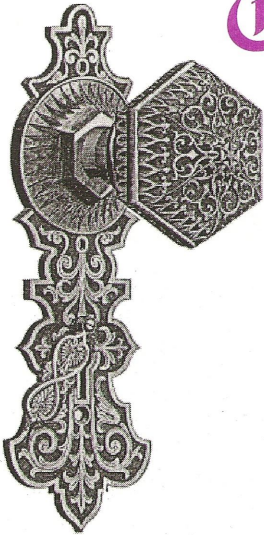


# The Doorknob Collector

Number 144

September-October 2007

A Publication of The Antique Doorknob Collectors of America  
A Nonprofit Organization Devoted to the Study and Preservation of Ornamental Hardware

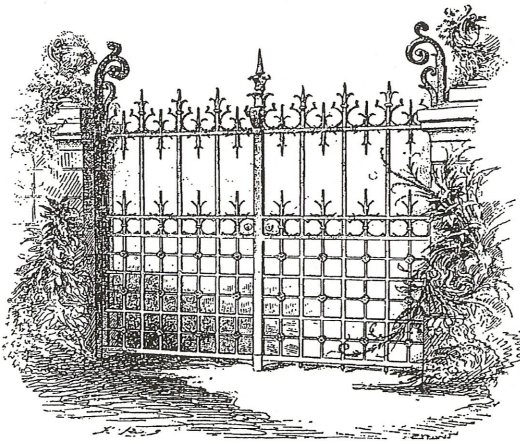


## BUILDERS' HARDWARE: TECHNICAL CONSIDERATIONS

Thanks to Bo Sullivan (and the New York City Public Library), we reproduce below some of the articles from a series entitled "Builders' Hardware" which appeared in The American Architect and Building News in 1888. They were written by Clarence H. Blackall, the founder and first president of the Boston Architectural Club

The articles do not concern decoration, only function, and include articles on spring hinges, nails, screws, overhead door hangers, etc. The essays were reworked by Blackall into a considerably longer book, Builders' Hardware: A Manual for Architects, Builders and House Furnishers (Ticknor and Company, 1890), which added chapters on doorknobs and artistic hardware. That volume has recently been reproduced by Kessinger Publishing and is available on the internet (both as pre-printed and print-to-order versions), but the reproduction apparently omits several oversize pages showing "artistic hardware".

### BUILDERS' HARDWARE. — I.



From *La Semaine des Constructeurs*.

THE series of articles which it is our intention to publish under this title, embraces a subject which has a direct bearing upon the work of the architect, and is, at the same time, of vital interest to the builder. The articles are, however, written primarily for the architect. Most builders, we fancy, are already pretty well posted on the subject of the hardware which they are called upon to use in the construction and finish of a house; but our experience has led us to believe that architects, as a rule, seldom go any deeper into the subject than is necessary to decide whether knobs shall be of one material or another, or whether some particular pattern of sash-lock will be satisfactory to the owner. It is needless to say

that a more extended acquaintance with the subject would do no one any harm, and might even be conducive to much good, if only in the way of providing more fittingly for the needs of the client. These articles are not intended, however, to be over-critical in their nature, nor necessarily so exhaustive as to embrace all the inventions and arrangements comprised in the general term of builders' hardware, though an attempt will be made to discriminate between what is merely novel and what is really suitable, and so far as possible the best of everything will be noticed under various heads, and an effort will be made to represent as nearly as possible the conditions and limitations of the builders' hardware market, as well as to show what is valuable for the uses of the architect.

It must be remembered that the statements are made from an architect's standpoint rather than from that of the builder or the manufacturer. The object in view is to show what can be obtained for special cases, and how it is necessary to be specified in order that there shall be no doubt in the minds of both builder and client as to what is called for. It is not intended to present abstracts of trade-catalogues, and if the series fails to represent all the wares in their proper light, or at times seems to ignore some valuable inventions or place undue stress upon articles that do not receive the heartiest commendation from those who use them, we can only plead in extenuation the difficulty of finding out everything that is in the market. Many of our best appliances have only a local and limited fame; and as they are advertised sparingly, it is often quite difficult to say exactly that such and such an appliance is absolutely the best.

For example, some Boston dealers consider that the best locks in the country are the hand-made goods turned out by such firms as Enoch Robinson's Sons. Without discussing the peculiar merits of the Robinson locks at this point, the assertion may safely be ventured that any one studying the subject in San Francisco would have as much difficulty in an investigation of Boston hand-made goods as we have had in our en-

#### Inside

Builders' Hardware.....1	Almost 100!.....9	2008 Convention..... 10
Stamps, Finally.....10		



deavors to deal with hundreds of valuable inventions which are hardly known at all in this part of the country. The hope is, therefore, expressed that this publication may call out facts concerning many articles of builders' hardware which at present are unknown to the ordinary trade. Any notes or suggestions relating thereto will be gladly considered by us, for future publication.

It can only be hoped that the series may suggest to architects the possibility of more definite specification, and of some better way of selecting and defining the necessary hardware than to merely insert a clause in the specification to the effect that a certain sum per door and a certain price per dozen is to be allowed in the contract for fixtures. This we know is a very common method of disposing of the question, and is, no doubt, the easiest way out of the difficulty, relieving the architect entirely from any necessity for exhaustive explanations in regard to subjects upon which he generally is not over-well posted. With an honest builder, or with one who has the fear of the inspector before his eyes and knows that all will be scrutinized, this may be a method sufficiently exact to suit most cases; but where the market is so full and there are so many really excellent appliances to choose from, it would seem certainly as if more exact specifications ought to be prepared. How many architects, for instance, ever insist upon a particular style of lock; and how many architects, even after many years experience with the best work, are able to tell a client what is the best sash-lock or what is the best style of hinge, without referring to a trade-catalogue? We cannot hope to meet all emergencies, but it is believed that, at least, a desire for a better selection of hardware than is generally possible can be stimulated.

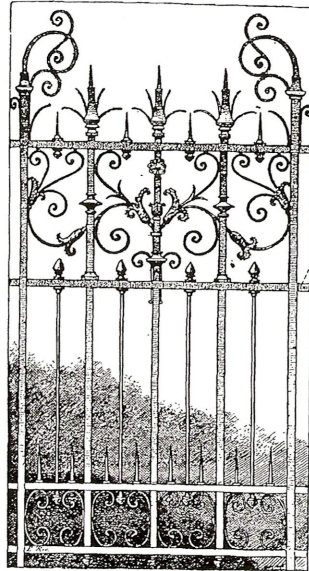
In these articles the term "builders' hardware" is assumed to include, generally speaking, metal-work of every description entering into the construction and finish of a modern building, from the nails and bolts used in the rough work to the door furniture, and brass lock and plate work of the finish.

The illustrations, which include nearly every article referred to, have been prepared as simply as possible. A great deal of care has also been taken in collecting the prices. The ordinary trade-catalogues are very unsatisfactory in this latter respect: many of them give no prices at all, and when the cost is stated it is always subject to discounts so uncertain and varying as to give absolutely no real information of value to the architect or the purchaser. The prices hereafter given will represent the retail cost of the articles in the Boston market, as nearly as we are able to ascertain it. These prices are, of course, somewhat fluctuating in their nature, but will, at least, serve as a means of comparison even if not exact for all localities and seasons.

In the collection of the subject matter which is to follow, the writer has had the heartiest coöperation from the leading dealers and manufacturers, and desires to especially acknowledge the courtesies of Messrs. Burditt & Williams, and Nichols & Bellamy, of Boston, the Hopkins & Dickinson Manufacturing Co., and the Yale & Towne Manufacturing Co.; without whose technical assistance any such papers would lack the value which it is hoped these will possess.

C. H. BLACKALL.

[To be continued.]



From *La Semaine des Constructeurs*.

