

**Knapp's Dovetailing Machine.**

This machine is called a dovetailing machine, yet, although it makes an admirable substitute for the dovetail joint, the work it performs cannot strictly speaking be called dovetailing. The joint made by it is shown in the details at the bottom of the accompanying engraving. This joint, which is a combination of scollop and dowel work, will, we think, commend itself to all mechanics who examine it, as not only elegant in form and appearance, but strong, durable, and easily put together. It, therefore, matters little what name is applied to it.

The machine which does this beautiful work is extremely neat and compact, only occupying about a square yard of floor room. It receives its power from a belt passing over the tight and loose pulley, A, on the lower shaft, B, on which are a flange pulley, and a twenty-inch pulley, that, in connection with two arbor pulleys, runs a portion of the cutting tools.

On the upper shaft, C, is a pulley, connected by a belt with the flange pulley, and two cams, D and E. The cam, D, moves the tools into and from the stock being worked, while the cam, E, with a pawl attached, plays in a ratchet at the base of the sliding table, F, on which is placed the stock, moving it along to receive the operation of the cutting tools. On this table are placed four pieces of drawer stock, two fronts and two ends, which are securely held in their positions by means of the four compression screws, G G G G. This table carries along the work of two drawers at a time, taking drawers from eighteen inches in depth down; on this table are arranged groove gages, adjustable to the various sizes of drawer.

H is a binder pulley, worked by a cam and spring, which operates to stop the movement of the tool carriage, I; this carriage contains on the lower tier, a hollow augur that cuts the spindles on the fronts and backs of drawers, and on the upper tier, four tools to cut the ends, a bit that cuts the holes in the scollops, followed by two V tools and a gouge that form the scollop. The three latter tools are on an adjustable head, which may be thrown back or entirely removed while the pins and holes are being made for the backs of the drawers, or for any other purpose; these knives are retained in position by a thumb screw.

The cam, D, in addition to moving the tool carriage, I, moves a guide pin in and out of the guide holes at the base of the stock table, F. The tools are all adjustable to suit light and heavy work, by a nut at the back of the tool carriage.

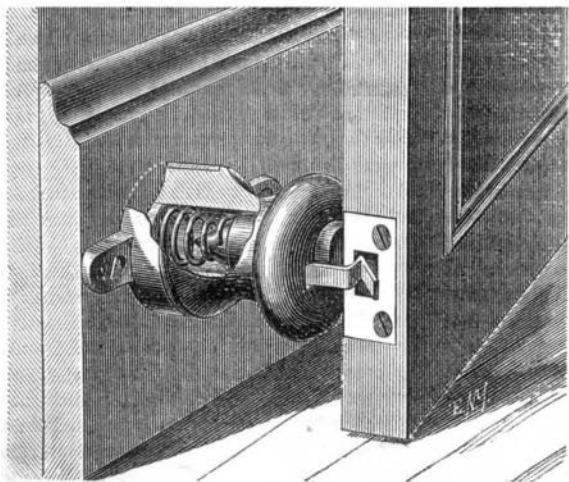
All the parts of the machine are made so that they can be reduplicated, in case of any accident or breakage. The countershafts are of tempered cast steel, and the boxes are all chambered and Babbitted.

It is claimed that an ordinary workman can make from 250 to 300 cabinet drawers per day with this machine, with an expenditure of only fifteen minutes per day in keeping the tools in order.

The machine has, we are informed, been introduced into some of the largest and best furniture manufactories in the country, and is giving the best satisfaction, as attested by many certificates shown us. Parties desiring to witness its operation can do so by calling at the furniture factory of J. T. Allen & Co., 48 Elizabeth street, New York. Further information may be obtained by addressing the Knapp Dovetailing Machine Company, Northampton, Mass.

**IMPROVED DOOR STOP.**

The device herewith illustrated is not open to an objection made to some other elastic door stops, viz., that, when the door strikes the stop, it is thrown back again. In this stop the door is not only stopped without shock, but is caught and held from rebounding.



Its construction will be readily understood on reference to the engraving.

