

No. 679,441.

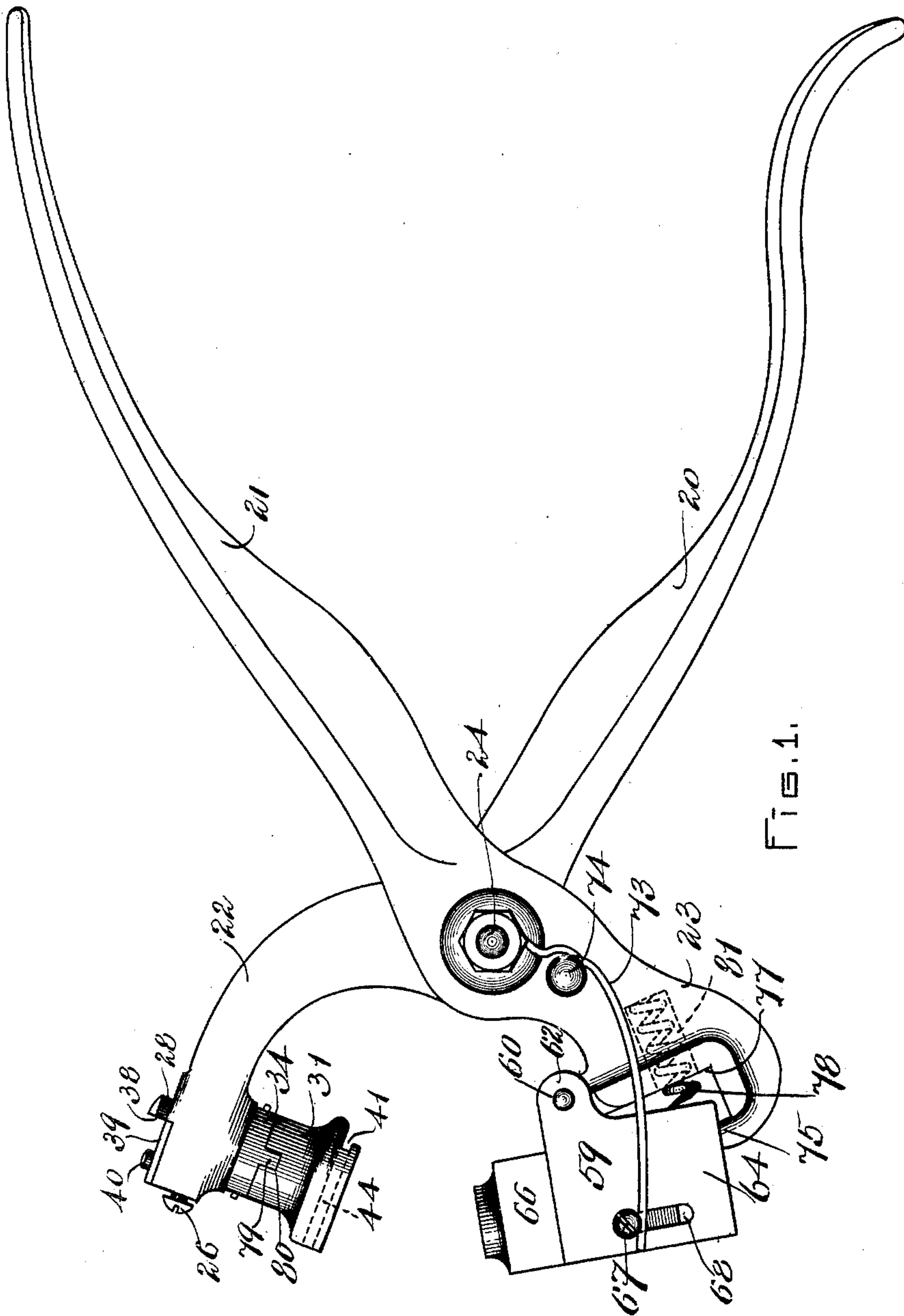
Patented July 30, 1901.

