(No Model.) 2 Sheets—Sheet 2.

G. HEIDMANN, E. HÖTTGES & C. EGEN.

MACHINE FOR MANUFACTURING BUTTONS.

No. 383,881. Patented June 5, 1888.

Fig. 7.

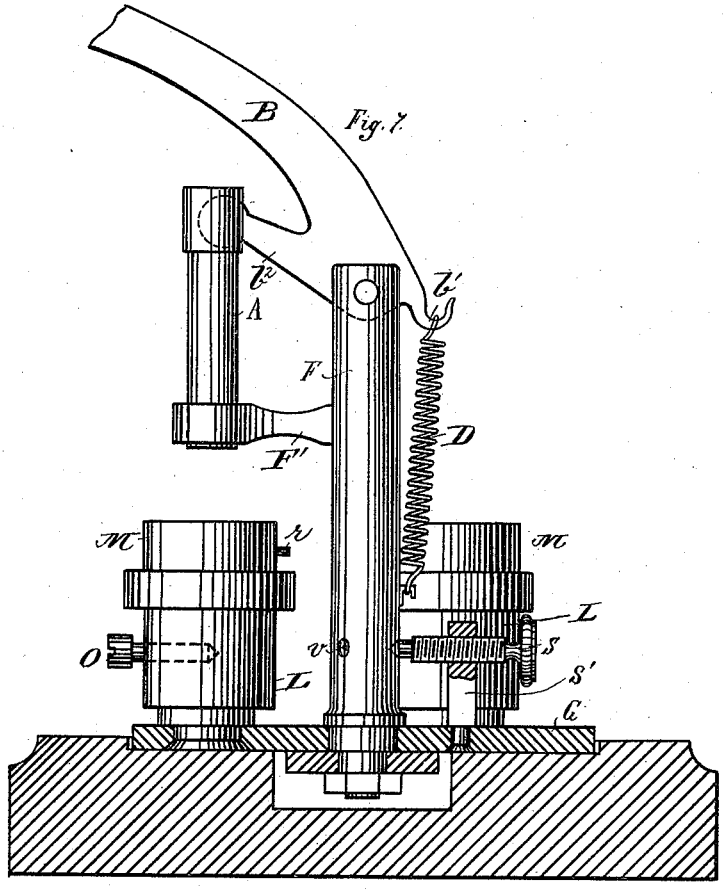
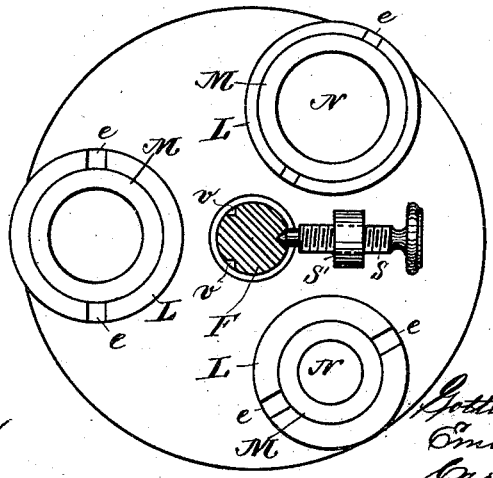


Fig. 8.



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(No Model.) 2 Sheets—Sheet 1.

G. HEIDMANN, E. HÖTTGES & C. EGEN.

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Fig. 1.

