D. HEATON.

Setting-Instrument for Attaching Buttons, &c.

No. 160,056. Patented Feb. 23, 1875.

Fig. 1.

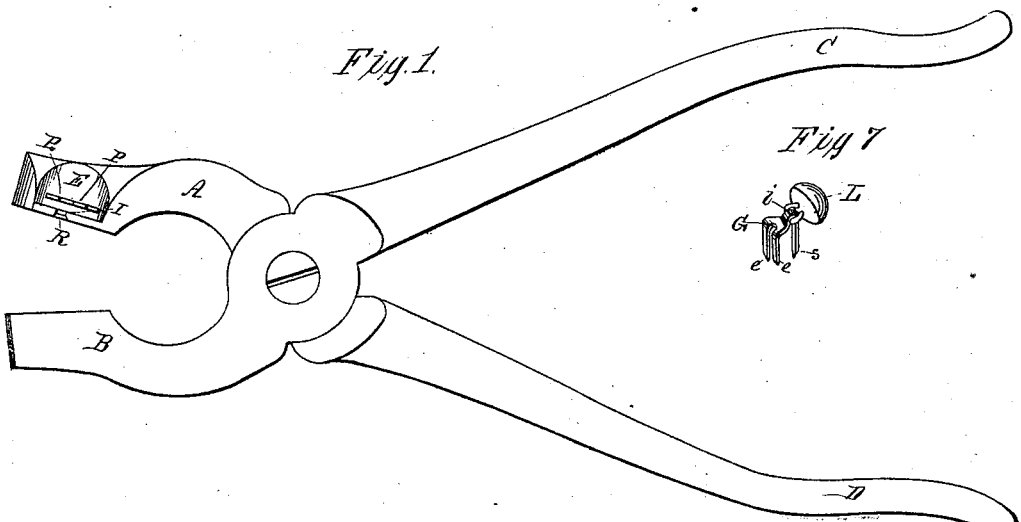


Fig 7

Fig. 2.

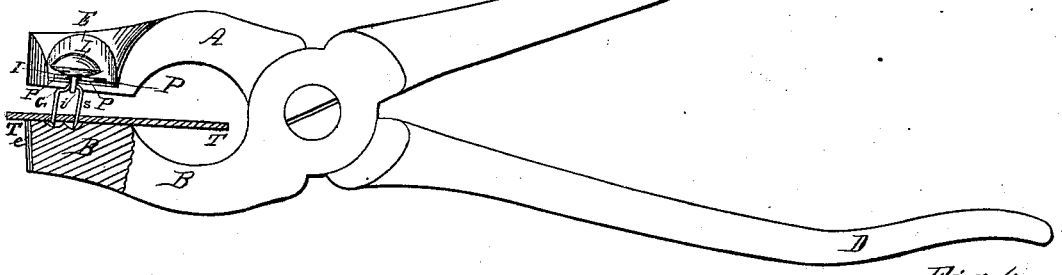


Fig. 3.

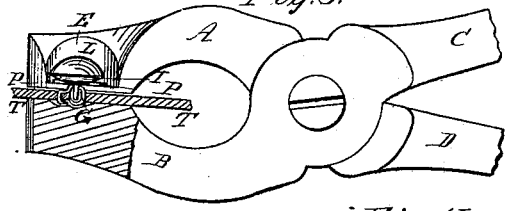


Fig. 4.

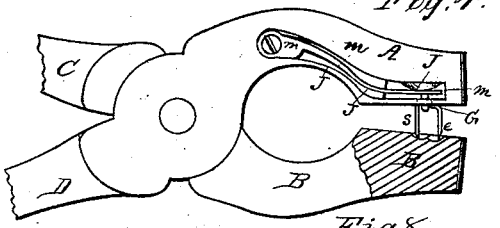


Fig. 5.

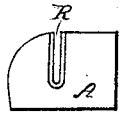
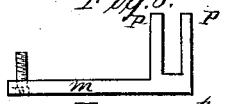


Fig. 8.

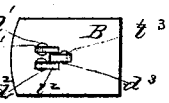


Witnesses

Isaac A Brownell

Edmund Bowsey

Fig. 6.



Inventor

David Heaton

UNITED STATES PATENT OFFICE.

DAVID HEATON, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN SETTING-INSTRUMENTS FOR ATTACHING BUTTONS, &c.

Specification forming part of Letters Patent No. **160,056**, dated February 23, 1875; application filed December 10, 1874.

To all whom it may concern:

Be it known that I, DAVID HEATON, of the city and county of Providence and State of Rhode Island, have invented a new and useful Improvement in the Setting-Instrument for Attaching Buttons, Studs, &c., by prongs, to wearing apparel, of which the following is a specification, referring to the accompanying drawings making part of the same, in which—

Figure 1 is a side elevation of my improved setting-instrument. Fig. 2 is a like view and cross-section (in part) of the same. Fig. 3 is similar view of the same, showing the button-fastener properly set. Fig. 4 is an elevation and section of the opposite side of the setting-instrument. Fig. 5 is a plan of the face of the upper jaw A of the setting-instrument. Fig. 6 is a plan of the face of the lower jaw B of the setting-instrument. Fig. 7 is a perspective view of the said button and fastener united. Fig. 8 is a plan of the platform-spring *m* detached from the upper jaw A.