J. H. VINTON.
BUTTON ATTACHING IMPLEMENT.

(Application filed Jan. 19, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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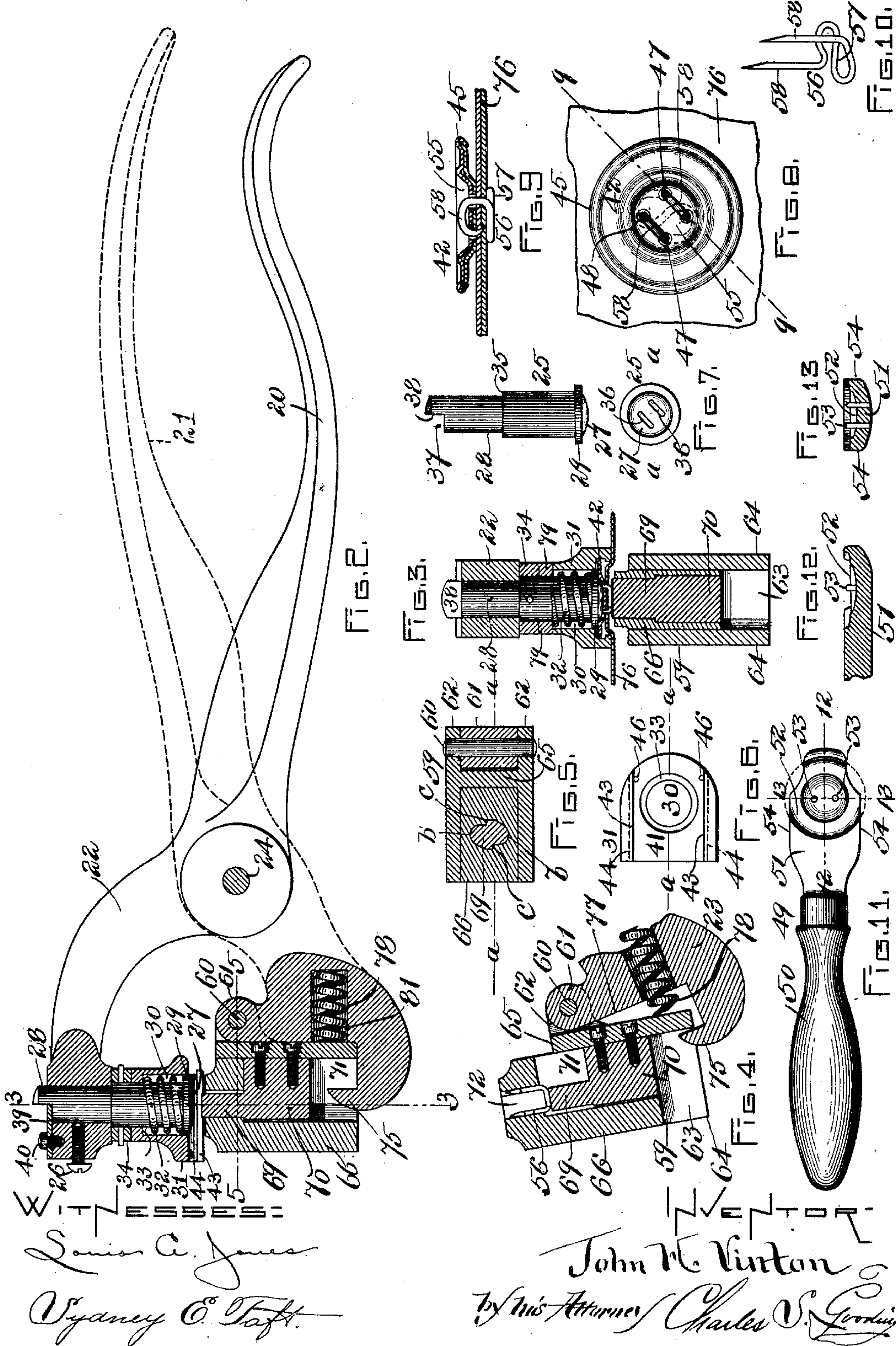
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2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

JOHN H. VINTON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO ROBERT AMORY, OF BAR HARBOR, MAINE.

BUTTON-ATTACHING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 679,441, dated July 30, 1901.

Application filed January 19, 1901. Serial No. 43,923. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. VINTON, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Tools for Attaching Buttons to Garments by Wire Fasteners, (Case A,) of which the following is a specification.

The object of this invention is to produce
10 a convenient, cheap, and practical hand-tool for attaching buttons to clothing and the like by means of wire fasteners; and it is in certain features—notably the clenching-die and spring-pressed button-holder—the same in
15 construction and operation as another hand-tool for a like purpose for which I have made application for Letters Patent of the United States of even date herewith.

The invention consists in certain improved
20 devices for holding the button, for holding the fastener, and for guiding and inserting the legs of said fastener through the fabric and through holes in a button held by a spring-pressed button-holder and then turning said
25 legs across the front face of said button back through holes therein and again into the material.

