

HORACE C. BRADFORD.

Improvement in Tools for Setting Hook Buttons.

No. 120,703.

Patented Nov. 7, 1871.

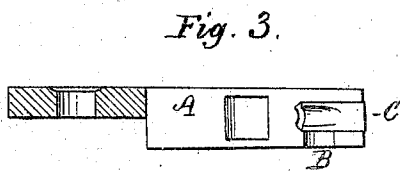
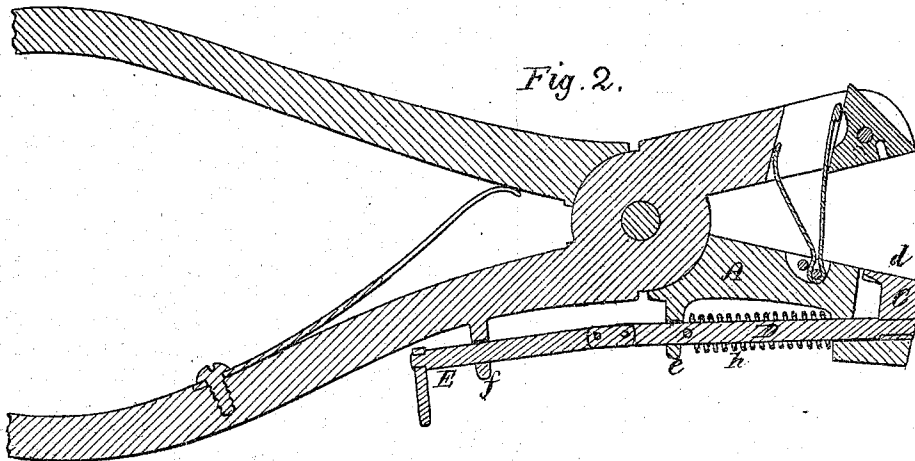
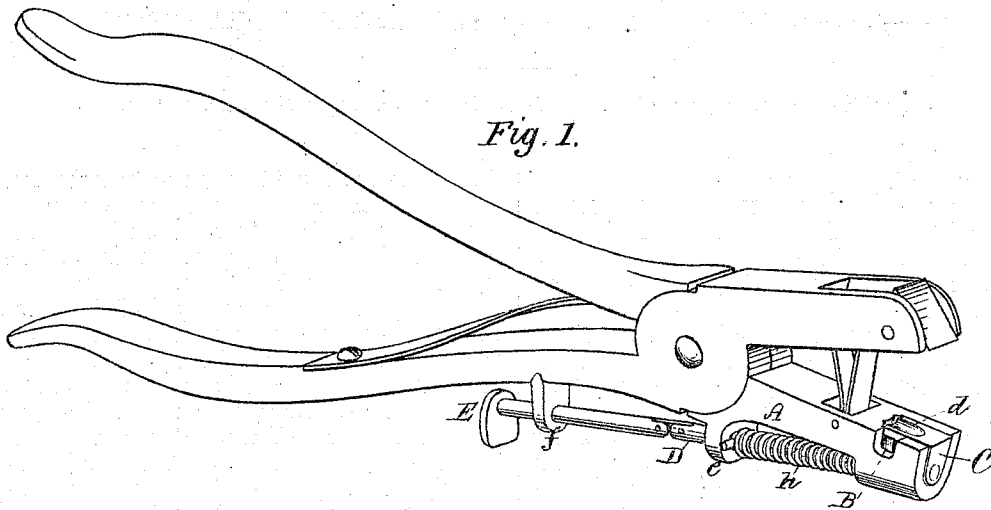


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

HORACE C. BRADFORD, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN TOOLS FOR SETTING HOOK-BUTTONS.

Specification forming part of Letters Patent No. 120,703, dated November 7, 1871.

To all whom it may concern:

Be it known that I, HORACE C. BRADFORD, of the city and county of Providence and State of Rhode Island, have invented a new and useful Improvement in Tools for Setting Hook-Buttons.

