

J. O'Kane,

Making Hinges,

No. 63,742,

Patented Apr. 9, 1867.

Fig. 1

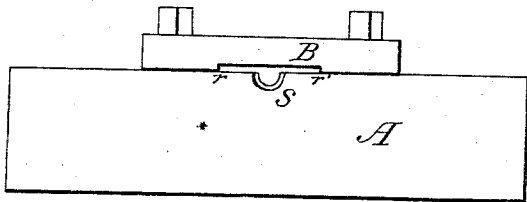


Fig. 2

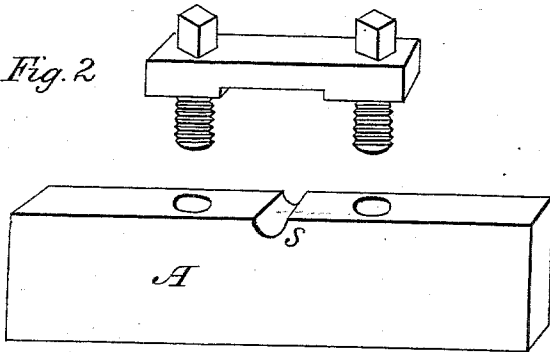


Fig. 3

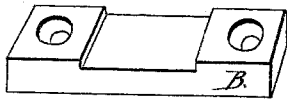
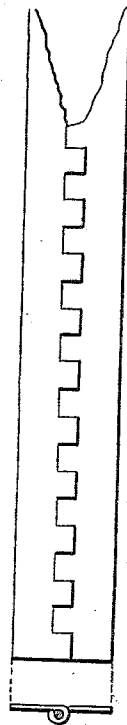


Fig. 4



Witnesses.

Elisha Forbes
Henry E. Abbot

Inventor:

James O'Kane

United States Patent Office.

JAMES O'KANE, OF NEW YORK, N. Y.

Letters Patent No. 63,742, dated April 9, 1867; antedated April 1, 1867.

IMPROVEMENT IN DIES FOR FORMING HINGES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES O'KANE, of the city, county, and State of New York, have invented, made, and applied to use a new and useful Tool for Closing and Tightening the Joints of Hinges; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, of which—

Figure 1 is a front elevation of my improved tool for tightening the joints of hinges.

Figure 2 is a front view in perspective of plate A with its circular groove S, hereinafter described.

Figure 3, a front view in perspective of cap B with its channel, hereinafter described.

Figure 4 represents a small strip of the blank as prepared for operation with this tool.

Similar marks of reference denote the same parts.

This tool is more especially designed to be used for closing and tightening the joints of hinges when made first in long strips, to be cut apart into the proper lengths; and the nature of the invention consists in providing a draw-plate with slits or channels on each side of and communicating with a circular groove, said slits or channels being designed for the reception of the wings of the hinge or strip, and the circular groove for the purpose of closing and tightening the joints of the same as it is drawn through the plate.

The tool is made of a piece of steel of the usual form of the draw-plate. As near the upper edge as practicable a conical hole is perforated transversely through the plate, being, at the outside, a little larger than the joint of the hinge or strip previously to its being drawn through, and at the inside a little smaller. A portion of the upper edge of the plate is filed away, sufficient to remove a segment of the hole equal in thickness to the metal of the hinges, so that if a piece of the metal of equal thickness were laid on the edge of the plate its upper surface would form a tangent to the original hole at its smallest part, *i. e.*, at the inside of the plate. The form of the tool, after this process, is shown in the drawing at fig. 2, by the plate A, with its groove, S. The cap B, fig. 3, is equal in width to the thickness of the plate; and on the side contiguous to the plate a channel is cut into the cap, corresponding in width to the width of the hinges when open, and in depth to the thickness of the metal of same. The cap is firmly fitted on to the edge of the plate with screws, as shown in fig. 1 of the drawing, and in such a position that the aforesaid channel will leave two slits or slender openings, *r r'*, (fig. 1,) one on each side of the groove, of equal length, measuring from a plane passing through the axis of the original hole, and perpendicular to the edge of the plate. It will be seen that the slits, in connection with the groove, form an opening corresponding to a section of the strip previously to its being drawn through the plate, except that the groove is a little smaller at the inside and a little larger at the outside, as explained above. All sharp corners and edges that would cut the metal in its passage through are carefully smoothed away.

To use this tool, a portion of the joint of the strip is first cut away from the end, leaving the end forked, as shown in the drawing, fig. 4. This forked end is inserted into the plate, the joint entering a little way into the conical hole, and the forked ends projecting through the slits on the inside. These ends are grasped by the drawing-dogs, and the whole drawn through the plate, when the inclined and converging sides of the tapering groove will compress the joint closely and tightly round the pin. If the pin is very loose in the joint, so that it will be necessary to contract it considerably in size, a series of openings should be provided, with the grooves gradually diminishing in size, so that the contraction may be very slight at each draught; otherwise, if it is attempted to contract the joint too much at one draught, the knuckles of the joint may be dragged from their position.

Sometimes the hinge is constructed with a slight ridge on the back as well as on the front, the wings forming a secant instead of a tangent to the cylindrical joint. The opening in the plate may be readily made to conform to this shape by removing a greater segment of the original hole in the plate and filing a groove in the cap of such a depth and shape that when the cap is fitted on its groove will form the complement to the original circular hole. Appropriate channels are then cut into the cap for the reception of the wings in the same manner as before. It is manifest that in this way any desired modification in the position of the slits with respect to the groove may be readily secured, the nature of the tool and its actions remaining essentially the same.

What I claim as my invention, and desire to secure by Letters Patent, is—

The two communicating slits or channels *r r'*, arranged with reference to the circular groove S of a draw-plate, as and for the purpose set forth.

In witness whereof I have hereunto set my signature this fourth day of May, 1866.

JAMES O'KANE.

Witnesses:

ELISHA FORBES,

HENRY E. HOLLOWAY.