

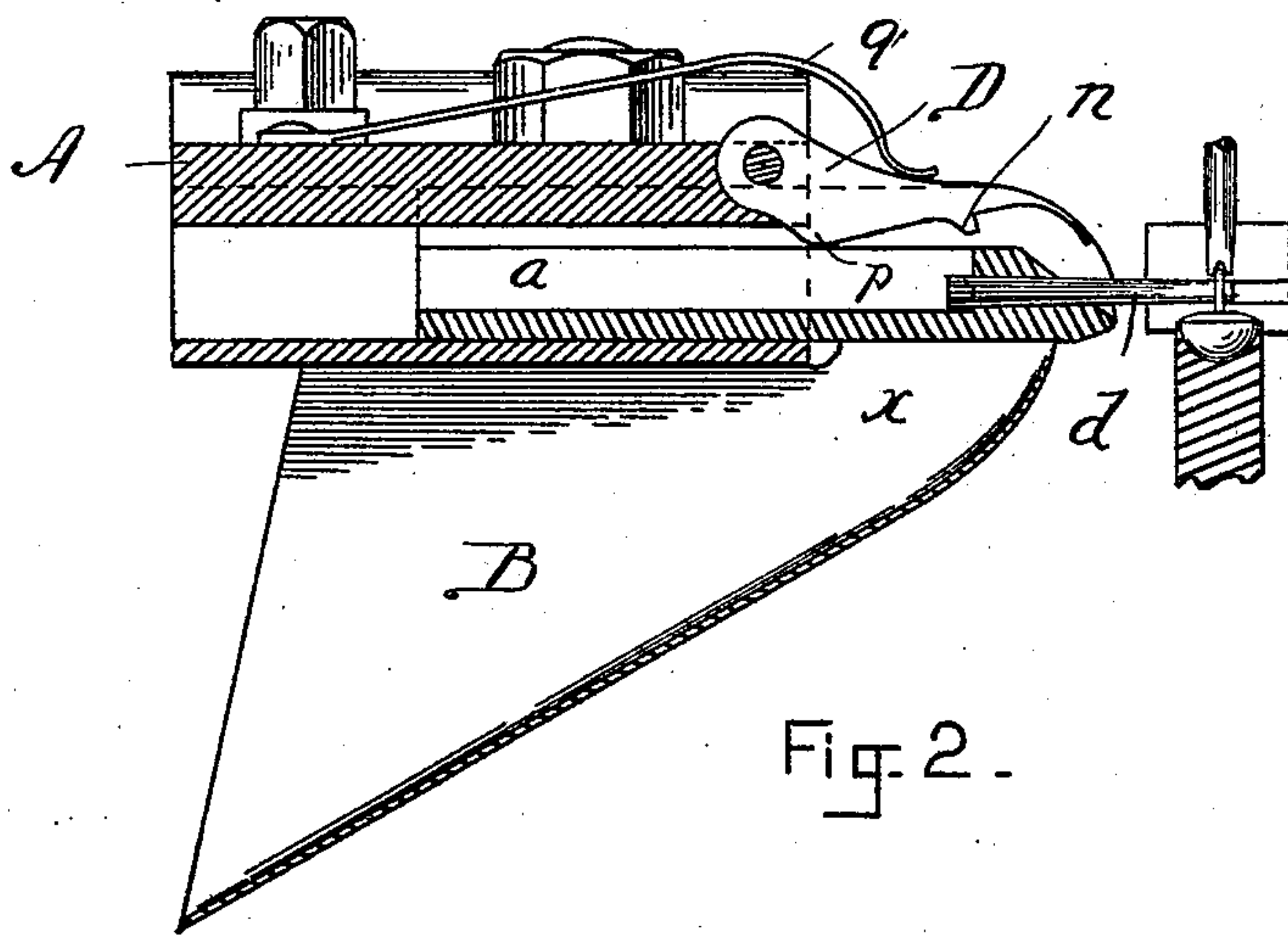
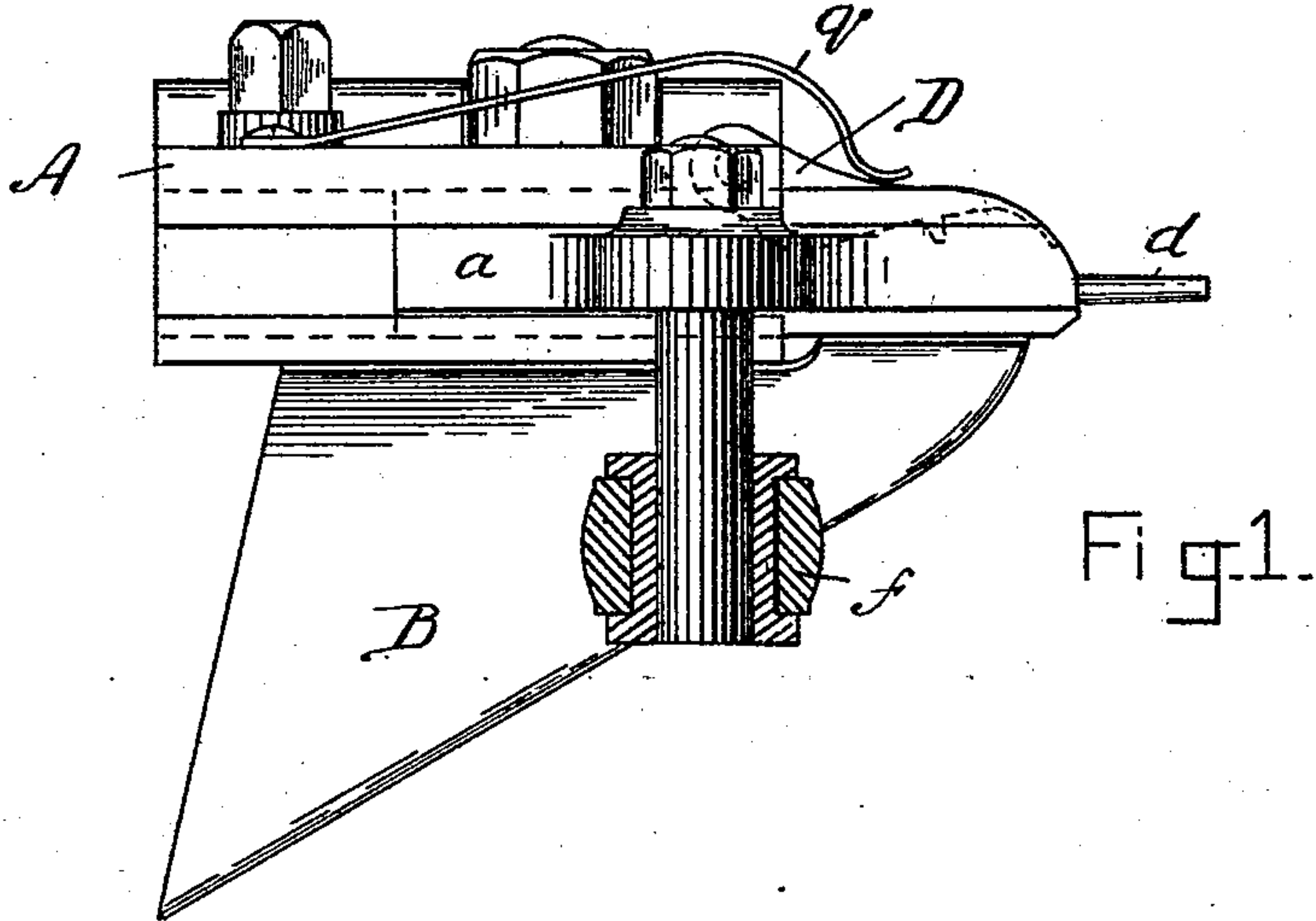
(No Model.)

