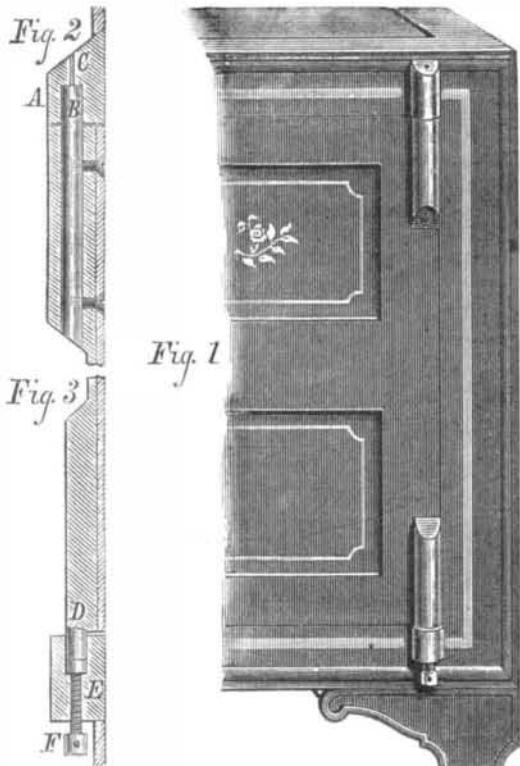


STEVENS' IMPROVED HINGE.

The invention represented in our engraving is a hinge, which is shown applied to the door of a safe, for which purpose it is especially well adapted. Upon the casing or body of the safe is cast, or otherwise attached, a socket, A, into which passes the pin, B. The latter is held in place by the screws shown in the sectional view, Fig. 2, and which have their heads within the safe. In order to remove the door, these screws are taken out; and a punch, pushed down the oil hole, C, speedily forces out the pin, B, in case the same should stick. The top of the door is then moved out a little, when the lower hinge, D, is readily lifted out of its socket, E. F is a set screw, provided to prevent the door from sagging as the tenant of the lower hinge wears away.

