D. M. SOMERS & W. S. ATWOOD.

INSTRUMENT FOR ATTACHING BUTTONS TO FABRICS.

No. 83,669. Patented Nov. 3, 1868.

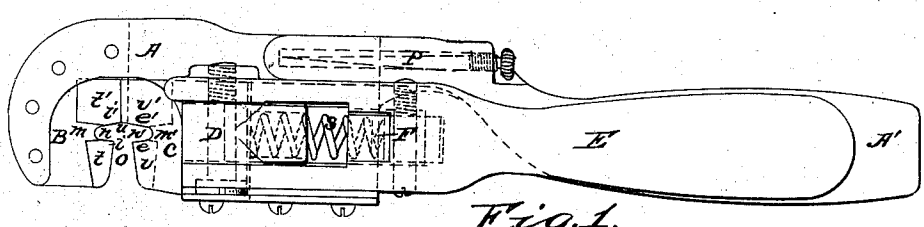

Fig. 1.

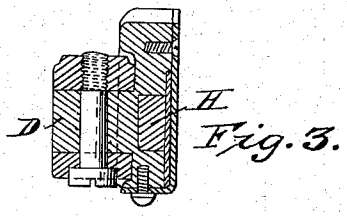

Fig. 3.

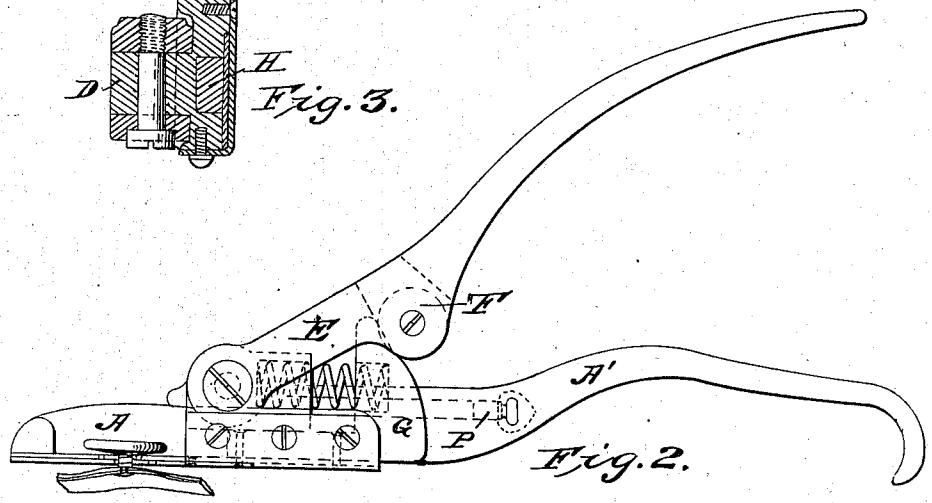

Fig. 2.

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Letters Patent No. 83,669, *dated November* 3, 1868.

INSTRUMENT FOR ATTACHING BUTTONS TO FABRICS

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, DANIEL M. SOMERS and WALTER S. ATWOOD, both of the city of Brooklyn, county of Kings, and State of New York, have invented a new and improved Tool, on the compression principle, to Secure our Patent Buttons, patented December 31, 1867, to Materials; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of our invention consists in providing two or more dies or plates, of a thickness that will readily pass between the button and the flange, on the cylindrical shank, so that they may act on the cylindrical shank alone, and not disturb either the flange or the button.

We construct our tools chiefly with two blades. These blades have each a groove through the edges, that come together. The mouth of these grooves is just large enough for the cylindrical shank to enter. The bottom of the grooves is rounded out, to form a half circle, of a size that the shank is desired to be compressed to, fitting and securely attaching it to the diminished form of rivet within it. The sides of the grooves taper equally from the mouth of the grooves to the semicircles.

