

(No Model.)

R. H. LEWIS.  
HINGED SHOE BUTTON.

No. 381,477.

Patented Apr. 17, 1888.

Fig. 1.

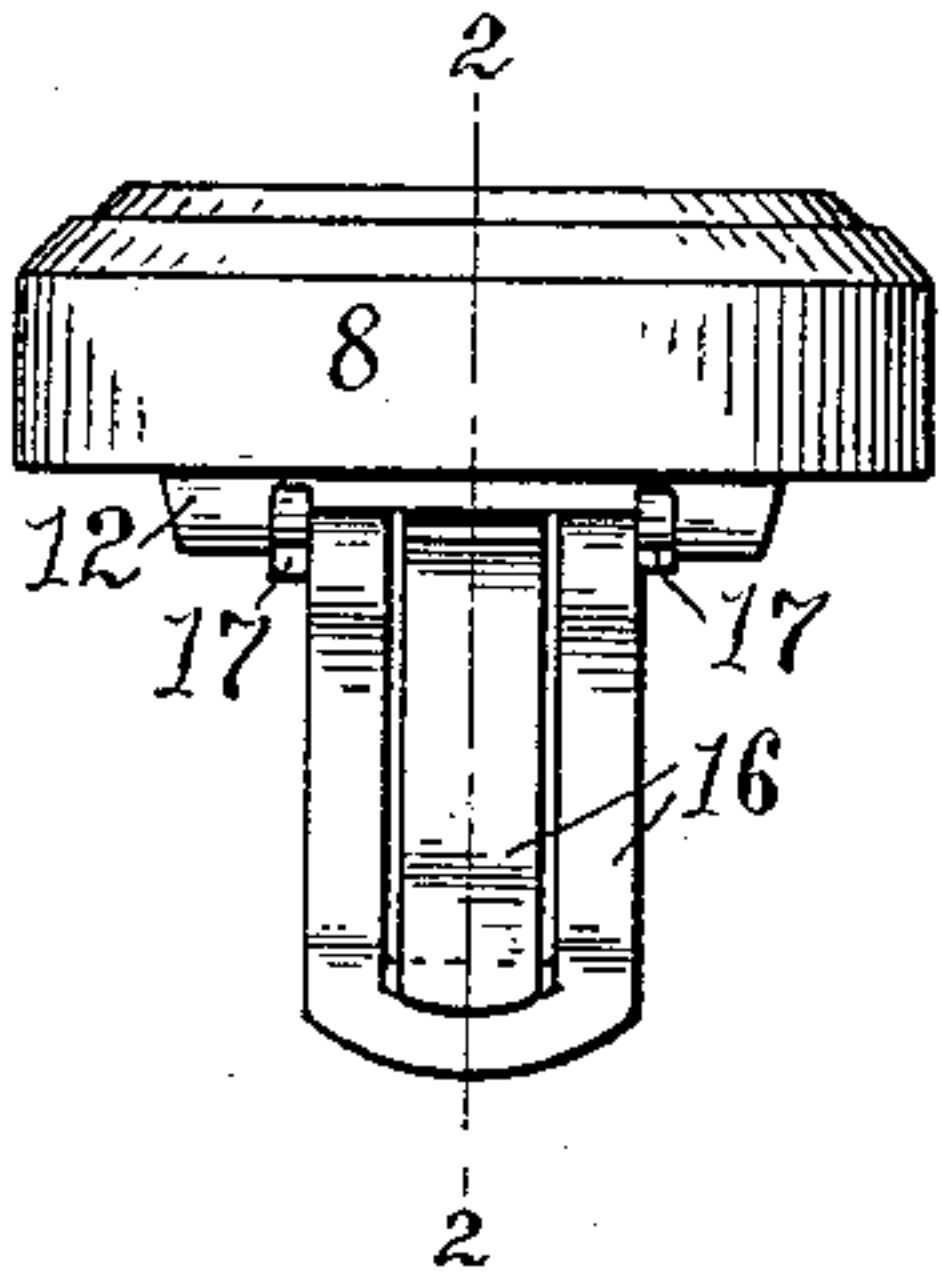


Fig. 2.