Similar letters mark like parts in all the figures.

The said setting-instrument is designed to attach buttons, studs, &c., having penetrating-prongs for fastenings, to shoes and other wearing apparel, by putting the prongs through the material and clinching their ends on the back side of the same, the object being to simplify the construction of the instrument, and the operation of setting or attaching the buttons, or other articles of the kind, in order to render the use of the same easy and effective in the hands of unskillful persons, as well as others.

As herein shown, the setting-instrument is arranged to set or attach the common shoe-button, with a wire eye or shank, united with a metallic fastener having penetrating-prongs for passing through the material, and clinching underneath; and the plan adopted for said instrument is that the button shall be properly held in one jaw of a pair of pinchers, while the other jaw is so shaped as a die that, by the single operation of shutting the two jaws together, the fastening-prongs are made to penetrate the material, and clinched flatly on the back side of the same.

The first part of my invention relates to the means by which the button and its metallic fastener are held in one jaw of the said instrument preparatory to being set in the material of the apparel; and this consists of a spring with a slotted platform at its free end to receive the button, and an arched slot in the face of the jaw to receive the connecting part of the metallic fastener.

The second part of my invention relates to the means by which the fastening-prongs of the button, &c., are driven through and clinched against the material; and this consists of a die wrought in the face of the opposite jaw of said instrument, in the proper form to receive the points of the said prongs, and to deflect and bend the same together against and into the material, by shutting the two jaws together.

The two jaws A and B of the setting-instrument have each handles C and D, by which they are operated by the human hand, in a manner well known. The upper jaw A is formed with a recess, E, opening from one side, for the reception of the button-head L; also with a lateral opening, I, completely through said jaw, in extension of a recess, J, on the opposite side, containing a spring, *m*, shown in Figs. 4 and 8, the free end of which passes through the opening I, and forms a slotted platform, P, upon which the button-head rests, as shown in Figs. 2 and 3, with the wire eye or shank of the button extending downward through the slot in said platform. The face of the jaw A is formed with a slot, R, Figs. 1 and 5, for the reception of the connecting part *i* of the metallic fastener G, said slot being concaved or arched in the face of the jaw to correspond with the shape of the connecting part *i*, as shown in Figs. 2 and 3. The button-fastener G is shown clearly in Fig. 7. It is cut and bent in form from sheet metal generally. In this instance it has three fastening-prongs, (two, *e*, at the front, and one, *s*, at the rear,) and these are beveled-pointed at the sides or edges, and thinned flatwise from the outside, as shown; and these prongs are driven through the material by pressing the two jaws together, in a manner well known, but with better effect by means of the die B, Figs. 2 and 6, in the lower jaw. This die, it will be seen, is composed of three circular cavities or countersinks, d^1 d^2 d^3, and three parallel concave grooves, t^1 t^2 t^3. The three cav-

ities receive the three pointed ends of the prongs *e e* and S, in driving the same through the material, by shutting the jaws together, and facilitate the penetration of said points. The concaved grooves extend from these cavities, past each other, and deflect the prongs in opposite directions past each other, and bend and clinch them flatly against the back side of the fabric T, as shown in Fig. 3. The rear prong S, by reason of the thinning of the metal at the point, and the shape of the concave groove t^3, into which it is pressed, becomes curved at its end like the claw of a bird, and in this form is embedded in the under surface of the fabric, as shown in Fig. 3, whereby its resistance to any force that would tend to pull it from the material is greatly increased.

The construction of the said holding and clinching mechanism being as described, and arranged in the pincher-jaws, the setting operation is performed by placing a united button and fastener in the platform P of the spring *m*, with the arched connection *i* in the arched slot of the upper jaw, as shown in Figs. 2 and 4, bringing at the same time the three prong-points to shut into the three cavities d^1, &c., of the lower jaw-die H. The parts now being in proper position the material is inserted between the jaws; the prongs are placed on the spot where the button is to be set, and, by a single impulsive shutting of the two jaws together, the prongs are both driven through the material, and clinched firmly upon the back side of the same, in a more simple and effective manner than instruments heretofore in use requiring two and three distinct movements of the jaws to accomplish the same object.

Besides the use in connection with pincher-jaws, as herein set forth, the said holding and clinching mechanism is applicable to organized machines to be operated by a treadle or power, and these applications are herein contemplated.

Having described my invention, I claim—

1. The die B, constructed with circular cavities d^1 d^2 d^3 and concave grooves t^1 t^2 t^3 in the face of the jaw, constituting the clinching mechanism, substantially as specified.

2. The combination of the die B, constructed as described, with the platform-spring *m* and jaw A, provided with the arched groove or slot R, all substantially as and for the purpose set forth.

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Witnesses:

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