4 Sheets—Sheet 1.

C. S. GOODING & V. BEAUREGARD.
MECHANISM FOR BUTTON MACHINES.

No. 459,375.

Patented Sept. 8, 1891.



WITNESSES:
G. M. Chamberlain
J. W. Garfield

INVENTORS:
Chas. S. Gooding.
Victor Beauregard,
by Chapin & Co.
Attys.

(No Model.)

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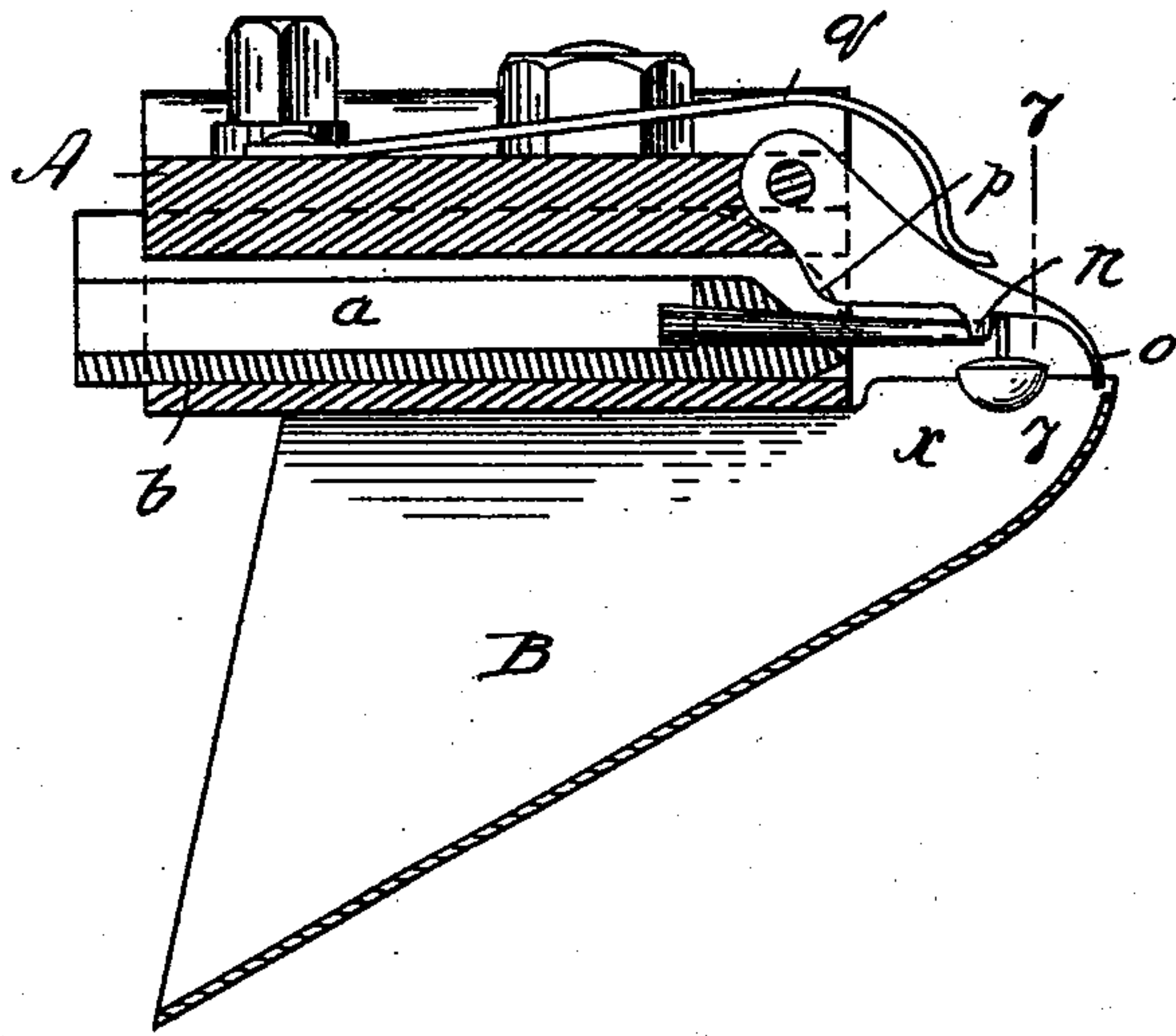