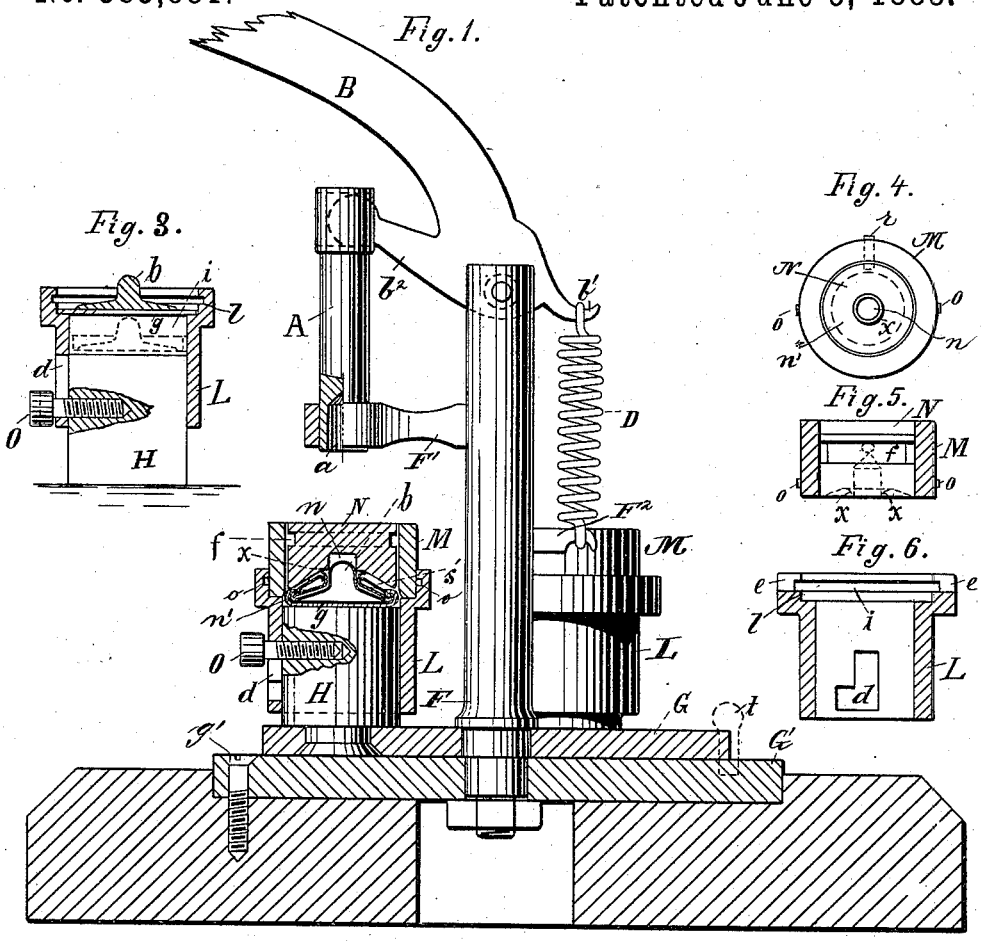


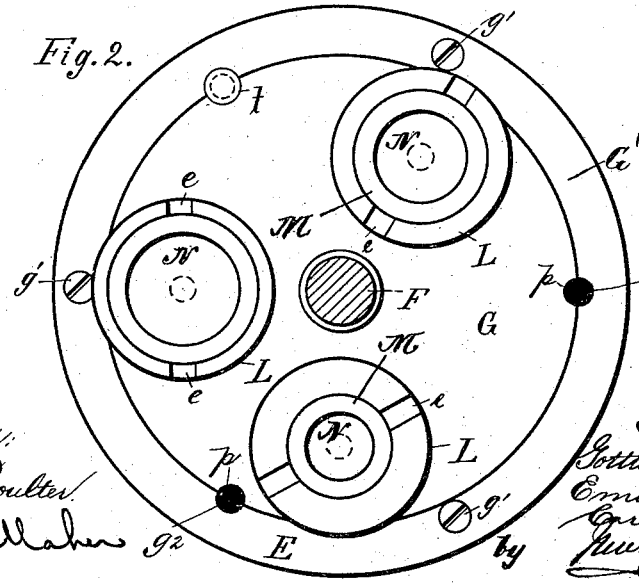
Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 2.



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UNITED STATES PATENT OFFICE.

GOTTLIEB HEIDMANN, EMIL HÖTTGES, AND CARL EGEN, OF BARMEN, PRUSSIA, GERMANY, ASSIGNORS TO HEIDMANN & HÖTTGES, OF SAME PLACE.

MACHINE FOR MANUFACTURING BUTTONS.

SPECIFICATION forming part of Letters Patent No. 383,881, dated June 5, 1888.

Application filed September 5, 1887. Serial No. 248,869. (No model.) Patented in Belgium August 9, 1887, No. 78,526; in France August 9, 1887, No. 185,258; in England August 9, 1887, No. 10,907, and in Italy September 30, 1887. XXI, 22,140, and XLIV, 401.