**B**EFORE beginning a study of any portion of the subject, an attempt will be made to consider the metals used for builders' hardware and the various styles of finish possible in connection with them.

Iron is naturally the first material thought of. In its purest form it is known as wrought-iron, a term which is derived from the fact that in the earliest processes the iron was beaten while hot and the impurities forced out by the blows. Also the name indicates, to an extent, the nature of the material, which is yielding and pliable rather than brittle or hard. Wrought-iron is the most available material for constructive metal-work. Nails, bolts, ties, anchors, etc., are more naturally made of wrought-iron than of any other material. Nearly all strap-hinges and the best makes of common butts are made of it; also, for some forms of common bolts and any article of hardware which permits the metal being punched or pressed into shape, wrought-iron is more suitable than cast, and is much used on account of its superior strength. For finished work, such as knobs, plates, etc., there is very little wrought-iron hardware in the market. A good deal of it is made to order in the shape of ornamental hinges, straps and braces, but the amount of work involved in producing any given pattern is so largely in excess of what the same

amount of work would produce in other metals that wrought-iron will always be a material for the artist or the amateur. Quite recently, however, there has been made an important discovery which bids fair to bring about a change in the use of this metal. Wrought-iron melts at a very high temperature and it has, therefore, long been practically impossible to cast it in fine moulds; but by the addition of a small percentage of aluminium to wrought-iron when in a highly-heated condition an alloy is formed which melts at a greatly reduced temperature and gives the metal the degree of fluidity necessary to successful casting. It is claimed that the wrought-iron castings obtained in this way have all the sharpness and clearness of cast brass and at the same time retain the structural qualities of wrought-iron. So far as we can ascertain, cast wrought-iron is not in the market.

When wrought-iron has mixed with it a proportion of carbon exceeding 0.5% but not greater than 2% the structural nature of the metal is entirely changed and it becomes known as steel. So far as relates to finished hardware, steel is used only for springs and portions of detail, as the metal does not cast readily, and the surface will not keep bright. In fact, there are the same objections to it that there are to wrought-iron and almost the only use to which it is now put in hardware is in the manufacture of nails and screws and some brands of butts, which will be described later on.

When iron contains in its composition over 2% of carbon it becomes known as cast-iron, a metal which melts at a comparatively low temperature and is capable of being cast with very sharp lines. It is used a great deal for finishing work, though from its brittle nature and lack of tensile strength it is not utilized to any great extent for constructive purposes.

Iron hardware is finished in a variety of ways. If left in its natural condition as it comes from the file or hammer, it will rust very speedily, and to prevent this, the most common method is to heat the iron and paint it while hot with linseed oil, colored with lamp-black and mixed with a quantity of dryer or turpentine. When this coating is dry, the iron is sometimes



roasted in a kiln — fired, as it is termed. In this manner the paint seems to be dried into the pores of the metal, and it is left with a smooth, lustreless black surface, capable of resisting the action of the weather for quite a while, though by no means rust-proof.

If, instead of the foregoing, a bath is used composed of linseed oil and gum-anime or copal, the iron, on being finally fired and polished, presents the appearance of bronze. The tones can be varied to a considerable extent by the addition of color in the shape of powdered alloys of copper and bronze, which are mixed with the oil. The "Tucker bronze," the "Berlin bronze," and the so-called "Boston finish" are all substantially of this nature. Only rarely is a thin film of bronze or composition spread on the iron by the aid of electrolysis. All of the bronze-faced iron hardware is treated with the hot-oil finish just described. The cheapest forms of iron hardware are japanned or even merely coated with ordinary black varnish, the quality of the japanning or varnish depending upon the grade of goods. Japanning is practically indestructible where the iron is not exposed to scratches or rubbing. Hinges and butts are finished in this way more than any other one form of iron hardware, though of late years the best machine lock makers have taken a great deal of care in japanning the outer casings of locks. Fine grades of pulleys are also sometimes sold with japanned frames.

Iron is galvanized by simply immersing in a bath of a melted amalgam of zinc and mercury, containing a little sodium. The iron is first cleaned with sulphuric acid, and before immersion in the bath, it is usually dusted with sal-ammoniac powder. There is not a particle of real galvanic action about the process. It is sometimes thought that the zinc and mercury form a species of alloy with the iron which prevents it from rusting. Galvanizing is, indeed, the best preservative of iron applied in the form of a wash, but the color is not sufficiently pleasing to permit of its being used for nice work.

None of the foregoing processes are especially suitable for iron, as they all effectually disguise the nature of the material. There has recently been invented a process for protecting iron from rust, which is in some respects the best thus far devised. It is known as the Bower-Barff process, a term used to indicate two processes by which the surface of the metal is converted into magnetic oxide of iron, in which condition it is absolutely rustless. In the Barff process the metal is simply subjected to the action of superheated steam. This process is peculiarly suitable to wrought-iron and highly finished work. In the Bower process the iron is successively subjected to the action of highly heated air and carbonic-oxide gas. The heat converts the surface of the metal first into red oxide of iron, which is finally reduced to the magnetic oxide by the action of the gas. Owing to the simplicity of the process, it is claimed that its cost is less than that of galvanizing. It may be applied to any kind or style of wrought or cast iron or steel. The surfaces so treated have a perfectly uniform blue-black color. The sharpness of the lines is not affected in the least, and when the work is polished the final color is a lustrous ebony black, such as can be obtained in no other way. This coating of magnetic oxide is so hard that it is removed with difficulty by an emery-wheel. A few of the leading dealers are beginning to keep in stock some fine grades of door hardware finished by the Bower-Barff process, but the only parties making use of the patents in the production of builder's hardware are the Yale & Towne Manufacturing Co. This concern is beginning to put in the market quite an extended line of Bower-Barff iron goods.

Iron hardware is also found in the market finished with copper-plating, the raised surface of the pattern being buffed to show the natural copper color, while the background is left black or strongly oxydized. There is quite a variety of goods in this line. Similarly ironwork is nickel-plated, being left with either plain polished surfaces or with polished raised patterns on a black ground. Both nickel and copper plating, are laid on with the aid of a dynamo.

Brass and bronze are terms which are often confounded when speaking of hardware, though the materials are quite different in composition and are usually dissimilar in appearance. Brass is an alloy of copper and zinc in varying proportions, the ratio for ordinary purposes being seven of brass to three of zinc. Brass has a light yellowish appearance, is susceptible of a high polish, and can be rendered more ductile by the admixture of a small quantity of lead, which at the same time will diminish the hardness of the alloy. Brass tarnishes very easily if

handled or exposed to the weather, and is consequently generally protected by a coating of shellac, which, however, will not entirely prevent it from changing in tone. The color of the brass may be altered slightly by changing the proportions of the metals entering into the alloy, also by treating the finished castings with acids or hot chemicals in the same manner as will be described later for bronze.

Bronze is commonly an alloy of copper and tin in proportions varying from twelve parts copper to one part tin for metals to be used in the fabrication of mathematical instruments, to two parts copper and one part tin, for telescope or speculum metal. Bronze is sometimes more complex in its nature, lead being added in very slight quantity, and aluminium sometimes replacing the tin. It is less malleable but harder and more fusible than brass, and can be cast with greater ease and perfection. It is oxidized more easily than brass, and because of this it is possible to obtain a greater variety of colors for hardware goods.

Both brass and bronze can be cast with great ease, as compared with iron. The sharpness and delicacy of the casting depends, of course, entirely upon the care bestowed in preparing the pattern and the mould. There is a great difference in the quality of the work turned out by the various manufacturers. In the best of work the mould is formed with very fine sand and is double-faced, that is to say, after the pattern has been imprinted in the sand it is withdrawn, the matrix sprinkled with a still finer sand, and the mould repacked. After that, the moulds are suspended in the fumes of burning rosin, by which means they are coated with a fine layer of impalpable soot. When the molten metal is poured into the mould, the soot is pressed evenly into all the minute pores or interstices of the sand, and the resulting casting is so smooth and sharp as often to require but very little hand-chasing.

