(No Model.)

F. H. RICHARDS.

BUTTON SETTING INSTRUMENT.

No. 501,661. Patented July 18, 1893.

Fig. 1

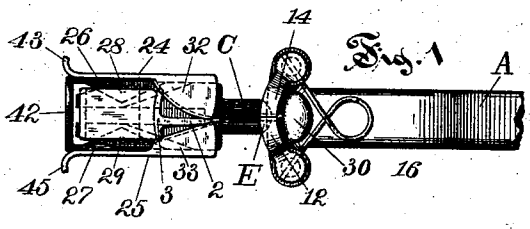


Fig. 7

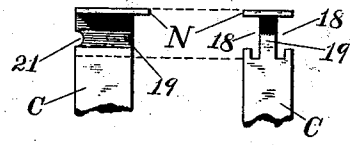


Fig. 2

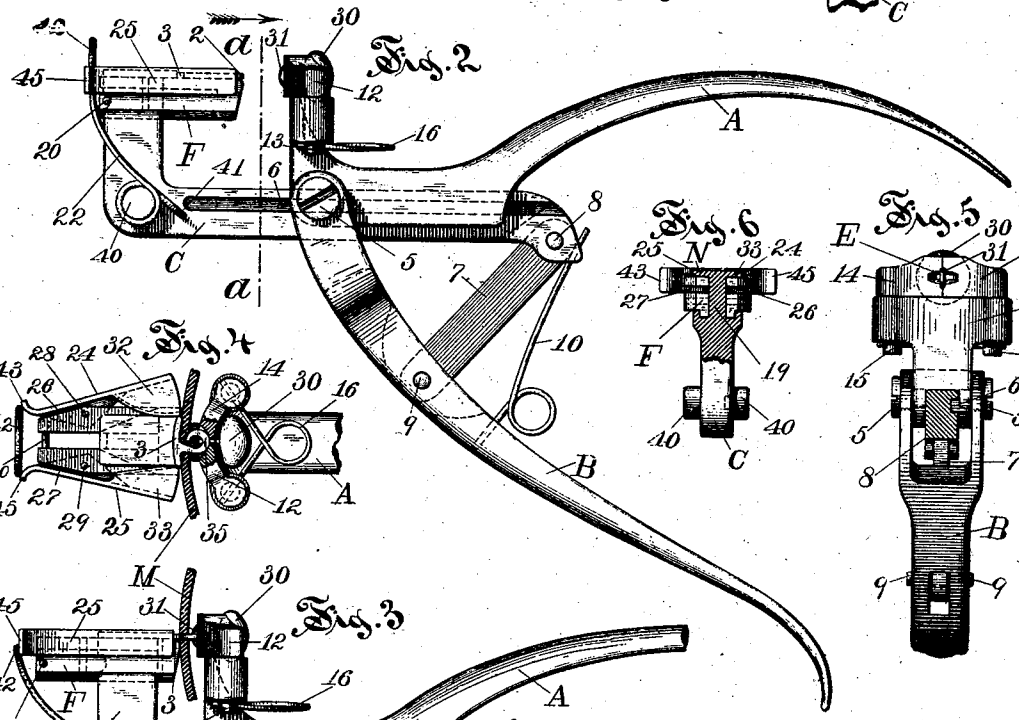


Fig. 6

Fig. 5

Fig. 4

Fig. 3

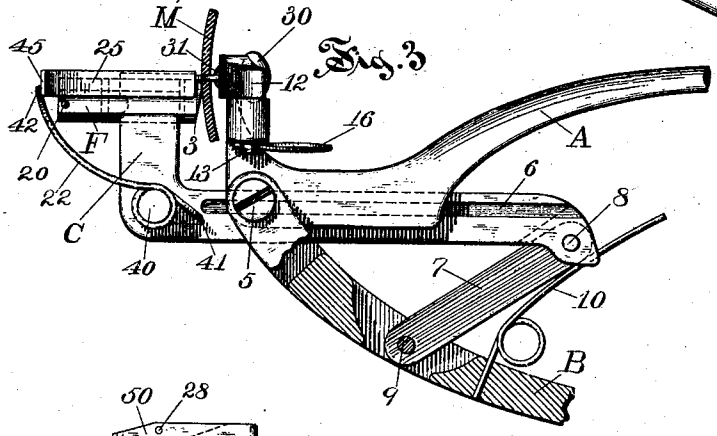


Fig. 10

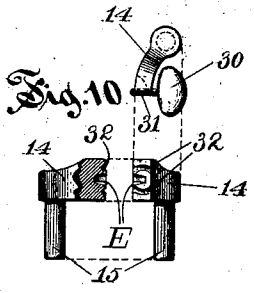


Fig. 8

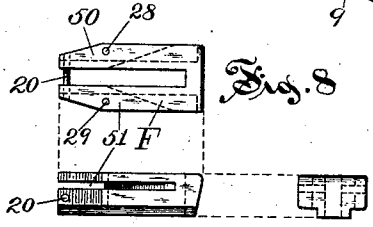
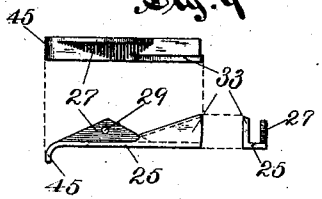