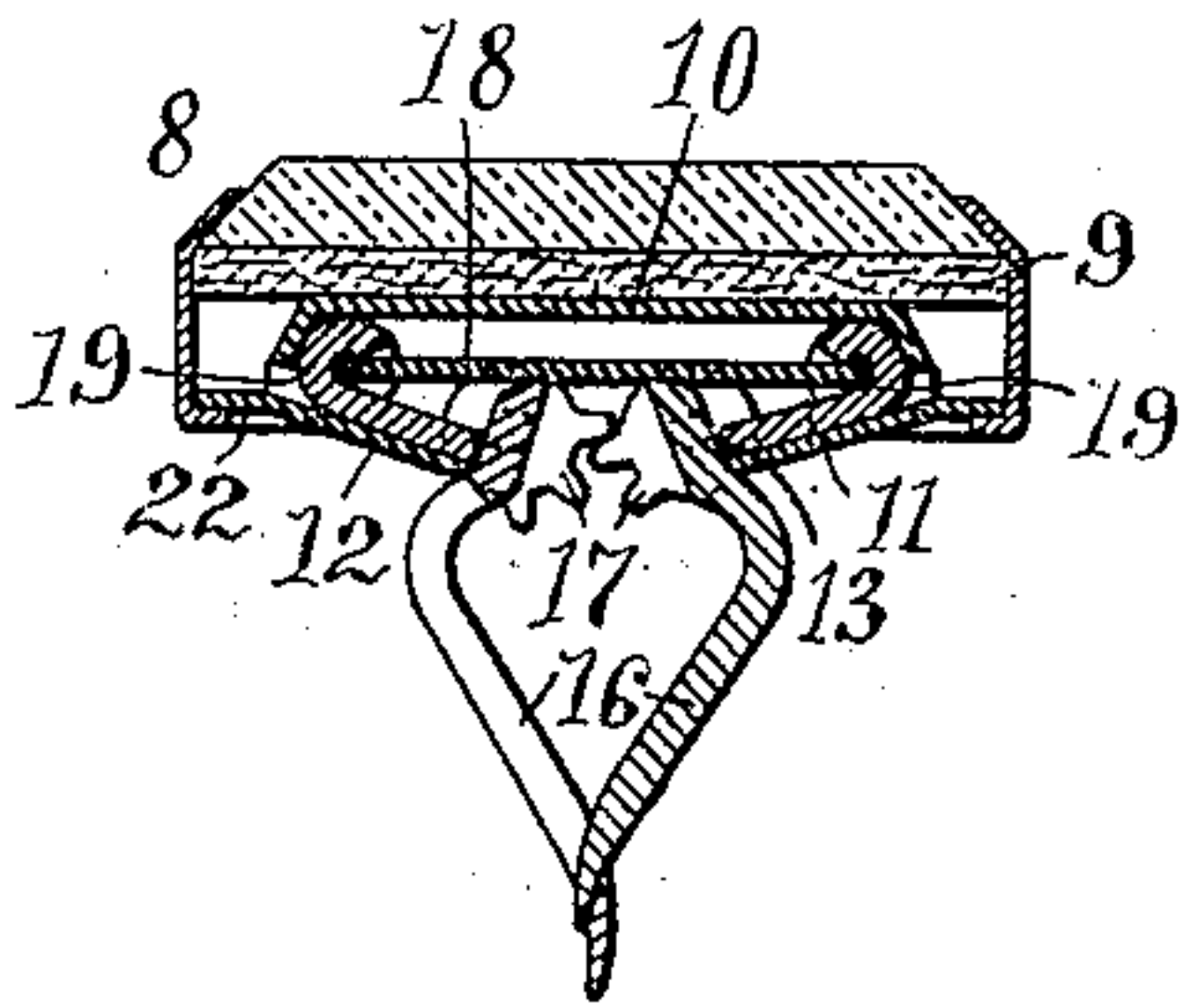


Fig. 3.