To all whom it may concern:

Be it known that we, GOTTLIEB HEIDMANN, merchant, a subject of the King of Prussia, residing at Barmen, 93 Alleestrasse, Prussia, Germany, EMIL HÖTTGES, merchant, a subject of the King of Prussia, residing at Barmen, 32 Haspelerstrasse, Prussia, Germany, and CARL EGEN, merchant, a subject of the King of Prussia, residing at Barmen, 10 Oberdörnerstrasse, Prussia, Germany, have invented certain new and useful Improvements in Machines for Manufacturing Buttons, (for which patents were obtained in our names in Belgium under date of August 9, 1887, No. 78,526; in France under date of August 9, 1887, No. 185,258; in Italy under date of September 30, 1887, XXI, 22,140, and XLIV, 401, in the name of the firm of Heidmann & Höttges, and in Great Britain under date of August 9, 1887, No. 10,907;) and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Referring to the drawings, Figure 1 is a sectional elevation of our improved machine for making cloth-covered buttons, in which the lower dies or matrices are revoluble. Fig. 2 is a sectional top plan view, and Figs. 3, 4, 5, and 6 detail views, thereof. Fig. 7 is an elevation, partly in section, of a like machine in which the follower or plunger is revoluble; and Fig. 8 is a sectional plan view of the same.

The invention relates to hand-machines for making cloth-covered buttons, and as heretofore constructed buttons of one size only can be made therewith. This necessitates the use of a number of machines corresponding with the number of sizes of buttons employed by the tailor or manufacturer of clothing, entailing considerable expense.

The object of this invention is to provide a simple machine by means of which buttons of different sizes can be made, the construction of the machine being based upon the use of independent upper-die sections and their co-operation with the lower-die sections.

To these ends the invention consists in the combination, with a lower die, of an upper die composed of two independent or disconnected sections adapted to co-operate with the lower die, whereby the dimension of one of the sections of the upper die is made independent of the dimensions of the other section of said die to admit of the use of a plurality of lower dies of varying dimensions, substantially as hereinafter fully described, and as set forth in the claims.

The invention further consists in certain features of construction and combinations of parts, substantially as hereinafter fully described, and as set forth in the claims.

In machines of this class as heretofore constructed two dies are employed, and both are made of two connected sections sliding one upon the other. Such a construction does, of course, not admit of the use of such a machine for making buttons of different sizes, since the dimensions of the sections of both the upper and lower dies are dependent upon one another. We propose to connect the upper die directly with the lower die in such a manner as to permit said upper die to move vertically therein, and to employ a plunger or follower to operate said upper die. It is obvious that by means of such a construction a plurality of sets of dies of varying dimensions may be employed in conjunction with a single follower in one and the same machine. To this end either the die-carrier or the follower should be revoluble, and either arrangement may be employed.

In Figs. 1 and 2 we have shown a die-carrier or disk, G, revoluble on a base-plate, G′, around the standard F, that carries the follower and its operating-lever. The carrier-disk G is provided with notches *p*, and the base-plate with holes or sockets g^2, for the reception of a locking-pin, *t*, by means of which the carrier is locked against rotation in positioning the

dies relatively to the follower, the base G′ being secured to a suitable wooden base by means of screws g'.

In Figs. 7 and 8 we have shown the standard F revoluble in the die-carrier G, the base G′ being here dispensed with. To lock the standard F against rotation in positioning the follower or plunger relatively to the dies, said standard is provided with recesses v, into which projects the point of a set-screw, S, that works in a standard, S′, rising from the die-carrier. To the upper end of the standard F is pivoted the lever B, for operating the plunger or follower A, the latter being connected to an arm, b^2, of lever B, and said lever is held in its normal position by means of a spring, D, one end of which is secured to an arm, b', of lever B, and the other to a stud, F^2, on standard F.

The follower A is guided in its movements by a sleeve formed on the outer end of an arm, F′, projecting from standard F, and in its under side said follower has a recess, a, for the reception of the cloth shank of the button when operating directly on such button, as hereinafter described.

The lower die consists of the cylindrical die block or section H and the tubular section L, adapted for vertical adjustment on said block, to which end the tubular section is provided with a right-angular slot, d, through which passes a screw, O, screwed into block H, so that the tubular sections may be moved vertically in either direction to the extent of the length of the slot d and locked against vertical movement when in its lowest position by the horizontal branch of said slot, as will be understood.