Brass goods are usually finished in the natural color of the metal with a thin coat of shellac. The same proportions of tin and copper are usually used for all the bronze work of a single firm, though the different manufacturers do not always adopt the same alloy. Bronze is, however, finished in a great variety of styles and colors, all produced essentially as follows:

The bronze on leaving the casting-room, is trimmed or chased as may be necessary, and is then immersed for a few moments in a strong acid bath which takes an almost infinitesimal film from the metal, leaving the surfaces entirely free from any oxidations or impurities. The piece of metal is then washed in weak alkali and clear water, to make it perfectly clean. Then the bronze is suspended in a bath of hot acids specially prepared with various chemicals to produce certain changes in the color of the metal. This operation is a very delicate one, requiring the care of trained workmen and a nice appreciation of the proper time to stop the action of the acids, as the appearance of the metal changes very rapidly, turning first from a bright copper red, to a pale gray and then into beautiful shades of browns and rich purples with ultimate dark tones depending upon the composition of the mixture or pickle. When the desired shade is reached the bronze is removed, dried in sawdust, and rubbed down to an even tone on a buffing-wheel. In some designs the raised portions are buffed down until the natural color of the metal appears, the pattern showing on a ground of the darker oxidized tone. Almost any color or shade can be had with bronze by a proper treatment. The Hopkins & Dickinson Manufacturing Co. has even produced a bronze as dark as iron, and in fact quite similar in appearance. Of course ordinary hardware is simply left the natural color of the metal, when made in plain bronze. It may be said here that plain bronze is as a rule more expensive than figured work. The plain surfaces require a very even grade of metal and smoothness of casting, whereas any imperfections are hidden by patterns, and a cheaper quality of workmanship does not expose itself. In the East there seems to be a decided preference for the plain goods, while in the West the figured styles are more commonly used. When exposed to rough usage a patterned piece of hardware will in general show wear less than a plain surface.

It must be remembered that the surface finishes produced in the manner just described are not to be described as permanent. The color is in reality laid on, and is superior to paint or varnish only in that by the means of the hot pickle the color penetrates somewhat deeper than if put on with a brush. Bronze hardware is sure to change in time, no matter how it may be finished,



and generally the stronger tones are the least satisfactory in the end, fading out to unpleasant musty hues. Shellac will hold the color, but as soon as it wears off, which it is sure to do on such pieces as knobs and door-handles, the exposed surfaces will turn while the shellacked spots do not. When time can be spared to keep the work polished brightly, a better plan seems to us to be to avoid everything but the natural bronze or brass color, omit the shellac, and polish by hand constantly. This, however, is seldom desirable. We have not yet reached the point where housekeepers will take as much care of the hardware as of the silver.

The treatment of silver-plated bronze is of a similar nature. The knob or plate is immersed in a silver-plating bath attached to an electric dynamo. A very few moments suffice for the deposition of the silver. The article is then taken from the bath and treated with hot acids and solutions until any desired degree of oxidation is obtained, when it is dried in saw-dust and the raised patterns slightly brightened on a buffing-wheel. There is at present a great deal of oxidized silver hardware in the market. Most of it is oxidized but slightly, leaving the raised figures a clear frosty white, but it can be had quite black if desired. The Yale & Towne Manufacturing Co., has an oxidized silver finish which is as black as old oxidized gun-metal.

Several very pleasing styles of finish are obtained by electroplating the bronze with copper and then treating with acids. An old-copper color thus obtained is one of the most durable finishes in the market.

When the cost is not a consideration it is sometimes desirable to have gold-plated bronze hardware, especially for such things as knobs, which are exposed to constant handling. Gold-plate is no handsomer than some shades of natural bronze, but the gold will not tarnish or be influenced by the weather. Gold-plating increases the cost of bronze hardware nearly twenty fold, and being so expensive is executed only for special orders.

Nickel-plating is applied more commonly to iron or steel than to bronze. This finish is but little used for nice work as the nickel will tarnish by exposure to the atmosphere after which no amount of rubbing will restore its first appearance. Nickel-plating is best adapted for keys, springs, etc.

The following list will give an idea of the great variety of possible treatments of bronze hardware.

#### FINISHES FOR BRONZE HARDWARE.

##### I. *The Hopkins & Dickinson M'f'g Co., finish:—*

- A. Statuary. Dark background, light surface.
- B. Statuary. Medium dark background and surface.
- E. Ebony. Suitable only for Plain or Lined Design.
- F. Statuary. Matted with Green.
- G. Gilt or Gold-washed.
- H. Gold-plated.
- I. Gold-plated. Matted with Enamel, in all colors.
- K. Gold-plated. Matted with Silver.
- L. Silver-plated.
- M. Silver-plated. Matted with Gold.
- N. Nickel-plated.
- O. Nickel-plated. Matted with Enamel.
- P. Nickel-plated. Matted with Gold.
- R. Nickel-plated. Matted with Copper.
- S. Hand-plated. Silver, suitable only for perfectly plain patterns.

##### II. *P. & F. Corbin, finish:—*

- No. 1. Natural Color, Light Bronze.
- No. 2. Chemical Dark Brown or Statuary Bronze.
- No. 3. Natural Color on Surface and Black Background.
- No. 3½. Same as No. 3 Finish, with different arrangement of colors.
- No. 4. Natural Color on Surface and Dark Brown Background.
- No. 5. Nickel-plated.
- No. 7. Nickel-plated Surface with Gold-plated Background.
- No. 8. Gold-plated.
- No. 10. High Polish, Natural Color.
- No. 15. Sage Green Background and Natural Color on Surface.
- No. 16. Terra-cotta Background and Natural Color on Surface.
- No. 17. Steel Gray Background and Natural Color on Surface.
- No. 18. Japanese Finish.
- No. 19. Oxidized-silver Finish.
- No. 20. Old Brass Finish.
- No. 21. Oxidized-Iron Finish.
- No. 22. Antique-Copper Finish.

##### III. *The Ireland M'f'g Co., finish:—*

- No. 1. Light Bronze.
- No. 2. Light Brown.
- No. 3. Black Background, Polished Surface.
- No. 4. Brown Background, Polished Surface.
- No. 5. Nickel-plated Surface and Background.

- No. 15. Sage Green Background, Polished Surface.
- No. 16. Terra-cotta Background, Polished Surface.
- No. 17. Steel Gray Background, Polished Surface.
- No. 19. Oxidized-silver.
- No. 21. Iron Finish all over.

##### IV. *Nimick & Brittan, finish:—*

- No. 1. Bright Surface, Natural Color.
- No. 2. Dark Brown Surface and Background.
- No. 3. Bright Surface and Black Background.
- No. 4. Bright Surface and Brown Background.
- No. 5. Bright Surface and Terra-Cotta Background.
- No. 6. Bright Surface and Green Background.
- No. 7. Nickel-plated Surface and Background.
- No. 8. Nickel-plated Surface and Black Background.
- No. 12. Gold-plated.
- No. 13. Steel Gray Bronze.
- No. 14. Old Gold Bronze.
- No. 15. Oxidized-silver Surface and Background.

##### V. *Nashua Lock Co., finish:—*

- No. 1. Natural Color, Light Bronze, Polished Surface.
- No. 2. Dark Bronze.
- No. 3. Light Bronze, Polished Surface, with Black Background.
- No. 4. Light Bronze, Polished Surface, with Brown Background.
- No. 5. Nickel-plated, Plain Surface.
- No. 6. Nickel-plated Surface, with Black Background.
- No. 15. Hand Finish.