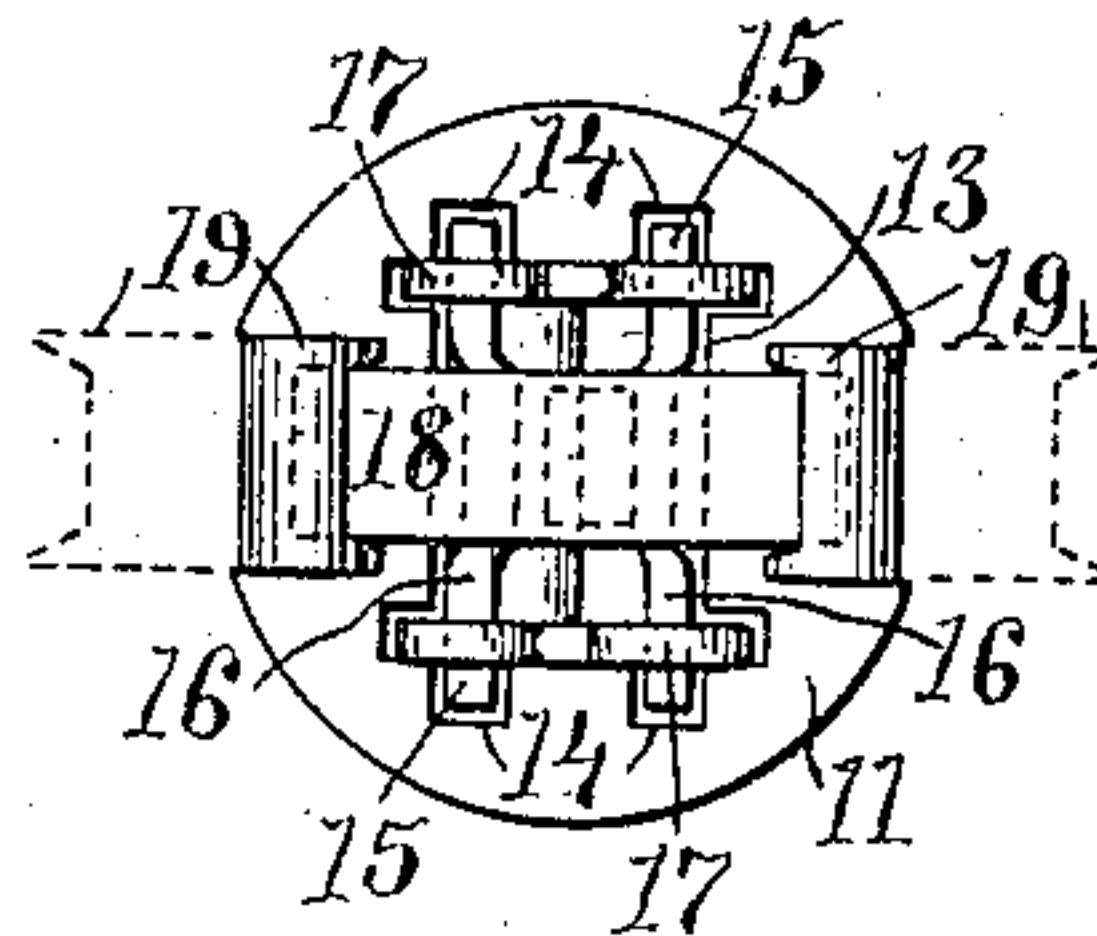


Fig. 4.