The upper end of the tubular die-section L is enlarged to form an annular shoulder, l, and in said enlargement are formed two vertical notches, e, Fig. 6, diametrically opposite each other, and an inner peripheral groove, i, merging into said notches or slots for locking the upper-die carrier to said tubular section. The upper-die carrier consists of a ring or sleeve, M, Fig. 5, that is provided with two diametrically-opposite pins, o, so that when said pins are placed in the slots e of the tubular section L and a partial rotation imparted to the carrier to bring the pins into the annular groove i of said section the two will be locked together.

The upper die, N, Figs. 1, 4, and 5, consists of a solid cylindrical block provided with a peripheral groove, f, into which projects a pin, r, that passes through the carrier. The width of the groove relatively to the diameter of the pin is such as to admit of the necessary vertical movement of the die within the carrier when said die is depressed in the operation of making a button. In the under side of the die is formed a recess, n', of substantially the shape of the back of a completed button, the edges x of which recess are knife-edges, so as to adapt them to upset the cloth-retaining plate. The recess n' merges into an axial recess, n, that receives the cloth shank of the button in the operation of uniting the parts thereof.

We have shown and described a construction of dies adapted for uniting the parts of a button of the construction described in our application for Letters Patent Serial No. 236,672, of April 30, 1887, and as shown and described in reference to Figs. 7 to 11 in our Letters Patent of the United States of September 13, 1887, No. 369,787.

It will of course be understood that we do not limit ourselves to this construction of the dies, as they may be constructed for use in covering buttons of the nature of those shown and described in our application for patent of even date with this serial number, or for making any other style of cloth-covered button.

In the accompanying drawings we have shown three sets of dies for three different sizes of buttons; but, if desired, a greater or less number of sets of dies may be employed.

The operation of the machine is as follows: The die-section L of the lower die being moved to its highest position on the die-block H, a cloth disk, g, is placed on the shoulder l, and on this is placed the button head or disk, the cloth shank b, and the back or shank-retaining plate, as shown in Fig. 3. The follower A, by means of lever B, is then depressed to force the parts down into section L onto the block H, in which operation the fabric is bent over the edge of the button head or disk, as shown in dotted lines in said Fig. 3. The follower, being provided with an axial recess, receives the button-shank b and serves as a guide thereto to prevent lateral displacement when the parts referred to are forced into the die-section L by said follower. The tubular die-section L is now forced downward by hand as far as this can be done, and the die N is secured to said section by means of its carrier M, as above described, a cloth-retaining plate, s, having first been inserted into the recess n' in the under side of said die. The plunger is again depressed to force the die N down to the limit of its motion and unite the parts of the button, substantially as described in our application for Letters Patent, Serial No. 236,673, above referred to.

Having now described our invention, what we claim is—

1. In a machine for making cloth-covered buttons, the combination, substantially as described, with a vertically-movable follower and a lower die comprising a stationary die-block and a tubular section adjustable vertically thereon, of an upper die detachably connected to and movable vertically in the tubular section of the lower die, whereby the follower is adapted to co-operate directly with the lower die or operate the upper die, for the purpose specified.

2. In a machine for making cloth-covered buttons, the combination, substantially as described, with the lower die comprising a die-block and a tubular section adjustable vertically

thereon, of an upper die comprising a die-carrier, and a die detachably secured thereto and adapted to move vertically therein, and a locking device for locking the die-carrier to the tubular section of the lower die, for the purpose specified.

3. In a machine for making cloth-covered buttons, the combination, substantially as described, with a stationary standard and a follower movable in bearings on said standard, of a die-carrier plate revoluble on the standard, a locking device to lock said carrier into position relatively to the follower, a plurality of lower dies comprising a die-block secured to the carrier, a tubular section adjustable vertically on the die-block, and a plurality of upper dies detachably secured to the tubular sections of the lower dies and movable vertically therein, whereby the follower is adopted to co-operate with the lower dies independently of the upper dies, for the purpose specified.

4. In a machine for making cloth-covered buttons, the combination, substantially as described, with the lower die comprising a stationary die-block and a tubular section adjustable vertically thereon, said tubular section having its upper end enlarged, of an upper die, a carrier in which the upper die is movable vertically, a stop to limit the motion of said die within the carrier, a locking device for locking the carrier to the enlarged portion of the tubular section of said lower die, and a follower for operating the upper die, for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

GOTTLIEB HEIDMANN.
EMIL HÖTTGES.
CARL EGEN.

Witnesses:
GEO. KOCH,
EWALD HEIMHOFF.