Besides the finished work, both brass and bronze are used for screws, springs, lock-fittings, etc. A few locks are made with cases of cast-brass and some manufacturers are preparing to use copper-plated iron ore for the same purpose.

Brass and bronze together are used more than any other one metal for builders' hardware and are the basis of nearly all door and window fittings.

An important addition to the list of metals available for hardware purposes has recently been made in the shape of a composition designated as Phosphor-Bronze, an alloy of which the constituent parts are not as yet made public, but which the patentees describe as being a phosphorized alloy of copper and tin. The chemical action of phosphorous on the metals composing the alloys is claimed to be two-fold; on the one hand it reduced any oxides dissolved therein, and on the other it forms with the purified metals a most homogenous and regular combination, the hardness, strength, and toughness of which are completely under control. No other metal combines, in so high a degree as phosphor-bronze, the conditions of toughness, rigidity, hardness and great elastic resistance. Thus far phosphor-bronze has been used in the hardware trade only for screws and for lock-springs. In cities wherein soft coal is used, it has been found that brass springs soon lose their elasticity, owing to the action of free sulphuric acid in the air. Careful tests have shown that phosphor-bronze offers twice as much resistance to corrosion by acid as copper. Further experiments have been made, extending over a period of ten months, to determine its durability, when exposed to the weather, as compared with the best brass wire. After lying on the damp ground for that length of time the brass was found to be quite brittle and worthless, while the phosphor-bronze, under exactly similar conditions was practically unchanged. It will be readily seen then how valuable a metal this is. Unfortunately its degree of elasticity is less than that of brass, and the springs required for a lock when of phosphor-bronze are sometimes so large as to be impracticable. It is, however, by all odds the best material for springs and is used by the Hopkins & Dickinson Manufacturing Co. in their best grades of locks.

Aluminium has recently appeared as a possible substitute for bronze. It is a metal not unlike lead or platinum in appearance, but is very light, having a specific gravity of 2.56, equal to about one-third that of steel and one-fourth that of silver.

It is very strong, will not tarnish, and is almost indestructible. It melts at a comparatively low temperature and can be cast with sharp lines. Copper, brass, and bronze are improved in strength, color, and durability by the addition of ten per cent of aluminium. It is, however, a metal of the future and is not yet in the hardware market.



SASH—FASTS.

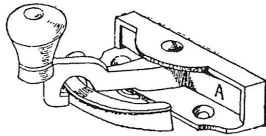


Fig. 183. Sash-fast. P. & F. Corbin.

There are so many varieties of sash-fasts to be considered, that, in order to make the descriptions less confusing, it will be well to classify the sash-fasts according to their most prominent characteristics.

I. *Old Style of plain lever-fast.* This consists of a plain, pivoted bar, attached to the upper sash, with a hook on the end, which works over a catch or raised plate on the lower sash. A knob, often of porcelain, is fastened to the end of the bar. Figure 183 illustrates this type. In the oldest makes of this kind, the lever was simply pivoted on the upper sash, and a knife-blade, slipped between the meeting-rails, could push the lever to one side and unlock the window without the slightest difficulty. In the sash-fast shown by the figure, the lever is made with a broad, flat end, which presses against a strong spring, *A*, at the back. The spring serves to stiffen the action of the lever, which is further protected against intrusion, in some cases, by dovetailing the bottom plates, so that the lever cannot be got at through the joint between the meeting-rails. Varieties of this same form are made with the lever swinging only half around in one direction, the gain thereby being that the back spring can be made longer and stiffer, without increasing the size of the sash-fast.

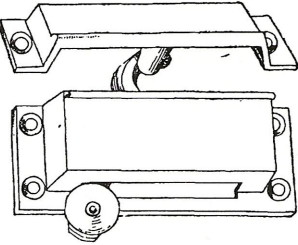


Fig. 184. Sash-fast. Russell & Erwin.

Figure 184 represents a variety of sash-fast, in which the lever is on the lower sash and hooks over an inverted peg on the upper sash. The "Judd" sash-fast, Figure 185, has a

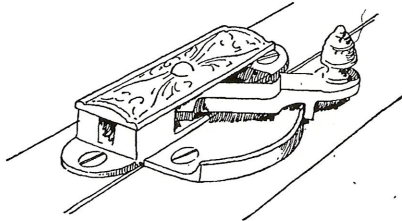


Fig. 185. Judd Sash-fast.

shoulder on the side of the lever so arranged that a knife-blade would catch on it and be broken before the lever could be moved sufficiently to open the window. Figure 186 shows a

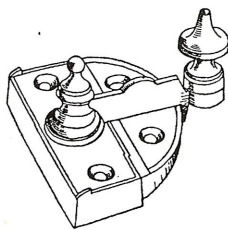


Fig. 186. Sash-fast. Norwich Lock Mfg. Co.

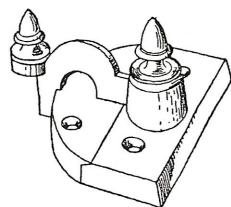


Fig. 187. Sash-fast. P. & F. Corbin.

strong form of sash-fast with no spring of any sort, but with a protection for the lever by dovetailing the plates together, as described in the previous paragraph; while the sash-fast, as indicated by Figure 187, works in exactly the same manner, but the plates are rebated together. Figure 188 is yet another variety, the plates here being not only dovetailed together, but also lipped down into the joint between the meeting-rails. The lever works in the same manner as the first sash-fast noticed.

<sup>1</sup>Continued from page 240, No. 674.

II. *Spring lever sash-fasts.* While some of the forms just described might be classed under this category, none of them actually have spring levers, as the springs are not so arranged as to force the lever open or shut from any position. Figure 189 shows what is known as the ordinary "Boston" sash-fast,

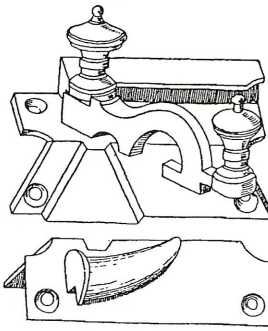


Fig. 188. Metropolitan Sash-fast. A. G. Newman.

which is used a great deal in Boston, and is much liked for its simplicity and sureness of action. This form is, apparently, made by almost every manufacturer of builders' hardware in the country. There is a coil spring around the hub of the lever tending to throw it back, and a simpler spring which bears against the ratchet connection at *A*, so as to lock the lever when it is closed. Hopkins & Dickinson manufacture a variety of this form, in which the spring-catch, *A*, has several cuts or ratchets on its edge, and the catch on the lever is bevelled, so that it will be held by any one of the ratchets. The advantage claimed for this is, that if the lever is drawn around hastily, it will be more likely to catch on the ratchets and be locked, than the ordinary pattern, which has but a single ratchet. This is known as the "Ladd" sash-fast.

The "Boston" sash-fast has to be set pretty carefully in order to be effective, and in the case of very excessive shrinkage, the space between the plates might be so reduced that the ratchet would not hold the lever. Such difficulties would, of course, arise only in a third-rate building. The form is believed by many of the

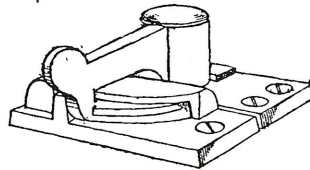


Fig. 189. Boston Pattern Sash-fast.

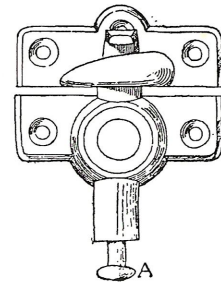


Fig. 190. Sash-fast. Hopkins & Dickinson Mfg. Co.

dealers to be the best in the market, and it surely answers very fully the requirements of a perfect sash-fast.

