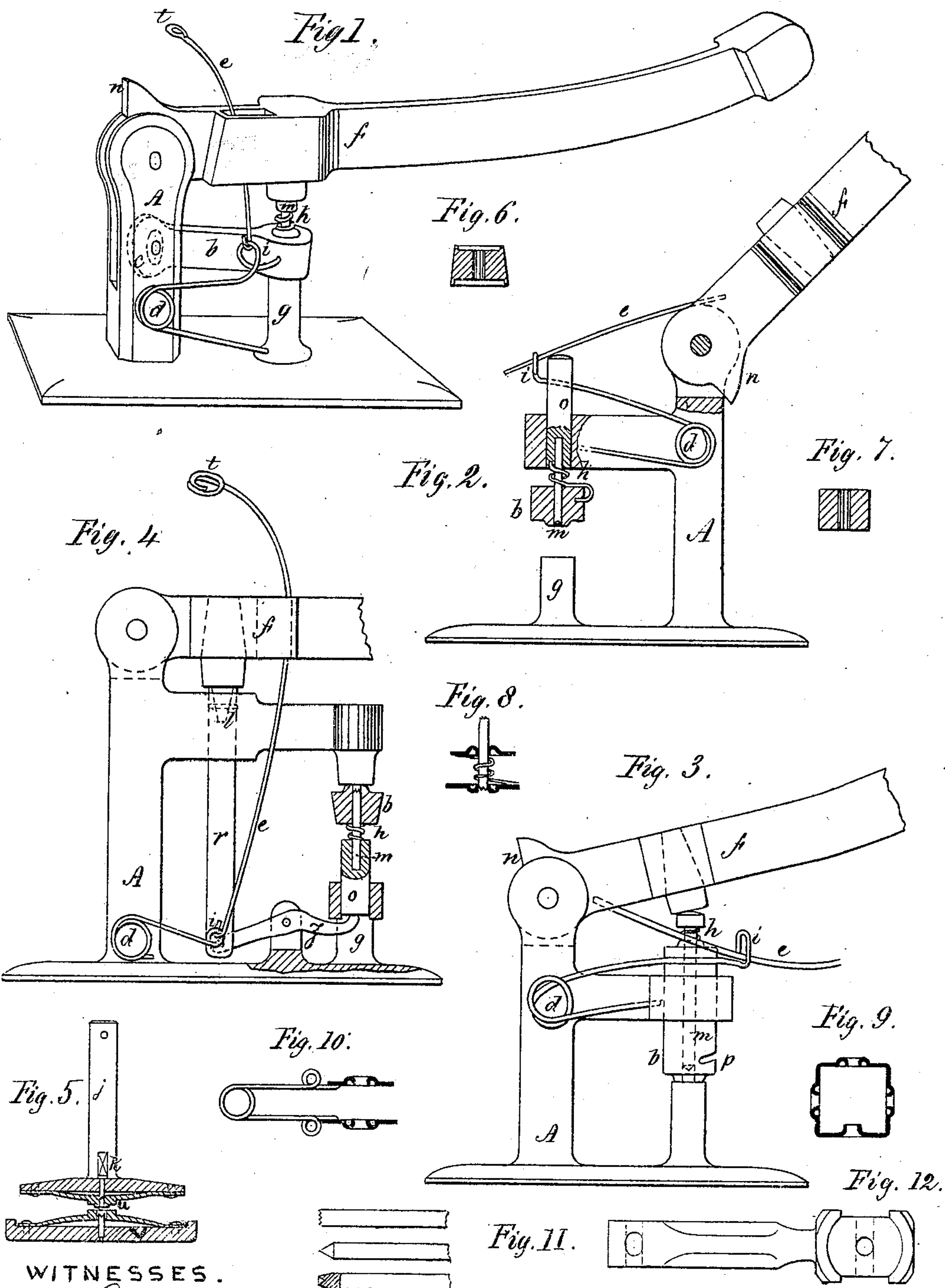


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Machines for Riveting Buttons to Fabrics.

No. 132,537.

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WITNESSES.

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IMPROVEMENT IN MACHINES FOR RIVETING BUTTONS TO FABRICS.