Fig-3-

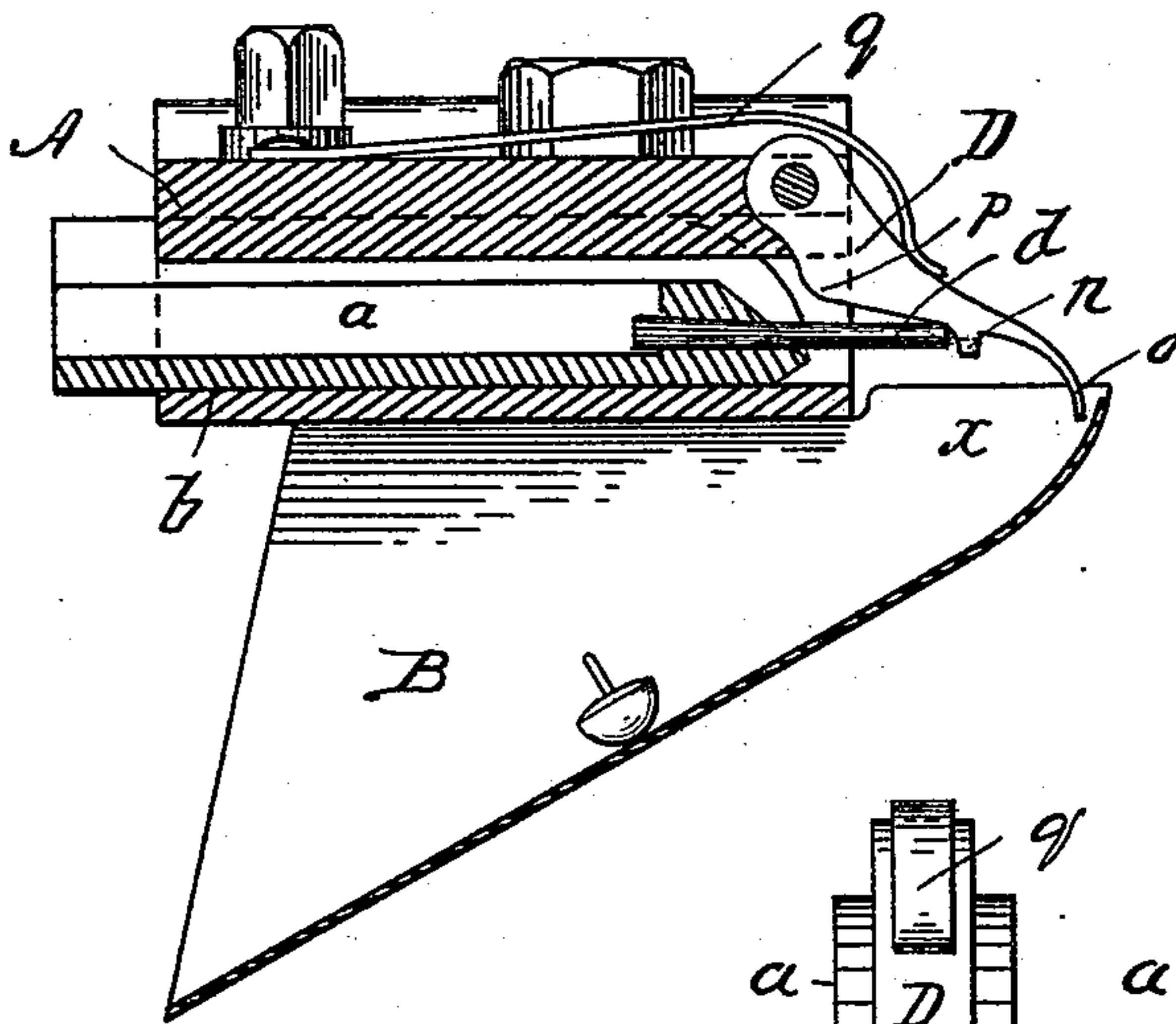


Fig.4-

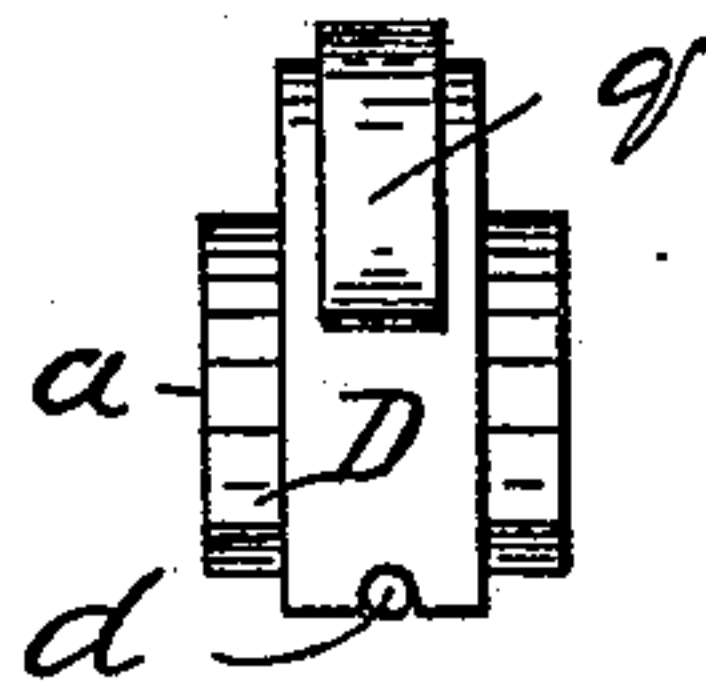


Fig-6-

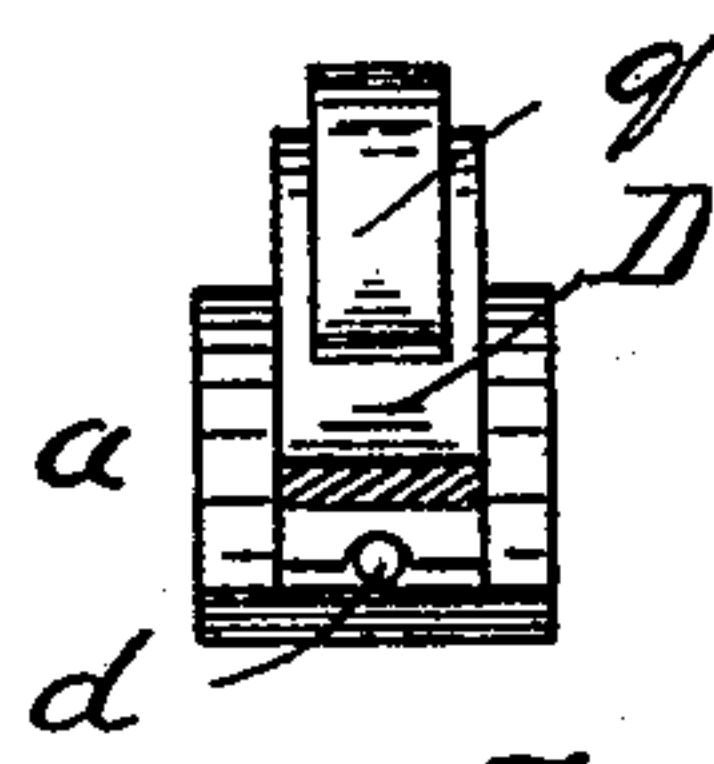