Fig. 9



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Witnesses: Wm. Bjorkman,
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UNITED STATES PATENT OFFICE.

FRANCIS H. RICHARDS, OF HARTFORD, CONNECTICUT.

BUTTON-SETTING INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 501,661, dated July 18, 1893.

Application filed April 1, 1891. Serial No. 387,292. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Button-Setting Instruments, of which the following is a specification.

This improved instrument attaches shank buttons to textile fabric, shoe-uppers, &c., by means of malleable pointed metallic fasteners.

In the drawings accompanying and forming a part of this specification, Figure 1 is a top or plan view of a button setting instrument embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a view, similar to Fig. 2 and partially in section, illustrating the operation of the instrument. Fig. 4 is a view similar to Fig. 1, further illustrating such operation. Figs. 1 and 2 are drawn in alignment or projection with each other; and Fig. 4, with Fig. 3. Fig. 5 is a vertical section in line *a a*, Fig. 2. Fig. 6 is a left-hand end view, partially in section, showing the construction of certain details. Fig. 7 is a detail drawing in two views of the front end of the presser-slide-carrying member C. Fig. 8 shows in three views, the presser-slide F. Fig. 9 similarly shows in three views the fastener-holding guides that are carried on said slide. Fig. 10 similarly shows one of the two parts of the button-holding setting-die.

Similar characters designate like parts in all the figures.

The handles or members A B are pivoted together at about the point X, in any convenient manner. As shown in the drawings, the member B is bifurcated (see Fig. 5), and has two pivot screws, 5, whose points enter and turn in holes formed in the member A. A third member, C, is fitted, substantially as shown, to slide in the member A, having for this purpose the grooves 6 engaging with and between corresponding ribs of the part A. Motion is imparted to slide C by a link 7, pivoted thereto at 8, and at 9 to the handle B, thereby forming a so-called "toggle-joint" arrangement of great power when it is straightened as at or near the close of the setting operation. This action will be understood by comparison of Figs. 2 and 3. A spring, 10, fixed in one member and bearing against the other, serves to open the handles as there illustrated.

One of the objects of the present invention being to furnish a hand button-setting instrument in which the button, 30, shall not be in the way of the fabric M, (Figs. 3 and 4,) the member A is accordingly provided with a button-holding setting die which is made in two parts, that are constructed and arranged to be opened to receive the button, and to be then closed to hold the button during the setting operation. Said die, E, Fig. 5, is formed in part in each of the two half-dies, 12 14, respectively; which parts have stems, 13 15, respectively, journaled in said member A, substantially as shown. For holding the said half-dies normally closed, a spring 16 is or may be provided, whose ends pass through said stems, thereby serving as pins for holding the same longitudinally in place in their bearings in member A. The button shank, 31, lies in grooves, 32, in the abutting faces of the said half-dies, as shown in Fig. 10; and said shank extends through the dies (as shown in Figs. 2, 3, 4 and 5), sufficiently far to permit the hook 35, Fig. 4, of the fastener to be formed therein. When the half-dies stand meeting together, as in Figs. 1 to 5, the die cavity E is substantially the same as if made in the usual way, in a single die block; and it evidently operates in the same manner to form into a button-holding hook the fastener prong driven thereinto. This mode being set forth in prior United States patents, and now well-known in this art, I deem it unnecessary to here recite a particular description thereof.

The fastener-carrying member C, is furnished with a driver, N, the presser-slide F, and with means for yieldingly holding the button fastener on said slide above the driver. On either side of said member C, (see Fig. 7,) I form therein channels, 18, between which the middle wall 19 projects to carry the driver N. In the spaces 18, the slide F is fitted to have a sliding movement parallel to the driver, and immediately behind the same. For this purpose said slide is bifurcated, as in Fig. 8, and thus incloses said wall. To limit the movement of the slide a pin, 20, is fixed therein, and acts as a stop against said wall 19; and to permit a long stroke of the slide, said wall is or may be notched, as at 21, to receive said

pin. The forward movement of the slide, which is the movement toward the die, is produced by a suitable spring, as 22, affixed to the part C, and bearing directly or indirectly against the slide. In this instance, said spring acts indirectly to accomplish said result, since it also serves another purpose at the same time; and it is a wire spring supported by pins 40, fixedly connected at 41 to the part C, and formed in its middle part into the loop-shaped end 42, which bears against and between the diverging ends 43 45 of the fastener clamps described below.