Specification forming part of Letters Patent No. 132,537, dated October 29, 1872.

To all whom it may concern:

Be it known that I, JOHN J. MERVESP, of Brooklyn, county of King and State of New York, have invented certain Improvements in Machines for Riveting Buttons to Fabrics, of which the following is a specification:

The invention consists in having one end of a spring fastened to the frame of a machine and the other end fastened to the die or plunger, in order to press the die on the cloth or other material to be riveted, and to prevent the rivet from bending or vibrating while a head is being formed on it, in combination with a lever or lifter for raising or depressing the punch or plunger, with a die formed with two or more different faces, so as to suit different sizes of buttons or burrs, and a counter-sunk punch, or, in some cases, a serrated or pointed one, according to the kind of work to be done, with a hammer for striking the punch or plunger.

Figure 1 is a perspective view of my machine with the die *b* secured to the frame by a rivet passing through the slot *c*. Fig. 2 is a side elevation of a modification of the same with part in section. Fig. 3 is a modification or the same, in which the die *b* acts as a plunger. Fig. 4 is a modification of the same, with part in section, in which the punch *m* is operated by the lever *z* being struck by the plunger *r*. Fig. 5 is a modification of the plunger, die, punch, and anvil, shown in Fig. 2. Fig. 6 is a modification of the die shown at *b*, Fig. 2. Fig. 7 is a modification of the same used for riveting on a level surface, such as plain washers, burrs, &c. Fig. 8 is a modification of the same with spiral spring between the different faces of the dies. Fig. 9 is a modification of the same with four different faces. Fig. 10 is a modification of the die shown at *b*, Fig. 1. Fig. 11 is a sectional view of the punches, shown at *m m m m*, Figs. 1, 2, 3, and 4; and Fig. 12 shows a modification of the die, shown at *b*, Fig. 1, with four different faces.

In Fig. 1, *A* is the frame of the machine; *b*, the reversible die, with two different faces, (modifications of which are shown in Figs. 10 and 12,) fastened in the frame by a bolt or pin, *c*, passing through a hole in the latter, and a slot in the die *b*, or a hole may be in the die, and a slot cut in the frame, or a

slot cut in both. The object of the slot is to be able to regulate the die to the diameter of the material to be riveted, so that it will lie level on the button or burr to be fastened. This die has two different faces—one for large and one for small buttons. The modification shown in Fig. 12 has four different faces—one for small, one for medium, another for large buttons, and the fourth face for riveting burrs, or anything with a level surface, and is secured to the machine the same as the die *b*, the difference being that it has two holes crossing each other in order to allow either of its faces to be used. When the die shown in Fig. 10 is used, the spring *h* is dispensed with, being partly composed of a spring itself, which supplies the place of the spring *h*. The loops on its sides are for the reception of the lifter *e*. One end of the spring *d* is fastened to the machine, and the other to the die *b*. The lever or lifter *e* is fastened, at *i*, to the spring *d*. The latter holds the article to be riveted firmly between the die *b* and the anvil *g*, and prevents it vibrating or the rivet bending while being struck by the hammer *f*.

When a button is to be riveted the hammer-handle *f* is raised up and pressed back, when it engages with the loop *t* of the lifter *e*, which raises the die *b*, when the article to be riveted is placed under the die and the hammer dropped on the punch *m*. In Fig. 2 the machine is shown with the hammer raised up and bent backward. One end of the spring *d* is fastened to the machine, while the other end passes through a hole in the plunger. The lever *e* passes through the loop *i* of the spring *d*. The other end of it is fastened to the hammer-handle. The end of the spring *h* passes through a hole in the side of the die *b*. This arrangement keeps the die in position and allows it to be reversed when required.