Fig-7-

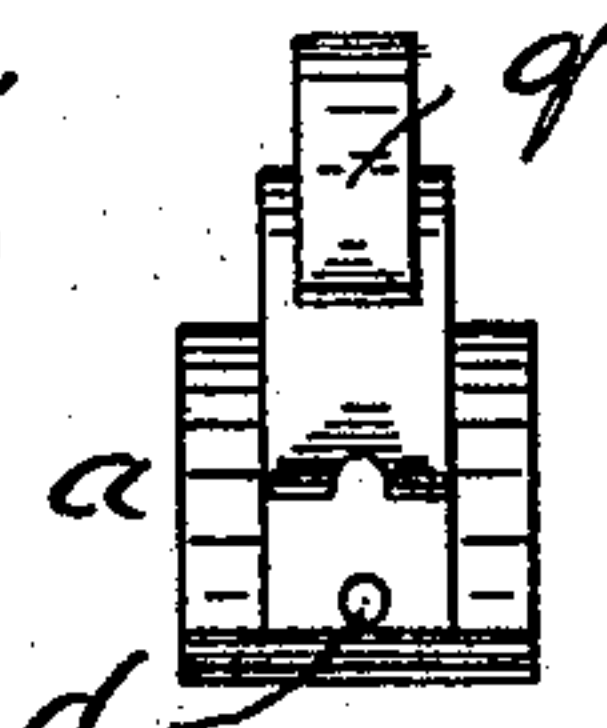


Fig-5-

WITNESSES:
G. M. Chamberlain.

J. W. Garfield

INVENTORS:
Chas. S. Gooding.
Victor Beauregard