My invention relates to tools for setting in any suitable material such combined hooks and buttons as were patented by W. H. Shurtleff, June 5, 1866; and consists in a novel device for seizing and holding the neck or shank of the button-hook, during the successive operations necessary for setting the hook in any material with which it is to be employed; and I do hereby declare that the following specification, taken in connection with the drawing furnished and forming a part of the same, is a clear, true, and exact description of my invention as applied to a hand-tool, and in combination with one kind of setting mechanism.

Referring to the drawing, Figure 1 represents a hand-tool in perspective, with my novel holding device. Fig. 2 represents a portion of the tool in longitudinal vertical section. Fig. 3 represents in top view the inside of the jaw of the tool which contains my novel holding device. Fig. 4 represents a hook-button.

This "hook-button," sometimes called "button-hook," may be briefly described as a combined hook or button, provided with three prongs which stand at right angles to the plane of the opening in the hook. In describing my invention I designate that portion of the hook-button which connects the button face with the plate from which the prongs project, as the shank or neck of the hook. The tool with which, for the purposes of illustration, I have combined my invention, was patented by Esser and Steere, May 19, 1868; and it is only necessary to briefly state that it consists of a pair of pinchers, one jaw of which is provided with a revolving triangular block, the faces of which are in regular order drilled to receive the prongs, provided with a concave recess for bending the prongs inward, and a plane surface for clinching. The opposite jaw is provided with a retaining slot for receiving a button-hook in proper position. My improvement is in the clamping device for holding the hook while being set.

In the drawing, A is the jaw of the tool to which the holding device is attached. In this instance, the outer end of the jaw is slotted vertically and provided with a lateral orifice, B,

which enters the said slot near its inner end from one side of the jaw. C is the clamp or holding device. It is fitted to slide back and forth in the slotted jaw. Its operative or holding end consists of a thin projection, *d*, the end of which is slightly concave laterally, and fitted to enter the space between the under side of the button or hook and the top of the shank-plate. The inner end of the recess in the jaw is slightly convex, and corresponds with the concavity described in the end of the clamp. D is a stem attached to the clamp C; it extends backward along the outside of back edge of the jaw A, and beyond the pivot-joint of the pinchers through a guide, *e*. On this stem is an expansive spiral spring, *h*, so set that the tendency is to draw the clamp C into the slot and cause it to bear against the inner end of the slot, bringing the convex and concave surfaces into close relation with each other. E represents a thumb-piece, attached by a hinge-joint to the end of the stem D, and provided with a guide, *f*, projecting from the edge of one of the handles of the tool. By pressing the thumb-piece longitudinally the clamp is opened, and upon removing the pressure the clamp is closed by the expansive action of the spring *h*.

A hook-button inserted with head down, (either sidewise into the aperture B, or vertically into the space in the slot resulting from the wide opening of the clamp,) is held firmly by the thin projection *d* against the inner end of the slot or recess. Clamps acting upon the edges of the shank of the hook have generally been employed, and specimens of such may be found in my automatic machine for setting button-hooks, patented June 14, 1870. Clamps have also been heretofore used which would engage with the front and rear of the shank. In all such cases, however, prior to my invention, the seat which enters the button or lacing space between the under side of the button or hook and the top of the shank-plate has been fixed or stationary, and the sliding-clamp has engaged with the rear side of the shank, forcing the button into its seat, and holding it against the edge of the seat. With such clamps it frequently will occur that the hook will swing more or less to the right or left. In my improved clamp the projection *d* fills the vertical lacing-space, and sustains the hook from the time it is dropped by the feeder until it is forced against the end of the slot, and also until the setting

operation is fully completed; in the former case, after a hook-button has been set the hook must be drawn from its stationary seat, while with my clamp the hook remains stationary, and the seat is withdrawn from it. With my improved clamp it is practically impossible to present a hook to the setting mechanism in any but a proper position.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The movable retaining-clamp C, provided with a projection, *d*, which is fitted to enter the

space between the under side of the hook or button and the top of the shank-plate, and arranged to sustain the hook during the setting operation, substantially as described.

2. The retaining-clamp, provided with a stem, spring, and thumb-piece, substantially as described.

HORACE C. BRADFORD.

Witnesses:

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(23)