movement offer their reminiscences, while five contemporary scholars examine the movement from a range of disciplinary viewpoints, all of which throw new light on a variety of questions. Professor Allen's introduction places the whole movement in an international setting that has not been attempted to date.

No. 10 "Cities in the West: Papers of the Western Canada Urban History Conference - University of Winnipeg, October 1974" edited by A.R. McCormack and Ian MacPherson. 322 p., 8 plates. $3.75

The relatively recent preoccupation of Western Canadian historians with their urban past has resulted in an imaginative new field of research and writing. The papers presented in this volume sample that research from a variety of perspectives: the development of local government; social life; businessmen and pressure groups; radical politics; and recent trends and perspectives.

No. 11 "A Checklist of Toronto Cabinet and Chair Makers, 1800-1865" by Joan MacKinnon. 203 p., 4 plates. $2.50

The present checklist of Toronto cabinet and chairmakers is published as an aid to and encouragement of further studies in the field of material history. It indicates the variety and wealth of archival sources available for research, as well as the shortcomings of such material.

No. 12 "Le forgeron de campagne: un inventaire d'outils" par André Bérubé, François Duranleau, Thiery Ruddell et Serge St.-Pierre. 71 p., 41 planches. $1.00

Le métier de forgeron en fut un des plus importants du passé. Par sa contribution à la croissance économique, il occupait une place importante dans la société d'antan. Cet inventaire d'outils a pour but de contribuer à notre connaissance d'un élément important de notre passé artisanal.

No. 13 "La ville de Québec, 1800-1850: un inventaire de cartes et plans" par Edward H. Dahl, Hélène Espesset, Marc Lafrance et Thiery Ruddell. 423 p., 72 planches. $5.00

Ce volume a pour but d'examiner les cartes de la ville de Québec entre 1800 et 1850, lesquelles constituent une source de richesse sur l'histoire de la ville.

1976

No. 14 "Kingston Cabinetmakers 1800 - 1867" by Joan MacKinnon. 190 p., 39 plates. $2.75

This volume is a Master's thesis published according to the requirements for a Degree of Master of Museology in the University of Toronto. The intent of this work is to provide new insights into the development of cabinetmaking in one area of Ontario.

No. 15 "Material History Bulletin" co-editors Robb Watt and Barbara Riley. 65 p., 13 plates.

"Bulletin d'histoire de la culture matérielle" co-rédacteurs Robb Watt et Barbara Riley. 65 p., 13 planches.

[Out of Print - Epuisé]

No. 16 "Trois générations de cordonniers à Saint Jean Port Joli" par Hélène Simard. 88 p., 53 illustrations. $1.50

Un témoin de 74 ans nous a raconté comment vivaient son grand-père, son père et son frère qui ont tous trois exercé le métier de cordonnier à Saint-Jean-Port-Joli. Il nous a décrit leurs tâches, leur clientèle, leurs méthodes de travail et leur outillage. Il a aussi reconstitué pour nous la boutique d'autrefois avec son mobilier et son outillage. Le témoignage de M. Michel Morency de Saint-Jean-Port-Joli nous renseigne donc sur la vie des cordonniers ruraux d'autrefois au Québec.

No. 17 "Quelques boutiques de menuisiers et charpentiers au tournant du XIXe siècle" par Jacques Bernier. 70 p., bibliographie. $1.00

Cette recherche, faite à partir d'un corpus homogène de documents qui sont les inventaires après décès, a pour but essentiel d'identifier les outils des boutiques des menuisiers et charpentiers de la région de Montréal de 1790 à 1812 et de connaître le degré d'utilisation de chacun. Des boutiques types ont été élaborées et le lecteur peut ainsi avoir un aperçu des outils qu'on trouvait dans les grandes, moyennes et petites boutiques de l'époque.

No. 18 "The Parliament of Women: The National Council of Women of Canada" by Veronica Jane Strong-Boag. 491 p., extensive bibliography. $5.75

A doctoral thesis submitted at the University of Toronto in 1975.

No. 19 "Les zouaves pontificaux canadiens" par René Hardy et Elio Lodolini. 156 p.

Cet oeuvre comprend L'Origine des zouaves pontificaux canadiens (par Hardy) et Les Volontaires du Canada dans l'armée pontificale (1868-1870) par Lodolini.

The following History Division Papers have been distributed gratis by the Chief, History Division, National Museum of Man:

Les dossiers suivants de la division de l'Histoire ont été distribués gratuitement par le Chef de la division de l'Histoire du Musée national de l'Homme:

No. 20 "Bibliography for the Study of British Columbia's Domestic Material History" by Virginia Careless. 77 p., 6 photographs.

This bibliography is intended to assist those studying interior decoration, furnishings, social and cultural life in British Columbia at the turn of the century. It should be of especial use to those interested in historical restorations and museum reconstructions of period rooms. It covers the material available in the major repositories of Vancouver and Victoria, B.C., and contains roughly 800 entries, divided into forty-six subject categories.

1977

No. 21 "Material History Bulletin" co-editors Robb Watt and Barbara Riley. 78 p., 16 plates.

"Bulletin d'histoire de la culture matérielle" co-rédacteurs Robb Watt et Barbara Riley. 78 p., 16 planches.

[Out of Print - Epuisé]

No. 22 "West Coast Logging 1840-1910" by Mary Shakespeare and Rodney H. Pain. 84 p., 65 illustrations.

A brief description of West Coast logging from the time of the first contact of the Native Peoples with Europeans to the waning of steam power in the woods and sawmills.

No. 23 "Les Intérieurs domestiques des menuisiers et charpentiers de la région de Québec 1810-1819" by Jacques Bernier. 85 p., 14 illustrations.

Cette recherche faite à partir d'une source unique d'information, les inventaires après décès, cherche à cerner et la fortune et l'intérieur des maisons des menuisiers et charpentiers de la région de Québec entre 1810 et 1819. Un total de 17 inventaires (8 charpentiers, 8 menuisiers et un maître menuisier) a pu être retracé aux Archives nationales du Québec et servant ici de base à l'élaboration de cet exposé.

No. 24 "Index for the Urban History Review 1972-1977/Index pour la Revue d'histoire urbaine 1972-1977" by Alan Artibise and/et Irene Artibise.

This index incorporates a detailed finding aid to the first six years of publication of the Urban History Review/Revue d'histoire urbaine, published by the History Division, N.M.M. in association with the Urban History Committee of the Canadian Historical Association. The review encompasses the broad field of urban studies with special attention given to the historical dimension.

1978

No. 25 "Approaches to Native History in Canada: Papers of a Conference held at the National Museum of Man, October 1975", edited by D.A. Muise 135 p.

[Out of Print - Epuisé]

1979

No. 26 "The Cabinetmaker's Art in Ontario, c. 1850 - 1900" by Lilly Koltun 193 p., 110 illustrations.

This study examines the life and work of a rural 19th century Ontario cabinetmaker, Francis Jones. An appreciation of his work is gained through illustrations and discussions of his shop and furniture-making techniques. This story is typical of many 19th century crafts: industrialization resulted in mass production and the disappearance of traditional trades.