by
Chapman & Co. Attys.

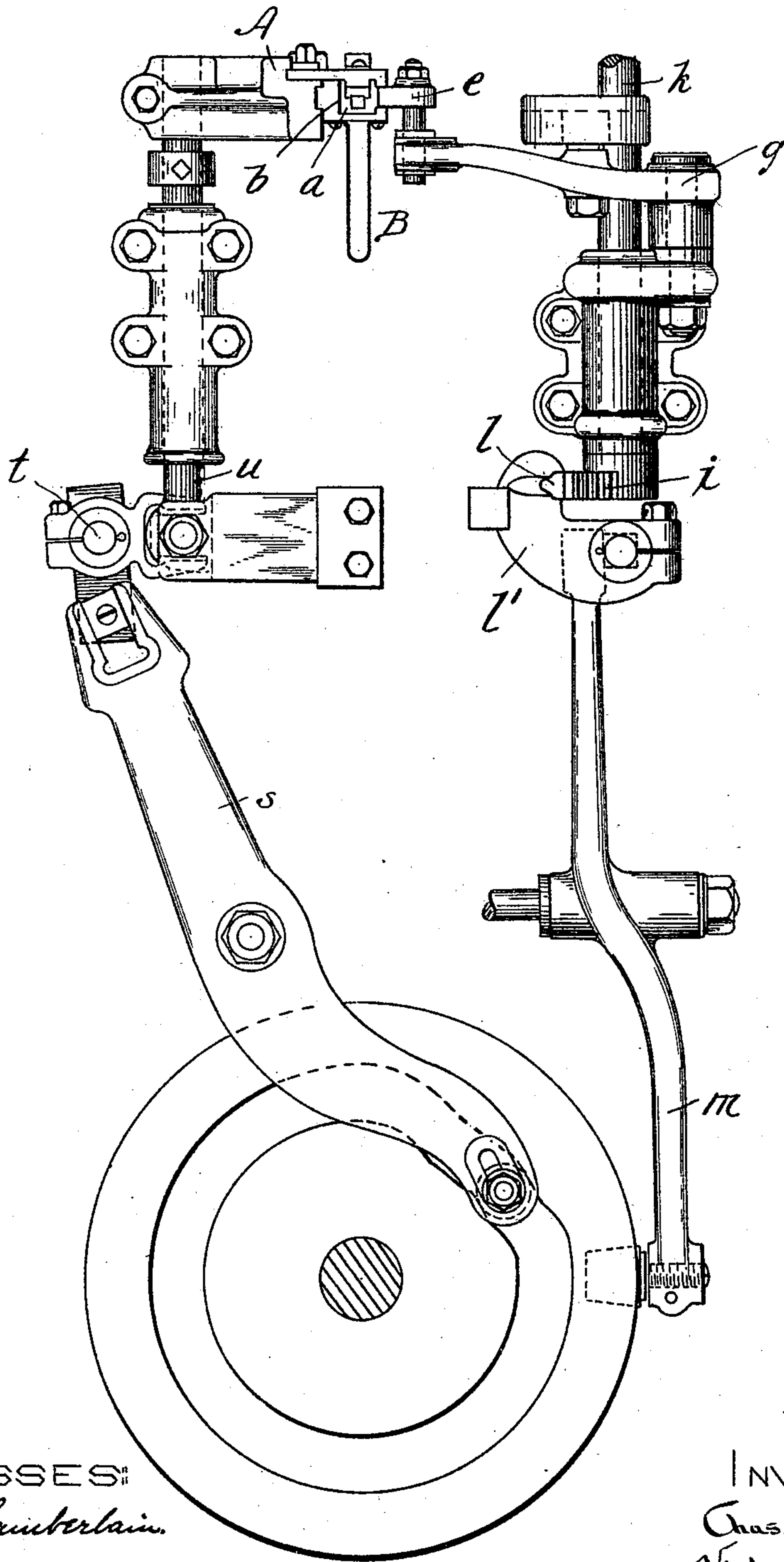
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WITNESSES:
G. M. Chamberlain.