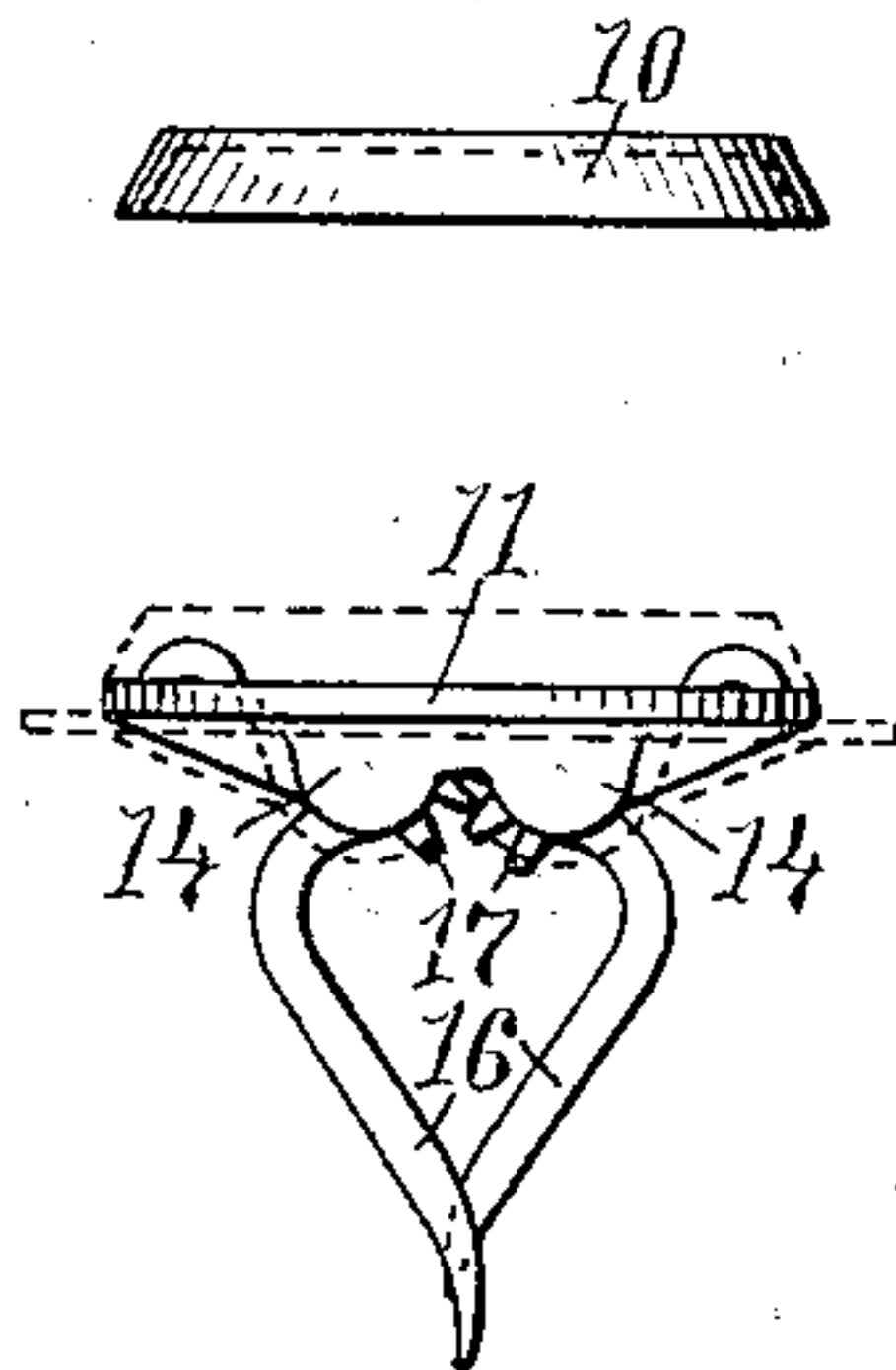


Fig. 5.