The invention further consists in the combination and arrangement of parts set forth
30 in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a side elevation of my improved hand-tool, showing the jaws open. Fig. 2 is a central longitudinal section of the same, showing the parts
35 in their relative location when the jaws are closed, one of the handles being indicated by dotted lines. Fig. 3 is a vertical transverse section taken on line 3 3, Fig. 2, with
40 a button, button-fastener, and a section of the material held therein. Fig. 4 is a central longitudinal section of the lower jaw and the parts thereto attached, showing the relative location of said parts when the jaws are open,
45 as in Fig. 1, with a fastener in position in the fastener-holder. Fig. 5 is a plan section taken on line 5 5, Fig. 2. Fig. 6 is an underneath plan of the button-holder held by the upper jaw of the tool. Fig. 7 is a detail side
50 and end elevation of the clenching-die. Fig. 8 is an enlarged plan view of the button, but-

ton-fastener, and a portion of the fabric to which said button is fastened. Fig. 9 is a section taken on line 9 9, Fig. 8. Fig. 10 is a perspective view of the fastener. Fig. 11
55 is a top plan view of the button-locator. Fig. 12 is a section on line 12 12, Fig. 11; and Fig. 13 is a section on line 13 13, Fig. 11.

Like numerals or letters refer to like parts throughout these several views of the drawings. 60

In the drawings, 20 21 are the handles, and 22 23 are the jaws, of my improved hand-tool. The handle 20 and the button-jaw 22 are formed in one piece, and the handle 21 and fastener-jaw 23 are also formed in one piece, 65 and said handles are joined together by a pivotal stud 24. The button-jaw 22 has a clenching-die 25, fast thereto by a set-screw 26. The clenching-die 25, Figs. 2 and 7, consists of a cylindrical block of steel having a head 70 portion 27 and a shank portion 28. The head portion 27 of said die is convexly curved upon the under side thereof and has a flange 29 thereon which is formed to fit in a chamber 30 in the spring-pressed button-holder 31. 75 The shank 28 is encircled by a spiral spring 32, one end of which bears against the flange 29 and the other against the shoulder 33 in said button-holder. The button-holder 31 is adapted to slide lengthwise upon the shank 80 of the clenching-die 25 in a direction at right angles to the face of said die and is prevented from turning upon said shank and thus changing its location with relation thereto in a plane parallel to the face thereof by a tongue 85 79 upon the collar 34, which projects into and fits a notch 80 on the spring-pressed button-holder 31. It will be seen that the action of the spring 32 is to hold the button-holder 31 up against the collar 34, said collar 90 being pinned to the die-shank 28, and with its upper face resting against the under side of the jaw 22. The die-shank 28 is shouldered at 35, and said shoulder rests against the under side of the jaw 22. In the under 95 face of the head portion 27 of the clenching-die 25 are two grooves 36, parallel to each other and standing at forty-five degrees to the longitudinal median line *a* of the tool, said grooves being for the purpose of turning over and clenching the legs of the fastener, as hereinbefore described. 100

In order to set the grooves 36 at forty-five degrees with the longitudinal median line *a*, the top of the shank 28 has a notch 37 cut across to the center thereof, leaving a straight face 38 thereon, which stands at an angle of forty-five degrees with the grooves 36 and at right angles to said median line *a*. A plate 39, fast to the jaw 22 by a screw 40 and a dowel-pin, (not shown,) bears against the face 38 and lines it up, so that the grooves 36 are necessarily set correctly at forty-five degrees to the median line *a*.

The spring-pressed button-holder 31 has a recess 41 in the lower end thereof to receive a button 42. Said recess extends across the under face of said button-holder and has two parallel side walls 43, each with a groove 44 therein to receive the rim 45 of said button. Two pins 46, fast to the button-holder 31, locate the center of the button in line with the center of the die 25.

The button 42 has four holes 47 47 and 48 48 therein, forming the four corners of a square in which 47 and 47 are diagonally opposite each other and 48 48 are also diagonally opposite each other. It is necessary that the button shall be placed in the holder 31 with the holes 47 47 exactly on the median line *a* of the tool, so that when the legs of the button are forced through the material to which the button is fastened said legs shall register with the holes 47 in the button and pass through said holes to be turned over and back by the grooves 36 in the die 25. To accomplish this, I provide a button-locator 49, for which I have made application for Letters Patent of the United States of even date herewith.