J. W. Garfield.

Fig. 8.

INVENTORS:
Chas. S. Gooding
Victor Beauregard

by
Chapin & Co. Attys.

(No Model.)

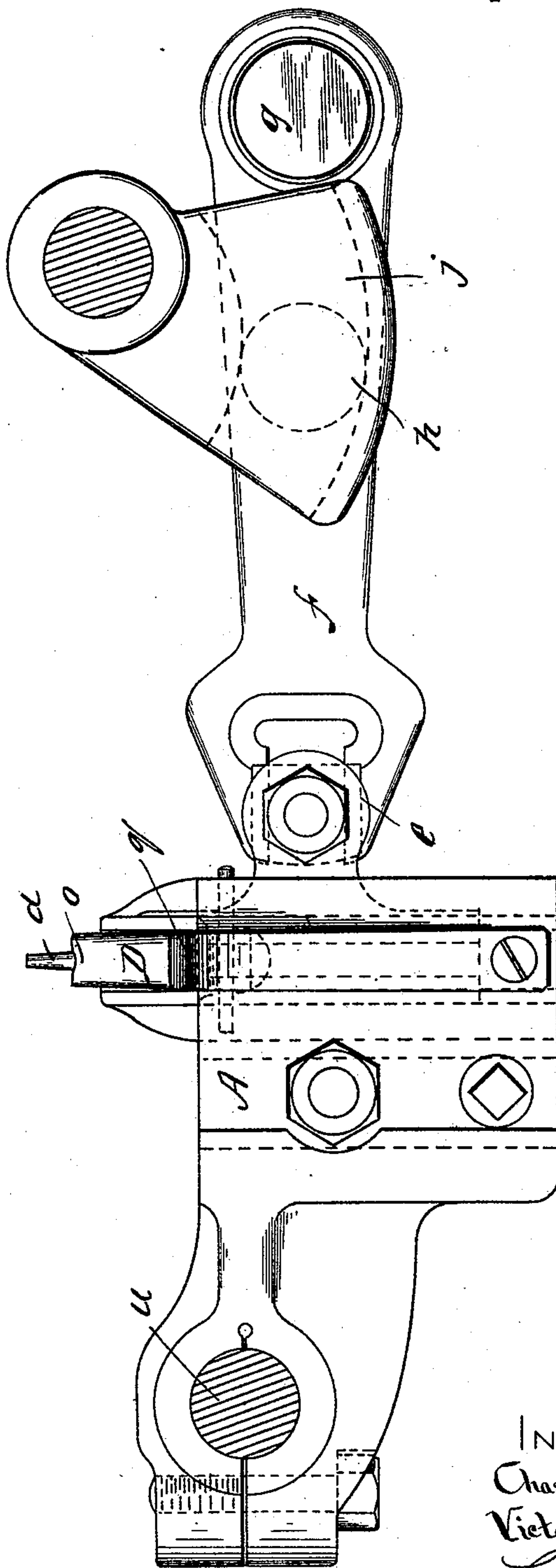
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Fig-9-



WITNESSES:

G. M. Chamberlain.

J. D. Garfield

INVENTORS:

Chas. S. Gooding.

Victor Beauregard.

by Chapin & Co.
Attys.

UNITED STATES PATENT OFFICE.