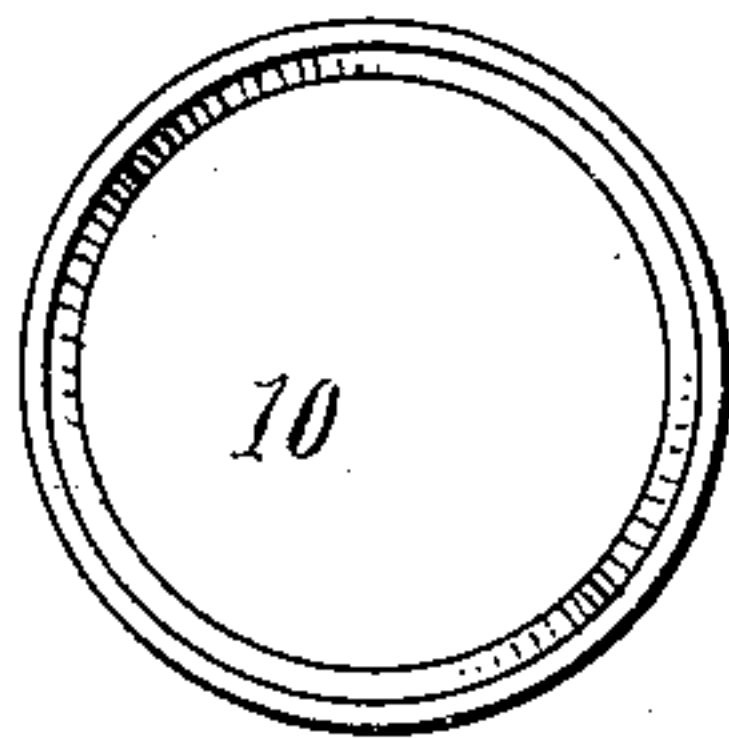


Fig. 6.