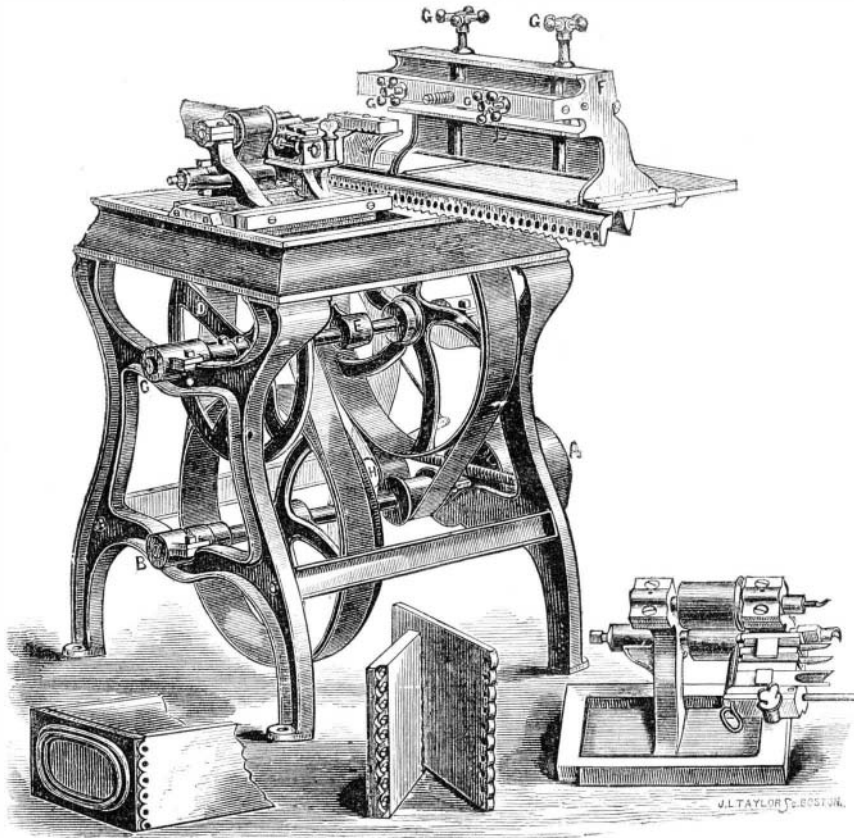
A hollow pillar of wood, or other suitable material, is attached to a metallic foot-plate, screwed to the base board, in such a position that, when the door is swung open, a catch plate, let into the edge of the door, near the bottom, engages with a spring catch which projects from the hollow pillar.

In the hollow of the pillar is a cushion of wood or other suitable material, which rests upon a spiral spring, as shown, a portion of the pillar being broken away to show the arrangement of the interior. This cushion receives the shock, while the catch holds the door from recoiling.

Patented May 31 and December 13, 1870. Address, for further information, Fahrney & Donaldson, Rockford, Ill.

**Proposed Revision of the English Patent Laws.**

It appears, at last, that there is hope that the English patent laws are about to undergo wholesome revision. Mr. Hinde Palmer, Queen's counsel, who is reported to be a friend of the working man, has taken the business in hand, and proposes to bring in a new bill, based upon sounder principles. It is expected that Mr. Macfie and Mr. Samuel



KNAPP'S DOVETAILED MACHINE.

son, who go for the get-all-for-nothing principle, will do all they can to defeat Mr. Palmer's reforms. The patent system in England ought to be amended, so as to recognize the primary right of the inventor to take the patent, and thus put a stop to the legal stealing of other men's ideas.

**JOHNSON'S IMPROVED ADJUSTING PLUMB AND LEVEL.**

The quick and accurate adjustment of a plumb and level is something which will appeal to the common sense of every mechanic as a great convenience. The level shown in the engraving has attached to it a provision for leveling which is both extremely simple and accurate.

The spirit glass in the level is set in an iron case, which is connected to the top plate by means of the screws, which pass through a flange at each end into a brass nut below. A spiral spring surrounds each screw, and the adjustment or inclination of the level is secured by contracting or expanding either one by means of the screw.

The level can also be adjusted by means of the long spiral springs, so as to work at an incline of a considerable angle.

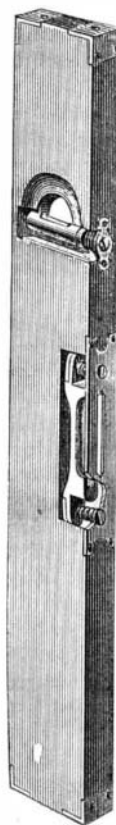
The plumb tube is connected with a pivoted arrangement, which enables it to be adjusted by means of a center screw in the face plate, on the edge of the level. Therefore, to adjust plumb, it is necessary to simply turn the center screw to the right or the left, as the case requires.

The action of the center screw on the plumb tube operates to move it radially about the pivot, a very slight movement of the screw being sufficient to perform the adjustment.

The length of the springs enables the user of the instrument to set his own glasses easily and perfectly, while the liability to breakage is decreased.