The button-locator 49 has a handle 50 and a carrier-slide 51. Said carrier-slide 51 has a circular depression 52 therein to receive the button 42 and two pins 53 53, arranged to enter diagonally opposite holes 48 48 in said button. The carrier-slide 51 has two parallel sides 54 54 at a distance apart equal to the distance between the parallel side walls 43 in the button-holder 31 and less than the diameter of said circular depression, so that the perimeter of said depression intersects said sides 54 and is cut away by them so as to allow the rim of a button placed in said depression to project beyond said sides.

To place the button 42 in the button-holder 31 and in the correct location therein with the holes 47 48 located in proper relation to the die-grooves 36 and to the legs of the fastener 56, held by the yielding fastener-holder 66, said button is first placed by hand in the depression 52 in the button-locator with the pins 53 projecting through two diagonally opposite holes 48 48 in said button. The button 42 is then carried forward by the locator 49, with the rim 45 projecting beyond the sides 54 of said carrier-slide and into the grooves 44, said parallel sides 54 of the carrier 51 sliding between and guided by the parallel side walls 43 of the button-holder 31

until the rim 45 of the button abuts against the pins 46. As the button is pushed forward in the recess 41, with the rim 45 thereof guided in the grooves 44, said rim comes in contact with the lower rounded face portion 27 of the die 25 and forces said button-holder downwardly against the action of the spring 32. When the rim 45 has passed the head 27, the spring 32 forces the button-holder upwardly, and the lower rounded face portion 27 of the die enters the depression 55 in the head of the button, and the spring-pressed button-holder 31 holds said button in proper position, with the holes therein located to register with the legs of the fastener when the fastener is forced through the material and into said holes. The button-locator 49 is now withdrawn by lowering the same until the pins 51 are clear of the button 42, and the sides 54 are withdrawn from contact with the side walls 43 of the button-holder 31.

The fastener 56, Fig. 10, by which the button 42 is attached to the material, is formed of a single piece of wire bent in an S shape to form the head 57 thereof, and the two free ends of said wire are bent at right angles to said head portion 57 to form the legs 58 58 thereof and at a distance apart equal to the distance between the holes 47 47 in said button. The lower jaw 23 has an anvil-holder 59 pivoted thereto by a pin 60. Said pin 60 is driven into an ear 61 on the jaw 23 and through holes in the ears 62 on the anvil-holder 59, Fig. 5. The anvil-holder 59 has a recess 63, extending from top to bottom and opening out at the front thereof, the two sides 64 64 and the back 65 forming a guide for the yielding spring-supported fastener-holder 66. Said fastener-holder 66 is held in the recess 63 by the screw 67, which is screwed into said fastener-holder and projects through a recess 68 in the side 64 of the anvil-holder 59.

The anvil 69 is formed upon an anvil-block 70, which is secured by screws to the back 65 of the anvil-holder 59. Said anvil-block 70 projects into a recess 71 in the fastener-holder 66. A guide-passage 72 for the fastener 56 extends from the top of the fastener-holder 66 into the recess 71 in said holder. The passage 72 is shaped to receive the anvil 69, and both passages and anvil are in cross-section, Fig. 5, of an outline corresponding to the outside of the head 57 of the fastener 56. This outline is substantially formed by the two semicircular curves *b b*, located upon opposite sides of the median line *a* and joined together by straight walls *c c*. A spring 73, supported upon the pin 74, fast to the jaw 23, bears against the under side of the screw 67 and holds the fastener-holder 66 normally in the position shown in Figs. 1 and 4 with the screw 67 at the top of the recess 68. The anvil-holder and the parts carried thereby are normally held in the position shown in Figs. 1 and 4 by the spiral spring 78, located in a hole 81 in the jaw 23, with one end thereof bearing against the back wall 65 of said anvil-

holder. The spring 78 is heavier and stronger than the spring 73. A lug 75 on the jaw 23 projects into the recess 63 in the anvil-holder 59 and limits the distance which said anvil-holder can be swung upon its pivot by the spring 78 through coming in contact with the rear wall 65 of said recess 63.