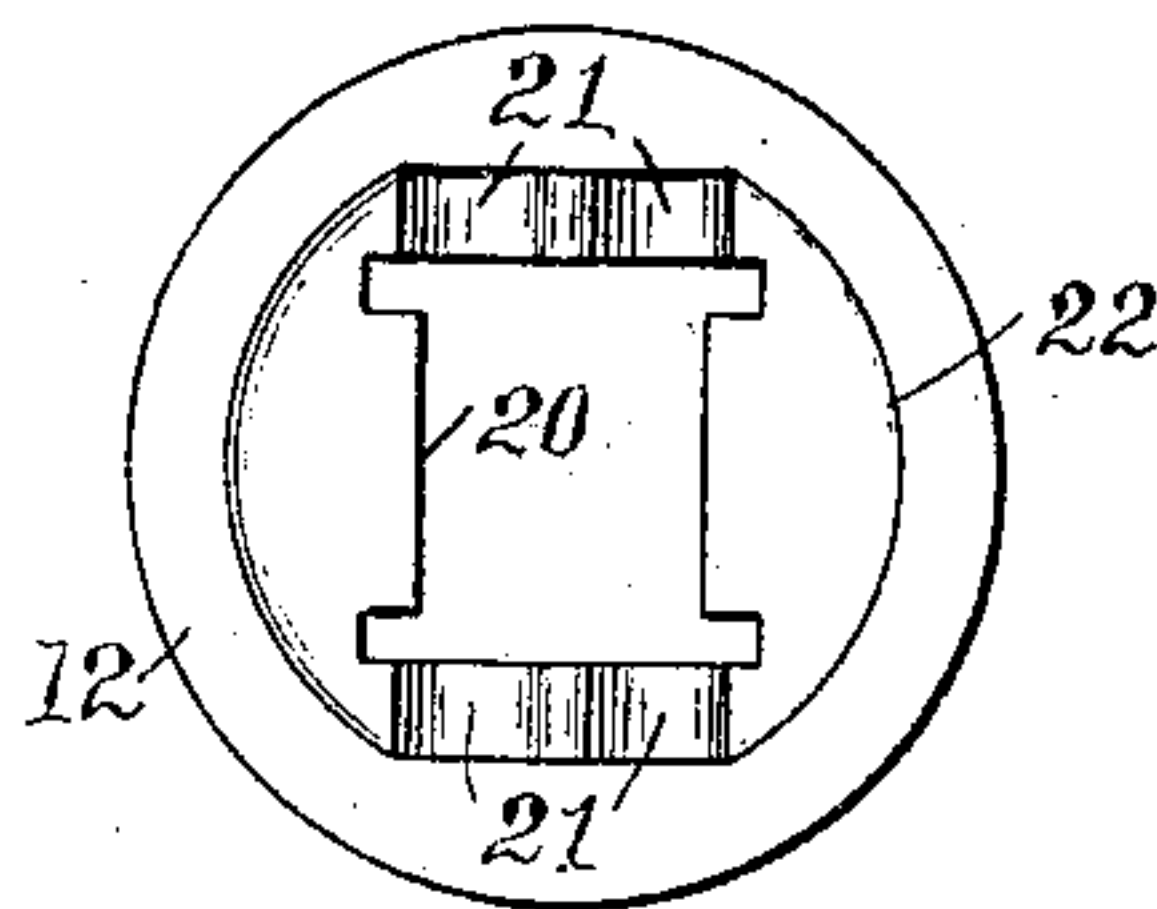
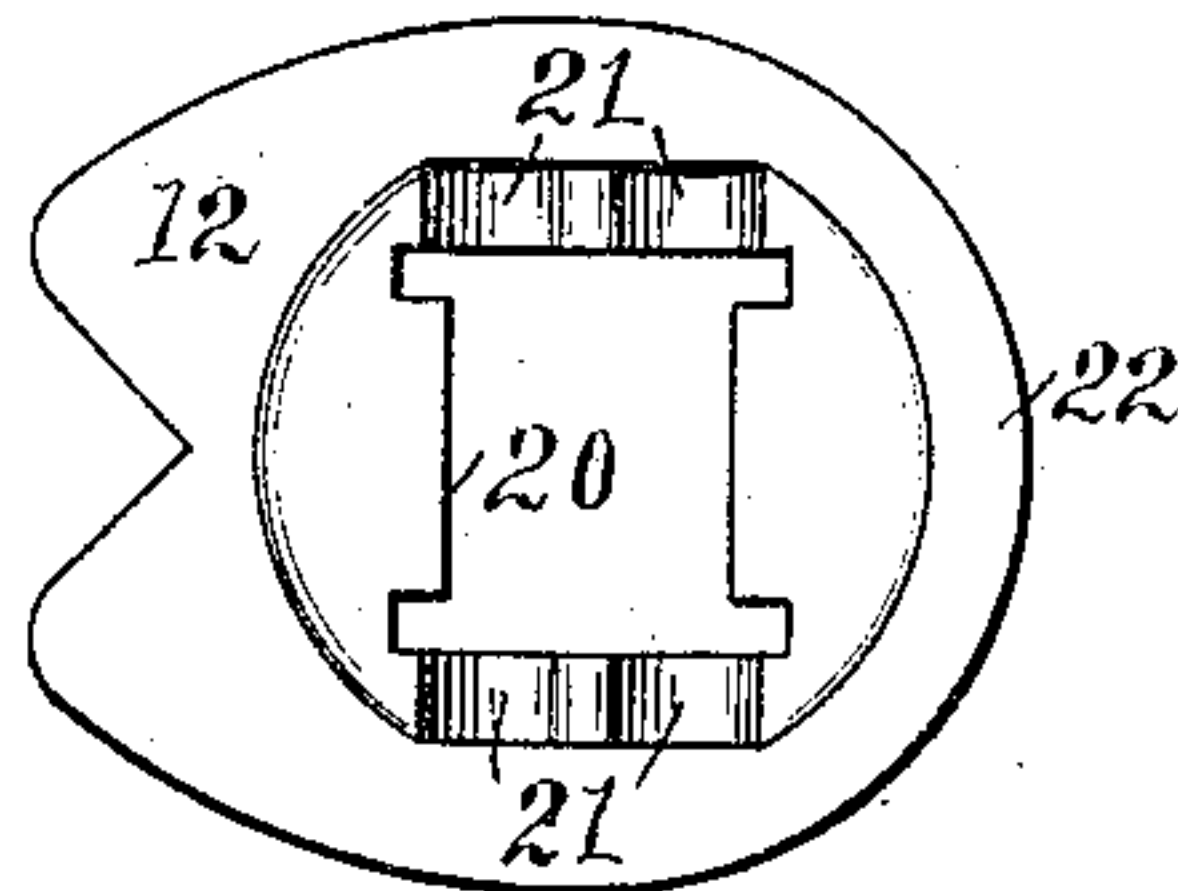


Fig. 7.