A scarcely less admirable sash-fast is shown by Figure 190. The lever is on the lower sash, hooking under a tooth on the upper sash, which is bevelled so as to draw the sashes more closely together. A strong spring about the axle of the lever tends to throw it open, while a small bolt, inside the lever, locks into a concealed catch on the post or axle of the lever. The bolt ends in a knob, *A*, and is fitted with a spring which keeps it pressed tightly towards the centre, so that the lever is caught and held when it is turned clear around through 90 degrees. On pulling the knob, *A*, the catch is released and the lever flies open.

Figure 191 illustrates a sash-fast which works in very nearly the same manner as the preceding, except that in order to release the lever the knob is pushed in. The Hopkins &

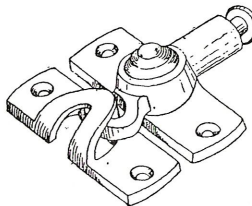


Fig. 191. Sash-fast. Stoddard Lock Co.

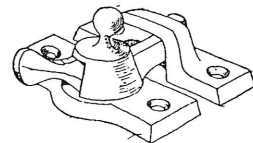


Fig. 192. Favorite Sash-fast. Reading Hardware Co.

Dickinson Manufacturing Company also has a sash-fast which hooks around a pin, like Figure 191, but is otherwise the same as Figure 190. P. & F. Corbin manufacture two forms of sash-fasts which are essentially the same as Figure 190.

III. *Lever sash-fasts with locking lever.* This includes



those in which the lever works without a spring, but is held either closed or open by means of an auxiliary lever. Figure 192 gives one variety of this kind, the lever being pulled down in order to permit the bolt to turn. The locking lever here is held in place by a spring, and catches into a slot in the bed-plate, preventing the lever from being turned. Figure 193

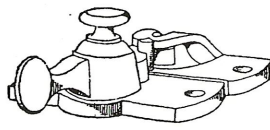


Fig. 193. Sash-fast. Yale & Towne Mfg. Co.

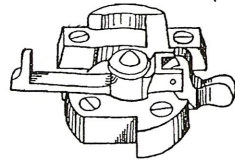


Fig. 194. Morris Sash-fast. Ireland Mfg. Co.

has a lever which works in the same manner as that of Figure 191, except that it has no spring. It is locked in place when turned, by a catch which is released by pressing the knob on top of the hub.

Figure 194 represents a form of sash-fast which has met with considerable favor, as being one of the first which had any right to the qualification of being burglar-proof. The action is perfectly simple. The lever is on the lower sash, and is held either open or shut by a smaller hinged lever which drops by gravity into the rebates of the bed-plate. Figure 195 shows a fast which operates in exactly the same manner, the

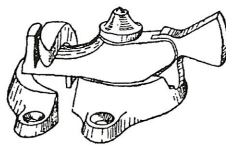


Fig. 195. Triumph Sash-fast. Ireland Mfg. Co.

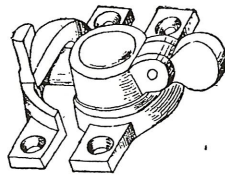


Fig. 196. Sash-fast. P. & F. Corbin.

smaller, gravity lever being raised to release the main lever; and Figure 196 is a type of a number of similar forms manufactured by P. & F. Corbin. The lever in this example is released by raising the secondary lever at the rear.

IV. *Locking lever sash-fasts.* This class includes those sash-fasts in which the lever locks itself when turned. Figure 197 is a form which has been on the market for some time, and

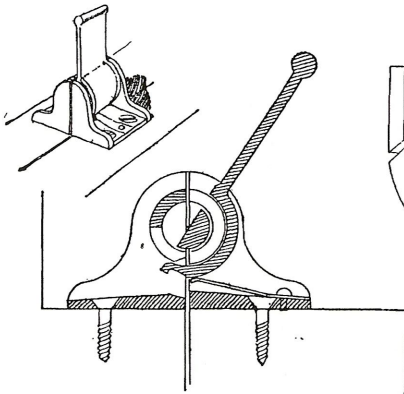


Fig. 197. Mathe's Sash-fast. Nimick & Brittan.

is now comparatively little used, though the chief objection to it is only in reference to its size. It is as near to being absolutely burglar-proof as any form of sash-fast which has been devised. Half the axis, about which the lever is rotated, forms a part of the upper and of the lower sash portion of the fast. The figure shows the position when the sashes are locked, the lever hooking down under both half-axes, and not only drawing the two sashes together, but binding and holding them so they cannot be moved. To unlock the sash, the lever is thrown up to a vertical position.

The "Payson" sash-fast, Figure 198, is very simple and effective, ranking as one of the best in the market. The lever is on the top sash, and locks itself over the opposite post with the help of a small spring-bolt, the knob of which shows at the

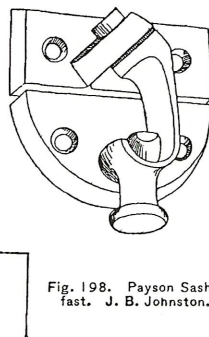


Fig. 198. Payson Sash-fast. J. B. Johnston.

end of the lever. The attachment of the lever is such as to permit it to fold back on the upper sash. This sash-fast is not liable to get out of order, it draws the sashes together, and is as burglar-proof as would ordinarily be desirable. The only objection to it is that the connection between the lever and the locking-post does not allow for much shrinkage in the sash.

V. *"Cam" sash-fasts.* The sash-fasts of which Figure 199 is a type, are quite difficult to represent by a drawing.

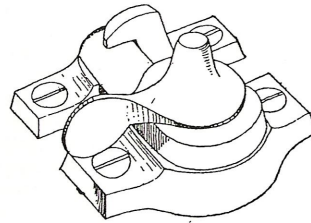


Fig. 199. Ives Sash-fast. H. B. Ives & Co.

The action of the fast is as follows: The levers are fastened to the lower sash. When the upper lever is turned, the lower, or locking lever, is first thrown out until released from the hook on the upper sash, and then drawn around and in toward the hub, until both levers are on a line with the edge of the sash, the upper lever moving through 180 degrees, while the lower lever is moved only 90 degrees. Though the action sounds complicated, the sash-fast is perfectly simple in its construction, and there is nothing about it that can get out of order, or even wear loose, except by such excessive use as would practically never be given it in a house. There are no springs about it, consequently it has no automatic action, and in unlocking, care must be taken that the locking lever is turned clear around, as otherwise it will project beyond the meeting-rail and catch on the sash-muntins. This is really the only objection to it.

Figure 200 is a very similar sash-fast manufactured by P. & F. Corbin. It differs only in the internal, eccentric arrangement. The Reading Hardware Company also manufactures a sash-fast very much like the "Ives."

VI. *Self-locking sash-fasts.* The "Boston" sash-fast flies open of itself, unless properly locked. Many people believe that a sash-fast should lock itself the moment the sash is drawn down, so as to leave no chances of the windows being unlocked, and, accordingly, there are in the market several varieties of self-closing sash-fasts. For general house use, it is believed,

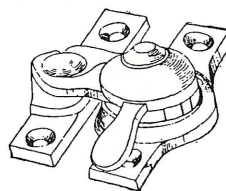


Fig. 200. Sash-fast. P. & F. Corbin.

that such fasts would prove a great nuisance, as the window would, of course, have to be unlocked every time it was to be opened; besides, nearly all of these self-locking appliances are much more liable to get out of order, either through rust or neglect, than the ordinary sash-fasts; still, in some cases, there seems to be a necessity for them.

Perhaps the simplest form of self-acting sash-fast is that illustrated by Figure 201. This consists of a spring bolt, acting not unlike the latch-bolt of an ordinary lock, which flies out whenever the sash is closed. It is mortised into one of the styles of the upper sash, or into the hanging-style, and the bolt bears on a plate on top of the meeting-rail of the lower sash. The figure shows one of the case-plates removed, to illustrate the construction. A very similar fast is shown by Figure 202. This, however, is not self-locking, as the top of the lever must be pressed in to force out the lower portion. Both of these appliances might almost be classed as sash-locks, instead of sash-fasts.