When a button or other article is to be riveted the handle is pressed back, as shown, when the lever *e* raises the plunger and die, when the material to be riveted is placed under the die and the hammer dropped, as in Fig. 1. In Fig. 3 the die *b* acts as a plunger. It has a slot, *p*, cut in either end of it, through which one end of the spring *d* passes, and presses it toward the anvil *g*. The punch *m* passes through the die, and is kept in position by the spring *h*. This die is made with

a large and small face for different kinds of buttons. When it is to be reversed it is taken out of the arm after the spring *d* is slipped from the slot *p*, and turned upside down when the spring *d* is put in the slot *p*. This machine is operated the same as that shown in Fig. 2, when a button is to be riveted. In Fig. 4 the plunger *o* is struck by a lever operated on its opposite end by a longer plunger, *r*, the end of which is provided with a detachable head, *l*, which can be removed when worn and replaced by a new one. When a button or other article is to be riveted the handle is raised up and pressed backward, when it engages with the loop *t* of the lever or lifter *e*, which raises the long plunger *r* and depresses the plunger *o* and die *b*, when the article to be riveted is placed on the die and the hammer dropped on the plunger. Either of the dies shown in Figs. 6, 7, 8, or 9 may be used with this machine.

The die shown in Fig. 6 has two level faces, one large and one small, with a rim around each to keep the buttons in position while being riveted; it also has a hole in its side for the reception of the spring shown at *h*, Fig. 2.

The die shown in Fig. 7 is level on both faces, and is used when plain burrs or washers are to be riveted, as in shoes, harness, &c.

The die shown in Fig. 8 has two faces, a large and a small one, for small or large buttons, with a spring soldered or otherwise fastened between them. This spring is coiled small in the center in order to fit the punch tight and keep itself on it. When this die is used the spring shown at *h* is omitted.

The die shown in Fig. 9 is struck out of a piece of sheet metal with three or four different faces, so that it can be used on different sizes of buttons, or its level face can be used in the riveting of plain burrs, as in harness, shoes, &c.

Either of these dies shown in Figs. 6, 7, 8, and 9 can be used in the machine shown in Figs. 2 and 4.

The punches shown in Fig. 11, when used in combination with this machine, are countersunk, serrated, or pointed according to the kind of work to be done, and are fastened in the plungers *o* by roughing their sides and applying some cement or glue to them when inserting them—I mean a cement that will be sufficiently strong to keep them in their place and yet allow them to be removed when worn.

The plunger, punch, and die shown in Fig.

5, with its under die, can be used in place of the plunger, punch, and die shown in Fig. 2. This modification will rivet a small solid wire rivet on both ends simultaneously. The punch *j* is kept in its place by the wedge *k*, and can be removed by withdrawing it. The die *u* is held by two rivets upon which it works. The under die is held the same as the top one, and its punch fits into a hole in the anvil *V*. When worn it can be punched out and replaced by a new one.

All the dies shown press on the button or burr before the punch touches the rivet. I prefer to use the dies shown in Figs. 8 and 9, as they are made for less than a quarter the cost of the dies shown in Fig. 6, and at *b*, Figs. 2 and 4.

I claim as my invention—

1. A die formed with two different faces, connected by a spiral spring, as shown in Fig. 8, for the purpose specified.

2. I claim a die formed with four different faces, as shown in Fig. 9, for the purpose specified.

3. I claim the dies shown in Figs. 10 and 12, for the purpose specified.

4. I claim, in combination with the frame *A*, hammer *f*, spring *d*, and lifter *e*, shown in Fig. 1, the use of either of the dies shown in Figs. 10 and 12, and at *b*, Fig. 1, with the use of a punch either countersunk, serrated, or pointed, and with or without the spring *h*, Fig. 1, substantially as specified.

5. I claim, in combination with the frame *A*, hammer *f*, spring *d*, lever *e*, plunger *o*, Fig. 2, the use of either of the dies shown in Figs. 6, 7, 8, and 9, and at *b*, Fig. 2, with the use of either of the punches shown in Fig. 11, and with or without the spring *h*, Fig. 2, for the purpose described, substantially as specified.

6. I claim the combination of the springs *d* *h*, lifter *e*, punch *m*, die *b*, with hammer *f* and frame *A*, shown in Fig. 3, all constructed and operating substantially as described.

7. I claim the combination of the frame *A*, springs *d* *h*, lifter *e*, die *b*, countersunk punch *m*, plungers *o* *r*, head *l* with hammer *f*, all constructed and operating substantially as shown and described.

8. I claim the modification of the die, plunger, and punch, with its under die shown in Fig. 5, substantially as described.

Witnesses:

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