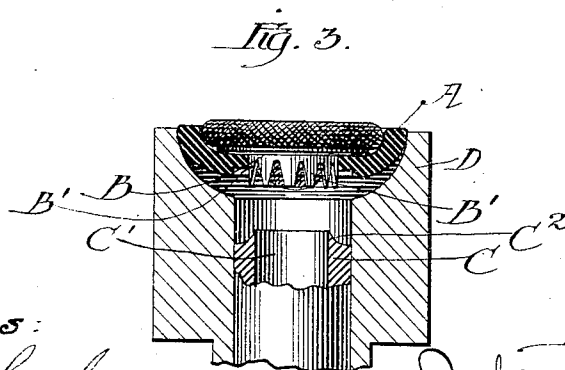
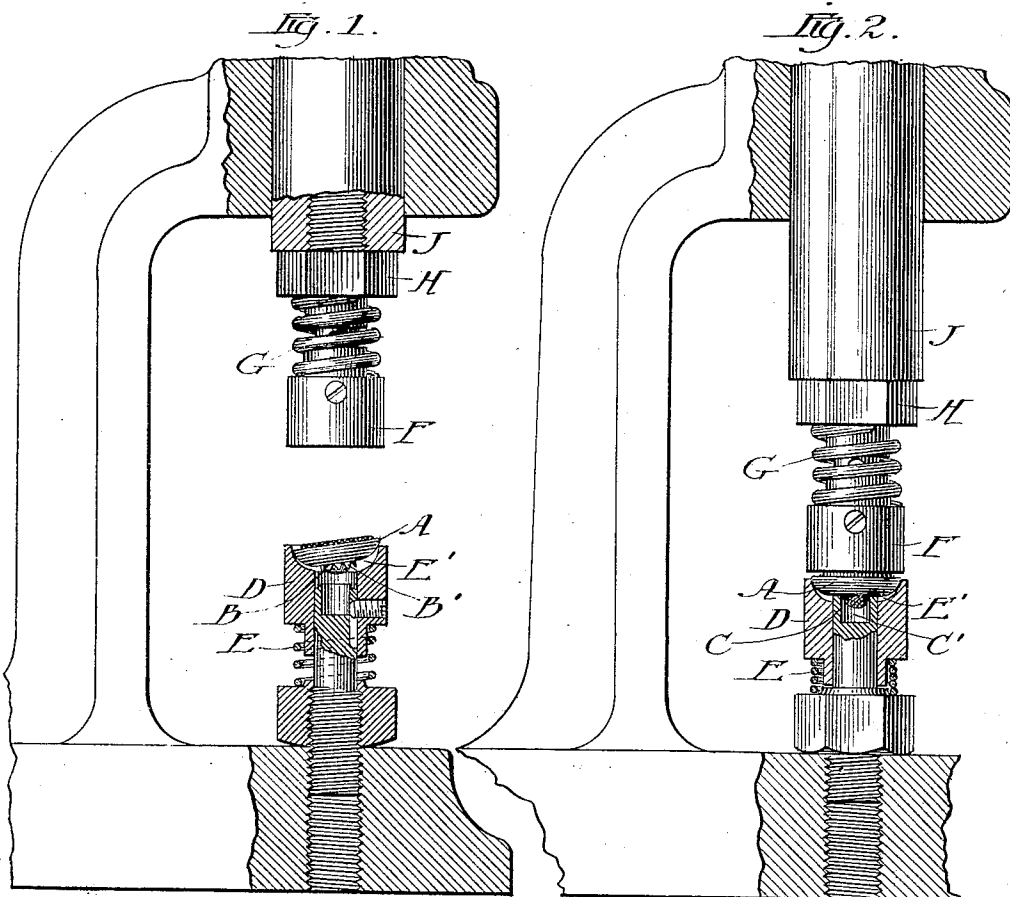


J. G. BREITENSTEIN.
 BUTTON MAKING MACHINE.
 APPLICATION FILED MAR. 16, 1908.

988,304.

Patented Apr. 4, 1911.



Witnesses:
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UNITED STATES PATENT OFFICE.

JULIUS G. BREITENSTEIN, OF CHICAGO, ILLINOIS, ASSIGNOR TO INDEPENDENT BUTTON & MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION.

BUTTON-MAKING MACHINE.

988,304.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed March 16, 1908. Serial No. 421,529.

To all whom it may concern:

Be it known that I, JULIUS G. BREITENSTEIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Button-Making Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved device for clenching together the parts of a button, of which one part upon which the other is to be clenched is of non-metallic material; such as hard rubber, celluloid, bone, ivory, glass, or other substance more easily frangible than metal.

It consists of the devices and features of construction shown and described as indicated in the claims.

In the drawings:—Figure 1 is an axial section through the upper and lower die elements of a button press embodying this invention, the parts being shown separated, and with the button to be operated upon lodged on the lower element. Fig. 2 is a similar section showing the parts closed together at the completion of the clenching process. Fig. 3 is a detail section on a larger scale, of the lower die and button lodged therein ready for clenching, the outer shell of the button being shown in axial section.