A self-locking fast of the description of Figure 201 has the disadvantage that the bolt must be held back when the window is to be raised, and, if the sash should bind, it is rather awkward to hold back the bolt with one hand and move the sash with the other. There is a device, the Security Self-locking Sash-fast, which obviates this difficulty, this consists of a bolt similar to that of Figure 201, but with a locking-lever which falls out when the bolt is pushed back. This holds the bolt flush with the sash and allows the sashes to be raised or lowered, but when the meeting-rails pass each other, the locking-lever is raised, releasing the bolt, which flies out as soon as the window is closed, thus locking the sashes.

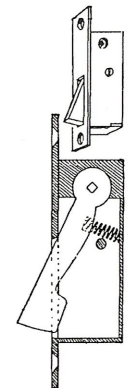


Fig. 201. Ticket-office Sash-lock. Enoch Robinson.



Figure 203 is a self-locking sash-fast on a different principle. The cut shows the lower sash partly raised, the locking portion being attached to the upper sash. When the window is closed the hook, *D*, strikes against the catch, *C*, forcing it away from *B*, until, when the meeting-rails are on a level, *D* is hooked in between *C* and *B*. A spring at *A* keeps the two parts pressed against each other.

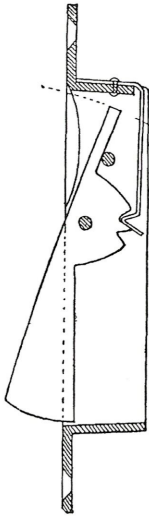


Fig. 202. Sash-fast. E. Robinson.

A very ingenious sash-fast, which works almost entirely by gravity, is shown by Figure 204. The cut shows it in the position it takes when the window is locked. The mechanism is attached to the upper sash. *A* is hung on each side to *B*, which hooks over the post on the lower sash. To open the window, the thumb is placed under *B* and the forefinger on top of *A*. Both pieces are lifted together until *B* assumes a vertical position, and *A* catches over the hook *C*. The sash can then be opened freely. On closing the window, however, the lower rail strikes against a hidden lever or cam at the back of *A*, lifting it from its hold on *C*, so the piece *B* can descend to hook in the position shown by the figure. The only spring used is one which pushes out *B* when *A* is released. This sash-fast is very nicely made, and is about as good a self-locking form as is in the market. It has an added advantage in that it locks itself before the sash is entirely closed, the post, *C*, being double notched on the face so that *A* will slip down and

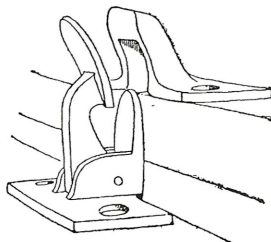


Fig. 203. Shaw's Sash-fast. Nichols & Bellamy, Agents.

wedge the hook *B* when the window is within about a quarter of an inch of being closed. It will be observed that the locking is effected entirely by the piece *A*. *B* is brought over the

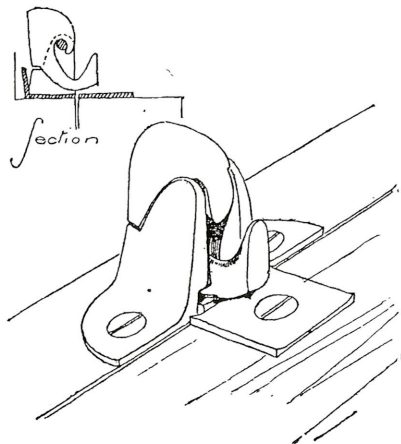


Fig. 205. Byam's Sash-fast. Byam, Stewart & Baker.

hook on the lower sash merely in order to draw the meeting-rails more closely together.

The "Byam" sash-fast, Figure 205, is a very simple device acting entirely by gravity, the central bent lever being so counterbalanced that the lower arm will always project over the lower sash. The section will show how this lever is hung.

VII. Sash-fasts which lock in different positions. The

difficulty with all sash-fasts of this description is that, of necessity, they operate on one side of the window, instead of in the centre of the meeting-rail, and that, consequently, every attempt to open the window when it is locked, wrenches the sash so as to, in time, make it loose in the joints. Also, with nearly all the forms, the mechanism is concealed, so that the sashes are liable to many unnecessary wrenches. The advantages are that the window can be left partly open and still be secured from intrusion, and that, in most cases, either sash can be locked independently of the other.

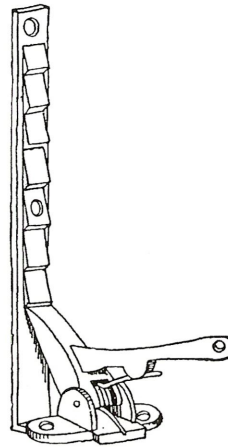


Fig. 206. Sash-fastening. J. B. Shannon & Sons.

Figure 206 illustrates a very primitive appliance, consisting simply of a ratchet rail, with a spring-catch on the bottom sash. Figure 207 shows a more complete form, which is mortised into the face of the hanging-style, the levers working into holes in each sash. The sashes are fitted with other holes on the edges, at intervals, so that they can be locked at various heights. In the cut the section shows more clearly the working. A single spring, coiled about each lever, serves to throw them

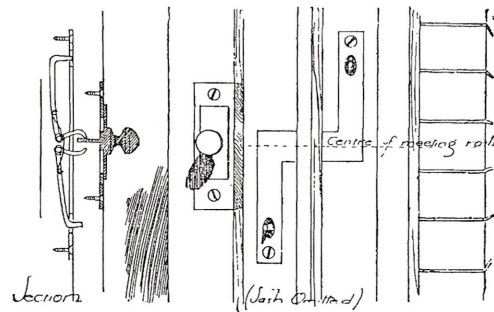


Fig. 207. Timby Sash-fast. Jenkins & Timby.

both out. Pushing up the knob on the inside bead draws back the upper lever, releasing the upper sash. Pushing the knob down releases in the same manner the lower sash.

Figure 208 represents the Atwell sash-fast, which differs

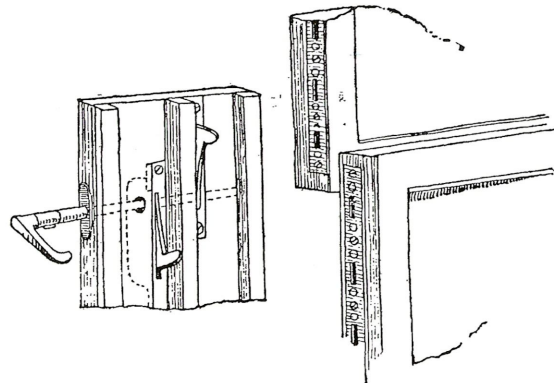


Fig. 208. Atwell Sash-fast.

from the foregoing chiefly in that the levers are worked by a single spindle, coming through the window-frame onto the face of the finish, and so arranged that when the spindle crank is turned up, the upper lever is drawn back without moving the lower, and *vice versa*.

There are a few forms of sash-fasts which will hold the window in any position. Figure 209 is a very common form, consisting of an excentric cam which screws to the face of the sash and wedges against the stop-bead, holding the sash by friction.



Figure 210 and Figure 211 are used chiefly for car work, the former acting in the same manner as Figure 209, while the latter works into slots in the jamb.