The operation of the tool in securing a button to an article of clothing by means of a wire fastener is as follows: Assuming the jaws 22 and 23 to be apart, as in Fig. 1, the button 42 is placed in the button-locator 49 and by it transferred to the button-holder 31, as hereinbefore described. The fastener 56 is then inserted in the guide-passage 72 of the yielding fastener-holder 66, Fig. 4, with the head 57 on the anvil 69 and the legs 58 projecting upwardly therefrom and against the side walls *c c* in the guide-passage 72 of said fastener-holder 66. The goods or fabric is now placed between the yielding fastener holder or guide 66 and the spring-pressed button-holder 31 and the handles brought together, closing said jaws sufficiently to enable the operator to locate the button in the position desired on the goods. Upon a continued closing of the jaws the fastener guide and holder 66 yields and slides down in the recess 63, overcoming the action of the spring 73 and allowing the anvil 69 to push the fastener 56 up through the guide-passage 72, and thus force the legs of the fastener through the fabric and through the holes 47 47 in the button 42 until the points of said legs come in contact with the die 25 in the grooves 36 thereof, at which time about one-half of the length of the legs of the fastener, together with the head thereof, remains in the guide-passage 72. Upon a still further closing of the jaws the fastener-holder, anvil, and anvil-holder rock as one piece upon the pivot 60, overcoming the actions of both of the springs 73 and 78, the points of the fastener remaining in said grooves without turning until the back wall 65 of the anvil-holder abuts against the front face 77 of the jaw 23, when the points of the fastener will begin to turn in said grooves and the fastener-holder to slide down upon the anvil 69 in the recess 63 of the anvil-holder 59, forcing the fastener entirely out of the guide-passage 72 and turning the legs 58 along said grooves across the front face of the button from the holes 47 to the holes 48, or at an angle of forty-five degrees to the median line of the tool, then turning said legs down through said holes 48 through the button again, through the material, and clenching the points of said legs against the head 57 of the fastener 56, (see Figs. 8 and 9,) said head resting at such time and throughout the operation hereinbefore described upon the top of the anvil 69. The handles and the jaws are now opened and the button disconnected from the holder 31 by pulling it forward by means of the material 76, to which it is now attached, through and out the front end of the grooves 44 in said button-holder.

It will be seen and understood that when the fabric is held between the lower face of the button-holder 31 and the upper face of the yielding fastener holder and guide 66 the points of the legs 58 of the fastener are at that time not quite touching the under surface of said fabric and that the legs of the fastener stand at right angles to said surface and register with the holes 47 47 in the button, and as the legs are forced through the fabric and button, as hereinbefore described, the upper face of the fastener-holder is kept parallel to the lower face of the button-holder, and consequently the fastener-legs always held at right angles to the face of the button and in line with the holes 47 therein during the process of forcing said legs into the fabric and through the button, and this result is attained through the combined sliding of the yielding fastener holder and guide 66 and the rocking of the anvil-holder 59 upon its pivot 60.

It is evident that buttons of varying designs and contour and with a different number of holes therein, and also different shapes and designs of fasteners may be used, and the tool varied to fit and handle said buttons and fasteners without departing from the spirit of my invention.

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

1. In a tool for attaching buttons to garments by wire fasteners, a clenching-die having a cylindrical shank and a flange adjacent to the working face thereof, a button-holder encircling said shank and flange and adapted to move lengthwise thereof, a chamber in said holder, a spring in said chamber one end bearing against said flange and the other against said holder and acting to press said button-holder toward said die, whereby a button held by said button-holder is held against said die.

2. In a tool for attaching buttons to garments by wire fasteners, a clenching-die having a cylindrical shank and a flange adjacent to the working face thereof, a button-holder encircling said shank and flange and adapted to move lengthwise thereof, a recess in said button-holder to receive a button, opening from one side of said holder and extending across the face of said clenching-die, two parallel side walls to said recess, and a groove in each of said side walls to receive and guide the rim of said button, a chamber in said holder, a spring in said chamber, one end bearing against said flange the other against said holder and acting to press said button-holder toward said die, whereby a button held by said button-holder is held against said die.

3. A tool for attaching buttons to garments by wire fasteners, comprising a pair of jaws pivoted one upon the other, a clenching-die fast to one of said jaws, a button-holder attached to said clenching-die, an anvil, a holder for said anvil pivoted to the other of said jaws, and a spring-supported holder for a fas-

tener having a guide-passage therein to receive and guide said fastener, said fastener-holder arranged to slide upon said anvil and eject said fastener from said guide-passage.

- 5 4. A tool for attaching buttons to garments by wire fasteners, comprising a pair of jaws pivoted one upon the other, a clenching-die fast to one of said jaws, a button-holder attached to said clenching-die, and a spring,
10 acting to press a button held by said button-holder against the face of said die; an anvil, a holder for said anvil pivoted to the other of said jaws, and a spring-supported holder

for a fastener having a guide-passage therein to receive and guide said fastener, said fastener-holder arranged to slide upon said anvil and eject said fastener from said guide-passage. 15

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses. 20

JOHN H. VINTON.

Witnesses:

CHARLES S. GOODING,
JOSEPH M. WIGGIN.