These blades are also constructed to lap each other, that is, half of one of the blades is removed, and the opposite half of the other is also removed to fit the projecting parts, that the plates may come together in the same plane, bringing the two semicircles together, forming a circle, and presenting the appearance of a hole through a solid plate.

The object of these plates being constructed in this peculiar way is, to make the labor of compression easy, by distributing it, and to compress the shank equally and alike all round, without making a burr, or defacing the shank, so that the button-hole may not be cut in wearing it.

For compressing the shanks of buttons, these plates may be pressed against each other in many ways; that of attaching the blades to a pincers-shaped tool being a simple and effective way. The plan we find most satisfactory is, to attach one of the blades permanently to the frame of the tool, the other to a movable piece that works in a slot in the frame, and has one end projected into an upright inclined plane. There is a movable lever hinged to the frame-piece, that has a roller in it, which works against the inclined plane, forcing the sliding piece, with movable blade, against the stationary one. On removing the power, the sliding piece is forced back by means of a spring.

We also construct tools for attaching our patent buttons, where more than two blades are used, to compress from different points, and lessen the liability of forming a burr on the shank.

We also construct tools, as shown in patent, No. 72,929, granted to us, where simple blades are used, that do not lap, and have not the tapering grooves, but merely butt against each other, and have simply semicircular grooves.

We have also effected the compression of the shank of our button by a tool, with rollers in it, to come in contact with the shank, and roll the compression-groove, instead of forcing it in with direct action of dies.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation, referring to the drawings, which form a part of these specifications.

We construct a frame-piece, marked A A′, in Figures 1 and 2. This piece is so constructed that the stationary blade or die, B, can be permanently attached, and also to form a guide for the sliding blade C. This piece is also extended to form a needle-box, and one of the handles, as shown at A′.

There is cast on this frame-piece a lug, as shown at D, to which is hinged a second handle, E. This handle is provided with a roller, as shown at F. This roller operates against an inclined plane, G, which forms a part of the sliding piece H, to which the sliding blade C is attached.

The tool is operated by forcing the handle E towards the handle A′, thus causing the roller to rotate on the inclined plane, and force the sliding piece and blade to meet the stationary one. On removing the power applied, the spring S forces the sliding piece to its former position.

The blades for compressing the shank of the button are constructed as follows:

Each blade has a corresponding groove, as shown at *h h′*. These grooves are widest at the mouth, as shown at *i i′*, in the groove *h*, tapering to the semicircle *m*.

The blade C is the same shown at *e e′*, tapering to *m′*. A part of the upper part of the blade B is removed to half of its thickness, as shown at *t t′*. A corresponding lower part of the blade C is also removed, as shown by dotted line at *v v′*.

To bring these blades together in closing, the upper projecting part of sliding blade, at *b b′*, fills the recess of the upper part of stationary blades, shown at *t t′*. The lower half of these blades is *vice versa*, and when the blades are closed, the two semicircles *m m′* come together, making a circle, forming, as it were, a hole through a solid plate.

The blades operate thus: The shank of the button is admitted into the die through the opening O, until it touches at *u*. The blades now close round the shank as power is applied to the handles. The shank being the same diameter as the mouth of the grooves, it just enters them, and on continuing the power, the inclined sides compress the parts of the shank that come in contact with it. Thus, by the time the semicircles are

reached, more than half of the compression is accomplished. At this point more power is gained to finish the compression, by a less angle of inclination in the inclined plane on the sliding piece. Thus, the shank of the button is equally compressed all round, without defacing it.

We also construct the frame-piece so as to form a needle-box, as shown at P. The needle is kept in its place by a plug being screwed in the opening.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The bed-piece A, lever E, friction-roller F, sliding die-plate C, attached to and operated by sliding piece H, having an inclined face, and a stationary die-plate, B, combined and arranged substantially as herein described and for the purposes set forth.

2. The die-plates B and C, so constructed, with removed surfaces *t t'* and *v v'*, that they may overlap, and their dies provided with inclined sides *i i'* and *e e'*, combined and operated substantially as herein described.

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