The sash-fasts thus far considered include all the principal forms commonly known to the hardware trade, as well as types

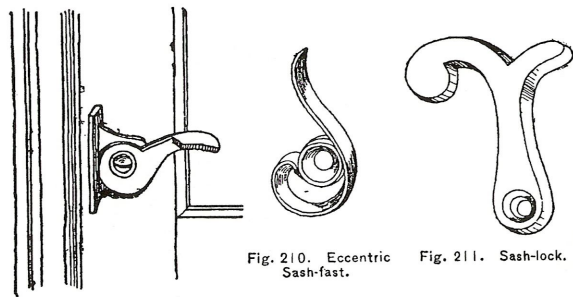


Fig. 209. Brown's Window-lock. S. A. Brown.

Fig. 210. Eccentric Sash-fast.

Fig. 211. Sash-lock.

of many styles which have only limited sales. It would be impracticable to attempt an enumeration of all the sash-fasts which have been put on the market throughout the country, nor would any such list be of great value. The forms discussed and illustrated, will, it is believed, serve every purpose of comparison, and will enable the retail buyer to select to advantage, and to know the worth of what he is choosing from.

BUILDERS' HARDWARE.<sup>1</sup>—XV.

SASH-HOLDERS AND SPRINGS.

THE sash-fasts which have been described up to this point, have been those intended for use in connection with double-hung windows; and, while any of them could be used with a window having double sashes which are simply set in the frame, without weights or balances of any description, there are a few appliances especially intended for windows without weights, which can best be considered in this connection. "Hammond's" window-springs are used so extensively for this purpose that they are almost standard. The springs are simply flat bands secured to the hanging-style and catching in ratchet cuts on the edge of the sash, each spring having a bent handle or thumb-piece coming out in front of the sash. One spring is used for each sash. A different form of spring is shown by Figure 216. This is mortised into the hanging-style and catches into square cuts on the edge of the sash, the thumb-piece showing in front. Figures 217 and 218 show two forms of window-springs on an entirely different principle. The portion containing the spring is mortised into the

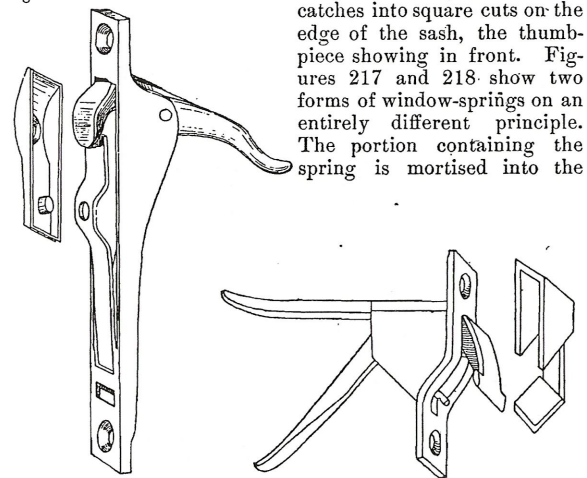


Fig. 216. Window spring. P. & F. Corbin.

Fig. 217. Sweet's Window-spring. Stanley Works.

Fig. 218. Northrup's Window-spring. Stanley Works.

sash, the lever showing in front of the glass. In the first instance the spring is exposed, and catches on posts set in mortised plates at intervals on the hanging-style. In the latter example, the spring is concealed, the end of the lever hooking into plates of the shape shown by the figure, which

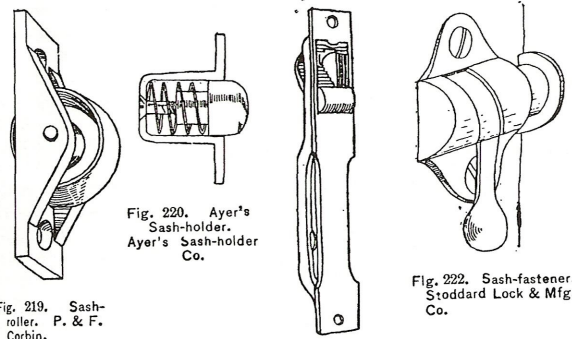


Fig. 219. Sash-roller. P. & F. Corbin.

Fig. 220. Ayer's Sash-holder. Ayer's Sash-holder Co.

Fig. 221. Sash-fastener. Stoddard Lock & Mfg. Co.

Fig. 222. Byam's Sash-balance. Byam, Stewart & Baker.

are mortised into the hanging-style. These springs also serve as holders, the ends of the levers pressing strongly against the hanging-style and holding the sash from slipping.

A sash-holder is something intended to keep unweighted sashes in any given position by friction on the jambs of the frame. Besides the two previous forms, there is a very simple device consisting of a wooden or vulcanized-rubber roller, Figure 219, mortised into the sash and bearing against the window-frame. There is also the "Ayer" sash-holder, Figure 220, better adapted to its purpose than any wheel could be, consisting of a round peg mortised into the sash and pressed constantly against the hanging-style by means of a strong spiral spring. Still another form is shown by Figure 221. This is mortised into the hanging-style, and consists of a small wooden cylinder, or roll, laid loosely in a slot and against a heavily milled surface which prevents it from rolling down. The milled plate is backed by a heavy steel spring. When the sash is lifted, the roll turns easily in the slot; but, when the sash is being lowered, the wooden roll wedges between the milled-plate and the edge of the sash, offering a resistance in proportion to the stiffness of the spring.

Figure 222 illustrates an appliance which can be used as a sash-fastener, but which is intended more especially to bind the sash so it will not rattle. It consists of a plain bolt sliding in a case attached to the window, with a lever working in an oblique slot, so that when it is drawn down, the bolt is

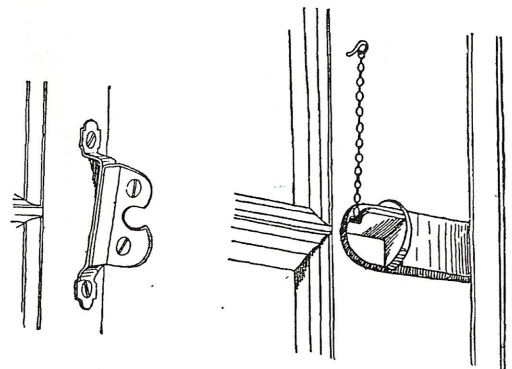


Fig. 223. Clauson's Anti-rattling Wedges. Sise, Gibson & Co.

Fig. 224. Ideal Anti-rattler. American Mfg. Co.

pressed out with considerable force, and holds by friction against the jamb. Figure 223 shows another anti-rattling device, a metal surface on the sash which wedges against an inclined plate on the jamb; and Figure 224 is the simplest of all, a metal wedge, suspended by a small chain attached to the sash, which can be inserted in the joint between the sash and the stop-head.



There is also a very satisfactory and simple device consisting of a plain, hard-rubber button with a milled edge which is screwed on to the bead and against the sash, so as to turn when the window is opened. This is known as "Patten's" window-tightener. It is manufactured by the Portsmouth Wrench Company, and retails at 4 and 5 cents per hundred. The same, or a much similar form, is manufactured by the Ayer's Patent Sash-Holder Company.

"Nelson's Perfect Fastener," is a name applied to a device for screwing the stop-bead to the window-frame; it consists of metal eyelets which are sunk into the bead, with an elliptical instead of round hole to receive the screw. As the longest dimension of the screw hole is in a horizontal direction, the bead can be set so as to permit of a play of quite a quarter of an inch. Such a contrivance must prove a boon to those who are suffering with windows which bind in summer and rattle in winter. The fasteners cost from \$2 to \$3.25 per gross, including either round or flat headed screws.

#### SASH-LIFTS.

Sash-lifts are often omitted from architects' specifications, though they are usually very desirable, and when properly applied, will save a great deal of wear on the sash. The common form of lift is shown by Figure 225. A form which is not quite as convenient to use, though sometimes preferred, is the flush lift, the type of which is similar in the

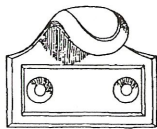


Fig. 225. Ordinary Sash-lift.