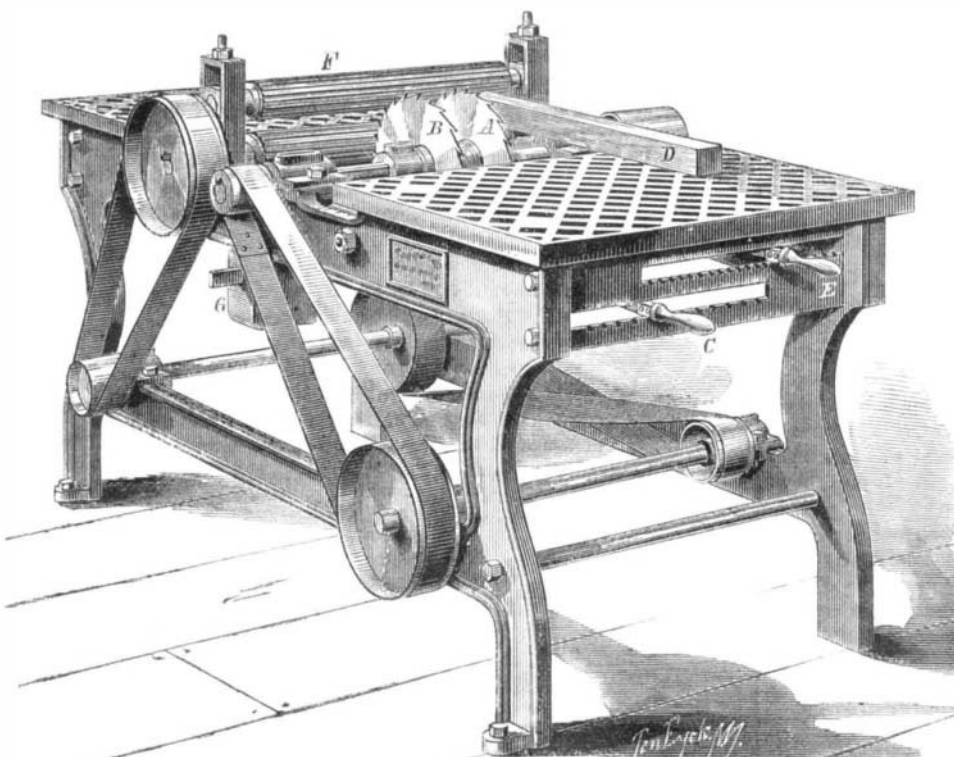


This invention is quite simple and easily applied, while it appears to be substantial and secure. Patented December 30, 1873, by Mr. Wm. F. Stevens, of Melrose, Mass., who may be addressed for further information.

IMPROVED PATENT GANG SAW TABLE.

This is an invention specially adapted to meet the wants of users of flooring machines, who have found difficulty in supplying material, sawn in strips from mixed widths of boards, fast enough to keep the floorer in operation. A good machine of the latter description should plane and match from ten to twelve thousand feet, broad measure, of four to six inch flooring, in ten hours; but it is hardly possible for a man to saw more than from six to eight thousand feet, into strips, in the same time and over a single saw. Hence it is either necessary to buy strips prepared at the saw mill (and these are rarely accurately sawn), have two saw tables for the floorer, or else not work the latter up to its full capacity, none of which are economical operations. Made on an ordinary saw table, strips are produced in varying sizes; and perhaps after some hours work, not enough of any one size can be sorted out to keep the matching machine at work, thus involving changing the apparatus so frequently as to prevent its performing its full amount of labor.

The device illustrated in the annexed engraving is claimed to meet the requirements above indicated. It is able to provide a supply sufficient to keep two matchers constantly at work. Two saws are used for slitting the lumber into strips of suitable width, one of which, A, is secured upon the arbor rigidly, and the other, B, is attached to a sliding and revolving sleeve and collar. This sleeve is provided with grooves to receive Babbitt metal, and works within a journal box which slides with it, and, besides, has a longitudinal channel to receive the feather by which it is made to revolve with the shaft while still sliding freely along the same. The lower part of the box is provided with a downwardly extending arm, at the end of which is an eye to receive a guide rod, which extends transversely across the machine. A mortise is made through the arm, between the box and the eye, to receive a lever which is pivoted at one end to the frame and terminates at the other with a handle, C, convenient to the operator. By means of this lever the arm, and with it the sliding sleeve and saw, B, is moved nearer to or further from the fixed saw, A, in order to govern the distance between said saws, and hence the width of the strip. At D is a gage which may be adjusted to any desired distance from the screw, A, by means of the hand lever, E which communicates with a sliding sleeve traveling on a guide rod, which sleeve is suitably connected with the gage. The carrying or guide rollers, shown at F, grasp the sawn



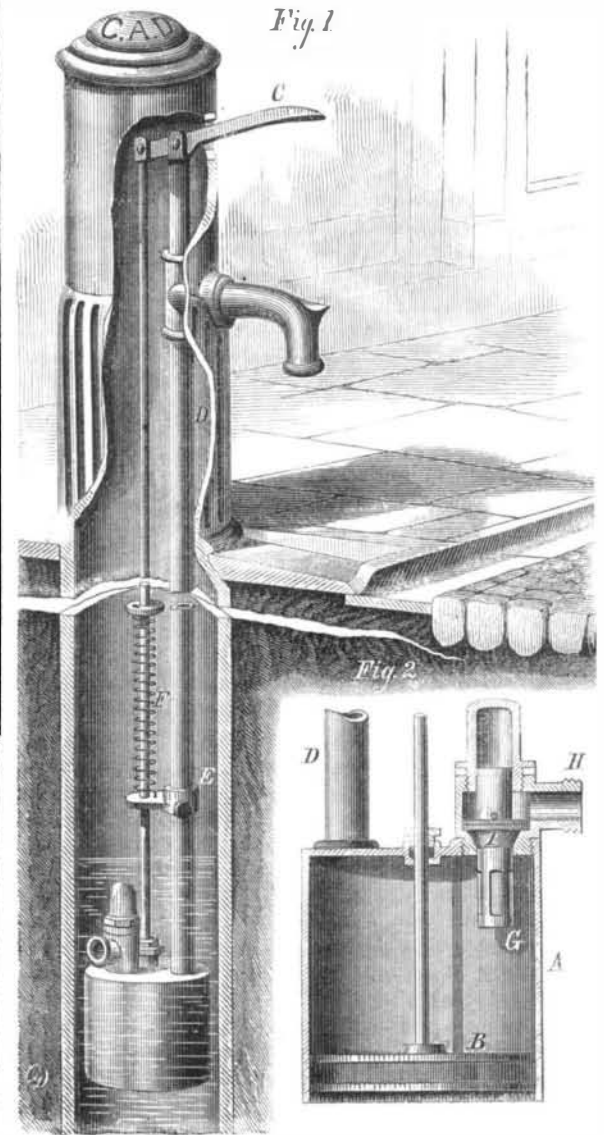
CARROLL'S PATENT GANG SAW TABLE.