CHARLES S. GOODING AND VICTOR BEAUREGARD, OF BOSTON, MASSACHUSETTS, ASSIGNORS TO THE MORLEY BUTTON MANUFACTURING COMPANY, OF SAME PLACE.

MECHANISM FOR BUTTON-MACHINES.

SPECIFICATION forming part of Letters Patent No. 459,375, dated September 8, 1891.

Application filed December 12, 1890. Serial No. 374,508. (No model.)

To all whom it may concern:

Be it known that we, CHARLES S. GOODING and VICTOR BEAUREGARD, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Button-Ejecting Mechanisms for Button-Machines, of which the following is a specification.

10 This invention relates to improvements in button clearing or ejecting devices for button-making machines, and particularly machines wherein the eye-shank is formed and supported on a "forming-pin," and the head
15 is then engaged with and formed upon the leg portions of the eye-shank, such a machine being fully shown and described in an application filed by Charles S. Gooding and Robert L. Ellery, under date of December 12,
20 1890, Serial No. 374,516.

The principal objects of the invention are the provision of an efficient device for the purpose stated which is most simple in construction and certain of operation, and also
25 one having guard capabilities to prevent by any possibility or chance the ejected button from bounding back into proximity to the dies to clog or injure the rapidly-running machine.

The invention consists in part in the combination, with a suitable support, of a slide or part movable thereon and carrying the eye-forming pin, a member mounted adjacent to said slide having a guard-finger, and means for normally maintaining the said guard-finger in a depressed position in advance of the
35 forming-pin, and means for raising the said guard-finger on the forward movement of the pin to permit said pin to pass forward of the guard-finger.

40 The invention further consists in the combination, with a suitable support, of a slide movable thereon and carrying an eye-forming pin, and a member having a clearing-finger pivoted adjacent said slide and spring-pressed and adapted to be swung to present
45 the clearing-finger into proximity to a line axially coincident with said pin.

The invention furthermore consists in the combination, with the eye-forming pin and a

support therefor, of coacting instrumentalities and parts peculiarly constructed and arranged, all substantially as will hereinafter more fully appear, and be specified in the claims.

Referring to the accompanying drawings, 50 Figure 1 is a side elevation of the button-ejecting device comprising the eye-forming pin. Fig. 2 is a central vertical section of same. Figs. 3 and 4 are similar sections to Fig. 2, the parts, however, being shown in
60 different positions. Figs. 5 and 6 are end views of the forming-pin and slide therefor, a member comprising the ejector and guard being shown as in different positions corresponding to Figs. 2 and 4, respectively. Fig. 65
7 is a view of the same parts, the movable member thereof in cross-section indicated by line 7 7, Fig. 3. Fig. 8 is a view in elevation showing the devices for supporting and moving the mechanism of the present invention
70 as adapted for use in the button machine already devised and demonstrated. Fig. 9 is a plan view of certain of the parts seen in the preceding figure.

It will be here mentioned, particularly with
75 respect to the forming-pin, that such pin is forwardly presented in advance of the support A, and, as particularly seen in Figs. 1, 2, and 7, momentarily remaining, during which time the eye-shank is formed about and supported on said pin and the button-head formed
80 on and engaged with said eye-shank. The eye-forming and button-head forming devices are then moved free from the button, leaving same suspended on the forming-pin *d*. The
85 said pin then recedes within the end of the support A, the suspended button being stripped therefrom and knocked into the chute B to be guided out of the machine.

a represents the slide-piece carrying at its
90 forward end the forming-pin and movable in the direction of the length of the pin within the slideway *b* in said support A. The reciprocatory movement of the slide *a* is by means of the connection with the lug *e* thereof of
95 the swinging arm *f*. The motion may be imparted to the said arm in any desired manner; but in the organization of the machine

in which the present novel mechanism is to be comprised the said arm is pivotally mounted by its one end, as at *g*, is provided with a stud *h*, and with said stud engages a grooved cam comprised in the arm *j*, affixed on the rock-shaft *k*, the rocking motion being imparted to the shaft through the engagement with the segmental gear *i* thereon of the rack-bar *l*, fixed on a slide-piece *l'*, receiving its reciprocatory movement from the cam-operated lever *m*.