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# UNITED STATES PATENT OFFICE.

RUSSELL H. LEWIS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO B. L. HALL & CO., OF SAME PLACE.

## HINGED-SHOE BUTTON.

SPECIFICATION forming part of Letters Patent No. 381,477, dated April 17, 1888.

Application filed November 8, 1887. Serial No. 254,604. (No model.)

*To all whom it may concern:*

Be it known that I, RUSSELL H. LEWIS, of Providence, in the county of Providence and State of Rhode Island, have invented certain  
5 new and useful Improvements in Hinged-Shoe Buttons, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This invention relates to a class of buttons known as "hinged-shoe buttons" which are used as jewelry with wearing-apparel.

The objects of my invention are to improve these buttons by making them more durable  
15 and of a better finish, and to facilitate the making of the same.

To these purposes my invention consists, essentially, in the forked holding lugs or projections formed integral with the hinge-plate  
20 for securing the actuating-spring of the hinged shoe in operative position, and in a finishing back plate conforming in outline to the cap of the button, and formed with a slot for the lever-arms and with recesses for receiving the journal-bearings on the hinge-plate and with a  
25 central depression, all as hereinafter fully described and claimed.

Although I have illustrated my invention as employed with a species of hinged-shoe button known as the "lever-arm," it is to be understood that my improvements are equally as well applicable to the species of button having a post fixed to a button-head with a tilting shoe hinged on the post as they are to the button shown.  
30

In order that my invention may be fully understood, I have illustrated in the accompanying drawings and will proceed to describe the best forms thereof so far devised by me.

40 In the accompanying drawings, Figure 1 is a side view of a hinged lever-arm button having my improvements embodied therein, and Fig. 2 is a sectional view of the same, taken on line 2 2 in Fig. 1. Fig. 3 is a top plan view of the button with the cap and the top plate removed, the dotted lines representing my improved holding projections in an unbent condition—that is, lying in the plane of the hinge-plate, with which they are integral. Fig. 4 is  
45 a side view of the detached top plate, beneath

which is the hinge-plate with the lever arms secured thereto, and beneath this is my improved finishing back plate. These several parts are arranged in the order in which they are to be assembled together, the dotted lines  
55 representing their relative operative positions. Fig. 5 is a plan view of the top plate. Figs. 6 and 7 are plan views, respectively, of two different shapes of my improved finishing back plate, the former being circular and the  
60 latter of a horseshoe outline.

In the said drawings like numbers of reference designate corresponding parts throughout.

Referring to the drawings, the number 8  
65 designates the cap proper of the button, which is shown as being composed of a metallic annular frame or ring with a solid composition setting confined therein. Obviously this cap, which has not to do with the essence of my invention, may be a saucer-like structure of one  
70 piece, or may be of any suitable shape to contain the operative parts, as now to be explained. Within the cap is a soft washer, 9, against which rests the top plate, 10, which  
75 covers over the hinge-plate 11, which in turn is held in operative position by means of the finishing back plate, 12, the edge or margin of which is caught and held by the inturned rim of the cap 8.  
80

The hinge-plate 11 is formed with the central slot, 13, (see Fig. 3,) upon opposite sides of which are made the journal-bearings 14 for the journals 15 of the lever-arms 16 to work in. These lever-arms are provided at each side  
85 near their journals with the intermeshing gears 17, the office of which, as well known, being to cause one lever-arm to respond to the movements of the other. The actuating-spring 18 is engaged by the inner ends of the lever-  
90 arms 16, so as to give to the arms a spring action in their movements. This flat or leaf spring is held securely in operative position by my improved holding device, which forms one part of the present invention, and which  
95 consists in the forked or notched holding lugs or projections 19, formed integral with the hinge-plate 11 and flexed over upon the upper face of such plate, so as to bind one upon each end of the spring 18, set across the plate.  
100



These holding-lugs 19 are cut out with the hinge-plate, as shown in dotted lines in Fig. 3, and are then bent over upon the spring, as clearly indicated in Figs. 2 and 3, and act to prevent any movement of such spring. Especially do they prevent the lateral displacement of the spring.