The fibrous state of iron is not a normal and regular one. All crystalline iron, if the crystals are not too hard, breaks with a fibrous structure, if time be given, in the breaking, for these crystals to be drawn out into fibers. Iron which is fibrous is only iron in which the primitive crystals, surrounded by very thin films of slag—and thus separated from each other—have not been welded together during the rolling, but have been elongated into wires. A bar of such iron resembles a bundle of wires in its resistance to fracture, but it breaks with a granular fracture when exposed to a transverse blow, suddenly applied.—M. Jordan.

For a marking fluid, use coal tar dissolved in naphtha.

DAVIS' IMPROVED HYDRANT.

The hydrant represented in the annexed engraving is claimed to prevent freezing and waste of water. It is of durable construction, and is self-closing. The valve is not liable to become choked with dirt, as the passage of the water



serves to clean the orifice, while the pressure of the fluid keeps the valve down.

A is a cylinder or chamber, sunk in the well and provided with a piston, B, the rod of which connects with the handle, C. D is the eduction pipe, having a suitable discharge nozzle, as shown. To this pipe is attached a guide plate, E, Fig. 1, which may be adjusted to various elevations by means of a clamp screw. On the piston rod is a fixed disk, between which and the plate, E, a spiral spring, F, is extended. The latter, being stretched when the handle is depressed and the piston, B, raised, will retract and throw down the piston into place as soon as the force on the lever is remitted. G, Fig. 2, is a gravity valve, having a subjacent slotted tube and an upper head working in a guide. As the piston rises, the valve is carried up until the slotted tube receives, through the inlet pipe, H, a supply of water, which is then forced up through the eduction tube, D, and discharged. The chamber, A, is thus kept always in a condition to receive the water that may be left in the tube, D, after the flow has ceased from the spout.

I is a leather or flat flexible ring that is secured to the valve by a metal ring or pin, and which acts, in case of gravel or other obstruction settling between the valve and its seat, as an auxiliary valve, being forced by the pressure of the superincumbent water to cover any crevice made and to form a watertight joint.

Patented through the Scientific American Patent Agency, April 28, 1874. For further particulars regarding sale of patent rights, licenses, etc., address the inventor, Mr. John T. Davis, 1,212 Eleventh street, Southeast, Washington, D. C.

WIRE WORMS.—These are found in the greatest quantities in fresh new loam, just brought from the field, and such soil, when used for valuable plants, should be carefully examined, and the wire worms crushed; their brownish red bodies are easily seen. Mr. Tillary writes to the *Garden* that slices of potatoes or lettuce stems will likewise catch them where they are numerous. The slices should be placed under ground, and then frequently examined. He saved a bed of seedling gladioluses that were planted in some new loam, which, he found afterwards, swarmed with wire worms, by placing slices of potatoes and lettuce stalks in the ground after he found that some of the plants were flagging.