A point of superiority claimed for this improvement, besides those already mentioned, is, that the iron case slides on screws which are threaded in brass nuts below. This enables the box to move through greater space, and does not strain the thread of either screw or nut; while brass will hold a stronger thread than gray cast iron.

This tool is more especially designed for machinists and other mechanics requiring great accuracy in levels and plumbs. In the old way of setting the glasses in plaster, no matter how perfect the level may be at first, there is a liability



to some change by shrinkage in the wood, which impairs the extreme delicacy of the instrument, so that while it is perhaps sufficiently accurate for ordinary kinds of work, it will not do for the leveling of very nice machinery, etc.

Patented Jan. 20, 1868. For further particulars address William Johnson, Hedenberg Works, Newark, N. J.

**How to Keep a Situation.**

The following bit of good advice is from the *Working Man*, and is worthy the attention of all our readers:—

Lay it down as a foundation rule, that you will be "faithful in that which is least." Pick up the loose nails, bits of twine, clean wrapping paper, and put them in their places. Be ready to throw in an odd half hour or hour's time, when it will be an accommodation, and don't seem to make a merit of it. Do it heartily. Though not a word be said, be sure your employer will make a note of it. Make yourself indispensable to him, and he will lose many of the opposite kind before he will part with you.

Those young men who watch the time to see the very second their working hour is up—who leave, no matter what state the work may be in, at precisely the instant—who calculate the extra amount they can slight their work, and yet not get reproved—who are lavish of their employer's goods, will always be the first to receive notice that times are dull, and their services are no longer required.

**Method of Tinning Copper, Brass, and Iron in the Cold and without Apparatus.**

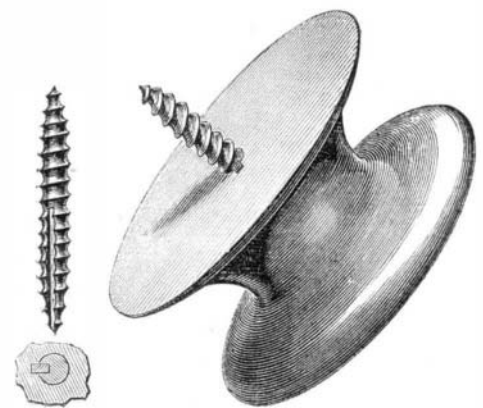
F. Stolba contributes to *Dingler's Polytechnic Journal* the following method, of performing the above processes, which we find condensed in the *American Chemist*: The requisites for accomplishing this object are: 1st. The object to be coated with tin must be entirely free from oxide. It must be carefully cleaned, and care be taken that no grease spots are left; it makes no difference whether the object be cleaned mechanically or chemically. 2d. Zinc powder; the best is that prepared artificially by melting zinc and pouring it into an iron mortar. It can be easily pulverized immediately after solidification; it should be about as fine as writing sand. 3d. A solution of protochloride of tin, containing 5 to 10 per cent, to which as much pulverized cream of

tartar must be added as will go on the point of a knife. The object to be tinned is moistened with the tin solution, after which it is rubbed hard with the zinc powder. The tinning appears at once. The tin salt is decomposed by the zinc, metallic tin being deposited. When the object tinned is polished brass or copper, it appears as beautiful as if silvered, and retains its luster for a long time. The author uses this method in his laboratory to preserve his iron, steel, and copper apparatus from rust. This method would become of great importance if the tinning could be made as thick as in the dry way, but this has not as yet been accomplished.

**IMPROVED METHOD OF ATTACHING KNOBS TO SCREWS.**

Mineral knobs are usually made with screws inserted while the material, of which the knobs are made, is in a plastic state. Wooden knobs, are, however, usually attached to drawers or doors by passing a screw through the drawer or door from the inside into the knob, which is awkward; or by passing the screw through the knob from the outside, which is unsightly. It is obvious that wooden knobs, provided with fixed screws like porcelain knobs, would be much more convenient in use.

This is accomplished in the simple and useful invention illustrated herewith. The screw is made with a gimlet point



at each end, and has a key seat cut in it from the middle to the end which enters the knob. The end having the key seat is then inserted in the knob; and a brad, being driven down into the wood so that it partially enters the wood and fills the key seat, effectually holds the screw, so that it may be screwed into a drawer in the same way as porcelain knobs are now inserted.

The manufacture of the improvement, except the driving of the brads, may be done entirely by machinery, and the inventor has, by this means, undoubtedly opened the way to a much more extended use of wooden knobs than has hitherto been the case. Patented May 5th, 1868. Address, for further information, C. H. Thurston, Marlboro', N. H.