Another feature of this invention is the finishing back plate, 12, which is formed with a central slot, 20, which is not quite so large as that of the hinge-plate, and upon two opposite sides of such slot are formed the recesses 21, appropriate to receive the similar-shaped journal-bearings 14 on the under side of the hinge-plate. The slot 20 of the back plate is of a suitable shape to allow full play to the lever-arms. This back plate is placed directly up against the under face of the hinge-plate, which it supports in position by virtue of having its edges held by the intumed rim of the cap, as before alluded to. The central portion of the back plate is formed with the depression 22, to make a neater fit against the hinge-plate and to better hold the same. If preferred, the back plate may have its recesses 21 formed to conceal the protruding teeth of the gears 17.

In the trade these buttons are ordered with different designs of heads or caps. For instance, the design might be a plain circular one, like that shown in Figs. 1 and 2, or it might be the design of a horse hoof or shoe, in which latter case it will be seen that some of the plates in the button—in the present case the back plate—must be made to conform to the outline of such design, as shown in Fig. 7. Heretofore it has been the custom for makers of these buttons, in which the novel back plate here shown has not been used, to shape the hinge-plate to conform to the contour of the cap, and then to hinge the lever-arm in such plate, and then finish the button, without, of course, the back plate. In this way the entire button is made up for a certain order. Now, with the use of my finishing back plate, 12, I can keep in stock as made up and so far complete the structure shown detached in Fig. 3 and in the central illustration of Fig. 4, such part consisting in the hinge-plate with the lever-arms mounted therein and the spring set in fixed position, for it will be seen that with my back plate the hinge-plate may be of any form, either circular or octagonal, and still may be used with any design of cap, since the back plate, 19, is the only part to be shaped to suit the design

of the cap or front. In this way I greatly expedite the making of these buttons, since the difficult parts to make can be kept on hand ready-made. By the use of my back plate I am also enabled to give a superior finish to the button, since, instead of being compelled to color or plate the same after the button is put together, I can readily make such a plate out of rolled-gold plate or plated stock which needs no finishing process.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the lever-arms and the hinge-plate, formed with journal-bearings for the lever-arms, and the spring for actuating the arms, the cap for containing the hinge-plate and the spring, of the finishing back plate conforming to the outline of the cap, and provided with a central slot for the passage of the lever-arms, and formed with depressions to receive the journal-bearings of the hinge-plate, such finishing plate placed against the under face of the hinge-plate and concealing the same, and held in position by the cap, substantially as and for the purpose herein described.

2. The combination, with the hinge-plate or equivalent provided with the integral forked holding-lugs 19, of the actuating-spring 18, engaged and held in position by such lugs, substantially as described.

3. The combination, with the cap 8 and the slotted hinge-plate 11, having the lever-arms 16 hinged therein, and the spring for the arms, of the finishing back plate, 12, having the slot 20 and formed with the recesses 21 and the depression 22, such back plate held in position by the rim of the cap and concealing the hinge-plate, substantially as and for the purpose herein described.

4. The combination, with the cap 8, the top plate, 10, set therein, and the hinge-plate 11, having the central slot, 13, and formed with the journal-bearings 14 and the forked holding-lugs 19, the spring 18, held by such lugs, of the lever arms 16, provided with the journals 15 and having the intermeshing gears 17, the finishing back plate, 12, having the slot 20, and formed with the recesses 21 and the depression 22 and held in position by the rim of the cap 8, substantially as described.

RUSSELL H. LEWIS.

Witnesses:

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