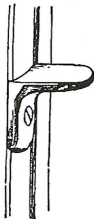


Fig. 226. Byam's Sash-lifter. Byam, Stewart & Baker.

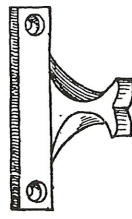


Fig. 227. Sweet's Reversible Sash-lift. Stanley Works.

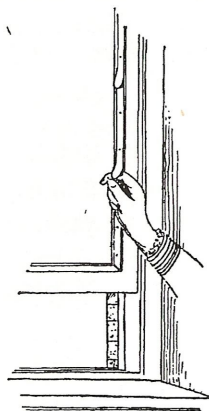


Fig. 228. Wigger's Sash-lifters. Brainerd & Co.

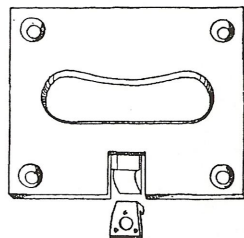


Fig. 229. Flush Sash lift and Lock. Ireland Mfg. Co.

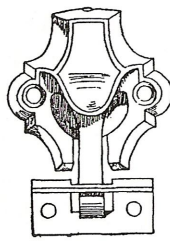


Fig. 230. Sash lift and Lock. Ireland Mfg. Co.

main to Figure 225. Both of these are intended to be attached to the bottom-rail of the lower sash. Figure 226 is a species of sash-lift which is applied over the mouldings of the sash-styles, in the shape of a concave strip of metal, with shoulders at intervals. Figure 227 is in the form of an angle-iron, likewise secured to the sash mouldings, and Figure 228 shows a form which can be applied either over the mouldings or on the face of the sash.

Figures 229, 230, 231 and 232 show four styles of combined sash lift and lock. No. 231 works by gravity. The others are each fitted with a spring which forces out the catch so that it will hold on the sill-plate or catch. Figure 233 shows a very practical form of sash-lift so arranged that by pressing down the lever handle a great lifting power can be applied, sufficient to start and lift a heavy sash, or to start a sash that has become wedged or frozen in. After the sash is started, the lift is in the right position to raise it with ease, and when the window is closed the lift can serve as a lock, by turning a button which will prevent the lever handle from moving.

Figure 234 shows two of the common forms of casement or

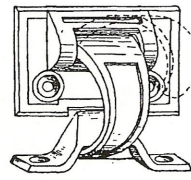


Fig. 231. Sash lift and Lock. Russell & Erwin.

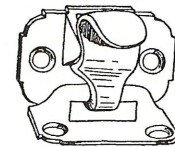


Fig. 232. Sash lift and Lock. P. & F. Corbin.

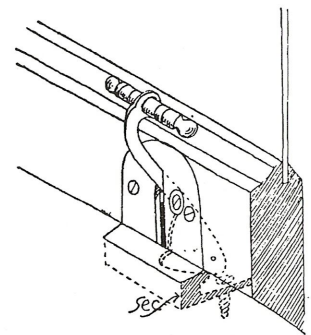


Fig. 233. Anderson Sash-starter.

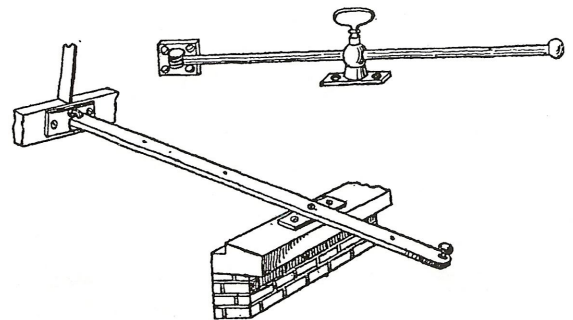


Fig. 234. Sash-openers.

hinged sash-openers. These are best made to order, but can be had in stock, 12, 15 and 18 inches long, and cost from 50 cents to \$1 each, depending on the metal and the finish.

## Amost 100!

The daughter of Mildred Bright, widow of Walter E. Bright, (member # 46), writes that Mildred is "still getting along pretty well. She has arthritis damage in shoulder joints and knees but as her 100th birthday is coming up on Oct. 28, 2007, under the circumstances she is doing great! I thought that there must still be members who knew her and might want to know this." Attached were photos are of Mildred at 98, and of Walter, who passed away in 2000, with his door knob "tree." (We will be happy to email them upon request.)Mildred's address is The Beatitudes Plaza View, 1668 W. Glendale Av, Apt #386, Phoenix, AZ 85021.



## The 2008 Convention

Once again, it is time for the pendulum to swing to the Midwest area for the 2008 Convention. With Illinois being the center of the surrounding States, hopefully our members in IA, WIMN, IN and MI will once again consider putting their collections together for the 2008 Convention in the Chicago area.

Chicago, with its new Millennium Park, the Crown Fountain and Navy Pier has some interesting features to add to this Convention. Chicago greets its visitors with welcome arms with its 700,000 flowers throughout the downtown area – and did you know that Chicago streets are washed every night?

The Nemecks, Loretta and Ray, and the Ottes, Bonnie and Tom, will be your hosts for the 2008 Convention. Feel free to call us with any questions in regard to the Convention, at 630-357-2381 or e-mail [DORNOBLADY@AOL.COM](mailto:DORNOBLADY@AOL.COM).

## STAMPS, FINALLY

By Bob Rodder

Several years ago, the club spent much time and effort to try to get the U.S. Postal Service to see the beauty of postage stamps depicting antique doorknobs. We even went so far as to ask a U.S. Senator to push our case. The USPS didn't agree with us and after a couple years of trying, the matter was dropped. Well, now we can show the Post Office the error of their ways. There is a firm, [photostamps.com](http://photostamps.com), which is a certified USPS vendor and can print custom design postage stamps, such as DOOR KNOBS. All that is required is a computer, access to the Internet, the picture to be printed, and a credit card. The web address is [photostamps.com](http://photostamps.com) and on that site, you can register, open your account and submit the artwork. The stamps are a bit pricier than the garden-variety stamps, but they are a great idea for a gift or to impress other collectors with your knobs. The cost is \$18.99, plus shipping, for a sheet of 20 stamps, which are peel & stick. There are USPS restrictions on the stamp pictures, such as copyright material, sepia tone pix, etc. The web site has a section w/FAQ's and other info that will answer most questions.

### Membership

ADCA,  
Box 31  
Chatham, NJ 07928-0031  
[Knobnews@optonline.net](mailto:Knobnews@optonline.net)  
Phone: 973-635-6338

### Newsletter and Other Questions

[Antiquedoorknobs@comcast.net](mailto:Antiquedoorknobs@comcast.net)  
Phone: 973-783-9411  
Fax: 973-783-8503

### Web Site

[www.Antiquedoorknobs.org](http://www.Antiquedoorknobs.org)

### The Doorknob Collector®



Published six times a year by **Antique Doorknob Collectors of America, Inc.**

P.O. Box 31, Chatham, NJ  
07928-0031

Allen Joslyn, Editor  
Phone (973) 783-9411  
FAX: (973) 783-8503

Annual Membership in US \$25.00  
Foreign rates on request.

Single issue of *The Doorknob Collector*  
\$5.00

Founded Sept 1981, the **Antique Doorknob Collectors of America** is a non-profit organization devoted to the study and preservation of ornamental hardware.

The opinions expressed in this publication are those of the individual writer and do not necessarily reflect those of the Board of Directors of ADCA or the editors.

Any reproduction of material contained in *The Doorknob Collector* without permission of the **Antique Doorknob Collectors of America** is prohibited. All material submitted for publication becomes the property of the **Antique Doorknob Collectors of America**, unless otherwise agreed upon in advance in writing. Material quoted in *The Doorknob Collector* from other sources is subject to the requirements of the originator.