The particular form of button for which the die parts shown in the drawings are especially designed is one in which there is provided a back shell of hard rubber or other like material which is retained by the collet, which, for that purpose, is provided with an extension from its inner circumference taking through the central aperture of the back shell for clenching out and back upon the rear surface of the shell around the margin of the central aperture through which the clenched extension of the collet protrudes and through which also protrudes the cloth tuft with which the button is provided for securing it to a garment.

In Fig. 3 of the drawings, in which the button is shown partly in section, the subordinate elements, other than the collet and back shell and tuft, of the button are not separately seen, but it will be understood that a button of ordinary construction in respect to these subordinate elements is intended. The parts of the button concerned in the operation are the back shell, A, of

hard rubber or other material of the sort indicated, and the collet, B, having the clenching marginal portion, B¹, at its inner circumference extending through the central aperture of the back shell for clenching on to the latter. This marginal portion, B¹, is usually and preferably subdivided by slits or notches reducing it to clenching fingers or teeth as shown. For clenching these fingers or teeth outward and back upon the back surface of the shell, A, there is provided the clenching die, C, in the lower member of the press having the central aperture, C¹, into which the tuft of the button protrudes, and the annular concave and sloping marginal portion, C², for turning outward and clenching down the clenching marginal portion, B¹, of the collet. For centering the button properly with respect to the clenching die, C, there is provided an outer element or button carrier, D, which telescopes on to the central element, C, of the lower die and is upheld by a spring, E, with its upper surface above the upper end of the central clenching die, C. This upper surface is hollow concentrically with respect to the clenching die for receiving and centering the button above the latter, the cavity, E¹, for that purpose being tapering, either conically or spherically, so that buttons of different sizes within the limit of the capacity of the cavity may be centered in the same device. In the upper head of the press there is carried a flat-end follower die, F, backed up by a spring, B, interposed between it and a stop nut, H, the follower being mounted for reciprocation on the central reciprocating stem, J, on which the stop nut is screwed.

When a button with its parts assembled ready for clenching is lodged in the saucer-shaped or tapered cavity in the upper end of the button carrier, E, whether it be lodged centrally or obliquely in the cavity, the follower, F, descending upon it and striking its highest point readily settles it centrally in the cavity of the carrier so that the further descent of the upper head and follower forcing down the carrier against the resistance of its supporting spring, E, forces the button on to the clenching die for clenching outward the marginal clenching portion of the collet, as described. In the first step of this process, it will be observed that the button is clamped or grasped between the car-

rier and the follower with only the pressure necessary to compress the upholding spring, E, which is a comparatively light spring; but when the descent of the carrier brings the button to the clenching die, the parts are grasped and pressed between the clenching die and the follower with a force determined by the tension of the much heavier spring, G, which backs the follower, and the tension of this spring is designed to be sufficient to effect the clenching. If this clenching were done by positive pressure between the two parts approaching each other within exact and determined distances, the slight variations between the thickness of the shells would cause some shells to be cracked by the unyielding grasp to which they would be subjected between the clenching die below and the follower above, while other shells being thinner might not even be firmly grasped by the clenching margin of the collet, which in that case would be only folded down loosely on to the back shell of the button, giving an unsatisfactory result. By employing the spring, G, of sufficient tension to insure the clenching but adapted to yield slightly, the breaking pressure upon the shell is avoided, and the shells of considerably varying thickness may be operated upon with uniform results as to tightness of the clenching and integrity of the shell.

I claim:—

1. In a button-making machine, in combination with a lower fixed and an upper reciprocating head, a clenching die in the lower head; means associated therewith for centering the button thereabove, and a yielding follower carried by the upper reciprocating head, between which follower only on the one hand and the lower fixed head on the other hand the button is bodily engaged for clenching.

2. In a button-making machine, in combination with a lower fixed and an upper reciprocating head; a clenching die fixed in the lower head; a spring-supported button carrier concentric thereabout having in its upper end a tapering cavity for seating the button and centering it with respect to the clenching die; a flat-faced follower carried by the upper head and mounted thereon with capacity for movement longitudinally thereof, and a spring for yieldingly pressing it toward the clenching die.

3. In a button-making machine, in combination with two dies, one of which is adapted to be reciprocated toward and from the other, one of them having a clenching element, an outer yielding element for seating the button relatively to the clenching element, and a spring which affords such yieldingness, one of said dies yielding bodily away from the other with all its parts which are in contact with the button, and a spring which affords such yielding action, said last mentioned spring being stronger than said first mentioned spring.

4. In a button-making machine, in combination with a lower fixed and an upper reciprocating head, a central clenching die in the lower head; a spring-supported button-carrier thereabout, having in its upper end a tapering cavity for seating the button concentric with the clenching die, and a yielding flat-faced follower carried by the upper reciprocating head.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 26th day of December, A. D., 1907.

JULIUS G. BREITENSTEIN.

Witnesses:

M. GERTRUDE ADY,
CHAS. S. BURTON.