D represents the member which comprises both the clearing-finger *n* and the guard-finger *o*, the same being pivotally mounted to swing into the horizontal plane generally coincident with the axis of the pin *d* on the end portion of the support A, which will be herein termed the "forward" end thereof. The said member D at its under side, between its pivotal end and the clearing-finger *n*, is made full or protruding, as at *p*, to form, in substance, an abutment for a cam action, and the forward end of the slide *a* is also forwardly and downwardly inclined, being formed into nose shape, as shown. The spring *q* exerts the desired tendency of the member D to always downwardly swing when permitted so to do. The slide-piece *a* is at its upper central and rear portions channeled out to avoid excessive weight. The chute B is secured on the under side of the support A, the forward end thereof being open and extending beyond the forward end of the said support, and thence inclines downwardly substantially as shown. Of course as the slide *a* is forwardly moved to project the forming-pin to its position relative to the other button-making devices of the machine, as indicated in Fig. 2, the abutment by the forward inclined portion of the said slide-piece against the protruding part *p* of the then depressed member D forces the member upwardly into the position shown in Figs. 1 and 2, the same being maintained in said swung-up position during a considerable portion of the button-forming operation of the machine by the rest thereof upon the back of the slide, such raising of the member D clearly permitting the projection of the pin in advance of both the clearing and guard fingers thereof. The button having been formed, as the slide *a* recedes, carrying the button rearwardly on the pin, the contact between the slide and the member D is removed when the member is downwardly pressed, so that the clearing-finger thereof bears upon the button-supporting pin until the end of the said pin passes the clearing-finger, as indicated in Fig. 3, when the button will be stripped off and knocked upon the bottom of the chute, and then all obstruction to the most excessive downward swing of the member D being removed so far as same is in any way constituted by the slide and pin carried thereby said member D in practice still has a slight further downward swing until the point of the guard-finger is upon or very near to the base of the chute

thereunder. It will be readily understood that simultaneously with the dropping of the button into the chute, the orifice *x* thereof being covered and closed, the button by no possibility can rebound forwardly out of the chute to make bad work in the button-making instrumentalities, but must pass out of the chute at the large end thereof.

The guard device comprised as a part of the member D, adapted to move to close the orifice of the chute, or, in other words, to be interposed between the stripped-off button and the button-forming mechanism, is most useful and desirable, for in the running of a button-machine substantially such as hereinbefore referred to, having such guard device applied thereon, there will be no occasion for anxiety based upon the finished button being misdirected and thrown into the dies, and while of course it is a matter of great desirability that the guard and clearing fingers be both comprised as a part of the member D the clearer device might be equipped in the mechanism to act independently of the said member D.

In the button-making machine hereinabove referred to it was deemed expedient that the forming-pin *d*, in addition to its forward and backward horizontal movement, should also have a vertical reciprocatory movement, the same being imparted through the cam-operated lever *s*, effecting the rocking of the shaft *t*, which in turn secures the rising-and-falling motion of the slide-shaft *u*, on the upper end of which the said support A is mounted. Such motion, however, in no way affects the operation of the present improved mechanism.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of a suitable support which is movable for carrying an eye-forming pin, a member mounted adjacent to the slide, having a guard-finger, means for normally maintaining the guard-finger in a depressed position in advance of the forming-pin, and appliances for raising said guard-finger on the forward movement of the forming-pin, for the purpose set forth.

2. In a button-machine, the combination, with a support, of a slide movable thereon and carrying an eye-forming pin, and a member comprising a clearing-finger pivoted adjacent said slide and spring-pressed and adapted to be swung to present the clearing-finger into proximity to a line axially coincident with said pin, for the purpose set forth.

3. The combination, with a support, of a slide movable thereon and carrying an eye-forming pin, a member pivotally mounted on said support and provided with the guard-finger, and the protuberance or cam *p* to receive the impact of said slide and the spring, for the purpose set forth.

4. In a button-machine, the combination of a support which is movable and carries an

eye-forming pin, a member pivotally mounted adjacent to said slide and spring-pressed and provided with a clearing-finger and a guard-finger and having a cam protuberance, for the purposes set forth.

5 5. The combination of a suitable support provided thereunder with a chute having an orifice extending forward of the end of the support, a slide movable on said support, carrying an eye-forming pin, a member mounted adjacent to said slide having a guard-finger, means for normally maintaining the guard-finger in a depressed position in advance of the forming-pin and near the base of the chute, and appliances for raising said guard-finger on the forward movement of the forming-pin, for the purpose set forth.

10 6. The combination of the support A, having a chute thereunder, the orifice of which is extended forward of the end of the support, the slide *a*, having the inclined forward end

and the extended top or back and carrying the forming-pin *d*, the member D, pivotally mounted above the said slide on the forward end of the said support and provided with the cam protuberance *p*, clearing-finger *n*, and guard-finger *o*, and a spring for said member, all substantially as described, and for the purpose set forth.

7. In a button-machine, the combination, with a button-forming mechanism, of a forming-pin and a button-clearing device, and a guard and appliances for moving same, so that as the button is detached from the forming-pin the guard will be interposed between the button and the button-forming mechanism, for the purpose set forth.

CHAS. S. GOODING.

VICTOR BEAUREGARD.

Witnesses:

WM. S. BELLOWES,
GEO. H. CUSHMAN.