For holding the fastener in place, the slide F is provided with oppositely-disposed side-clamps, 24 25, which are respectively pivotally connected by their lugs 26 27, at points 28 29, in the slots 50 51, of said slide. At their forward ends, said clamps have respectively a bevel-faced or other suitably-shaped jaw, 32 33 substantially as set forth, adapted to clasp the fastener point 2, as in Fig. 1; and also guide the fastener head 3, as also there shown. The spring 22 bearing against and between the ends 43 45 as above mentioned, serves first to close the clamps, and then to push forward the slide, into their positions in Figs. 1 and 2. In Figs. 3 and 4, said spring still acts in the same manner, but the slide F has been driven back, thereby causing the button fastener to spread the clamps as here shown. On the outward movement of the member C, the fastener is withdrawn from between the jaws, the clamps close, and the slide returns to its first position. To put a fastener in place for setting, the point 2 is inserted between the jaws, and then pushed up a little until the head drops down in front of the driver.

The mode of operating my improved instrument, being similar to that of operating the instrument described in my aforesaid patent will be obvious, to those skilled in this art, from the drawings and preceding description. The fastener being in place, a button is put in position as set forth with its shank projecting through between the dies. The fabric or shoe-upper, M, being next properly placed over the slide F, the two handles are now forcibly brought together. This draws forward the member C and forces back slide F, and drives the fastener prong up through the fabric and against the setting die, which turns the point thereof over into a hook, thereby securing the button and completing the setting operation.

Having thus described my invention, I claim—

1. As an improved article of manufacture, a button-setting instrument, comprising the member A carrying the setting-dies, and having means for carrying the member C which carries the fastener holding devices; the member C sliding in said member A, with its fastener holding devices; the lever or handle B pivotally connected at its end to the member A, and the link 7 pivotally connecting the handle B and member C, substantially as described whereby the members A, C, will have a horizontally aligned movement toward and from each other when the handle is operated, substantially as described.

2. In a button-setting instrument, the combination with the member A carrying the setting-die, and the member C carrying the holding device and sliding in the member A, of the member B pivoted at its forward end to the member A, the inclined link 7 pivoted to the members B, C, in the rear of the pivotal points of the members A, B, and the spring secured to the member B and bearing against member C, substantially as and for the purpose described.

3. In a button-setting instrument, the combination with the member A having pivotally-supported spring-held half-dies abutting against each other and having a setting die-cut formed partially in each; the member C sliding upon member A and having the fastener-holding devices and the driver N thereon; the member B pivoted to the member A at its forward end and the link 7 pivotally connecting members B and C in the rear of the pivotal-point of the members A and B, and forming a connection therewith, substantially as, and for the purpose described.

4. In a button-setting machine, the combination with the member A having the button-setting die at its forward end, and the member B pivoted to said member A as described, of the member C having a sliding connection with the member A and pivotally-connected, through the medium of a link at its rear end, to the member B, and having the fastener holding devices comprising the oppositely-disposed pivotally-connected side-clamps 24 and 25, the spring 22 bearing against said clamps, and the presser-slide F and driver N all constructed and arranged substantially as and for the purpose specified.

5. In a button-setting instrument, the combination of the three members A, B and C pivotally-connected, as described, the member A having the two half-dies 12 and 14 with stems 13 and 15 journaled in said member at one side of said dies, and the spring connecting said stems and operating to close the dies, and the member C having the driver N, the presser-slide carried on said member below the driver, and the spring-held pivoted fastener-holding side-clamps carried on said slide, all substantially as and for the purpose set forth.

6. In a button setting instrument, the combination with the member having a movement toward and from the setting-die, and having a driver, of the presser-slide carried on said member below said driver, and fastener-holding side-clamps, substantially as described, carried on said slide, all substantially as described.

7. In a button setting instrument, the combination with the member C constructed to carry the presser-slide, of the slide F, the driver N, the side clamps, and a spring actu-

ing said clamps and slide, all substantially as described.

8. In a button setting instrument, the combination of the member C having driver N, slide F, and the spring-actuated clamps 24 25, having jaws 32 33, substantially as described.

9. In a button setting instrument, the combination of the slide F, the oppositely-disposed clamps 24 25 pivoted thereto, and having diverging ends 43 45, and the slide-actuating spring bearing on and between said ends, substantially as described.

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