Aug. 21, 1934. J. E. RÖHRS 1,970,901

BUTTON

Filed July 8, 1932

Fig. 3

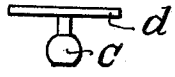


Fig. 1

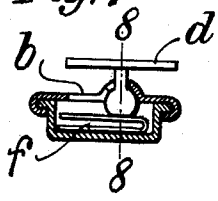


Fig. 4

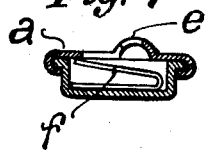


Fig. 6

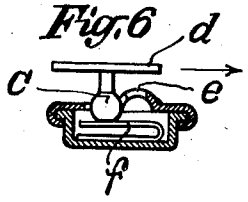


Fig. 2

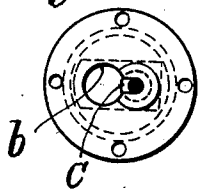


Fig. 5

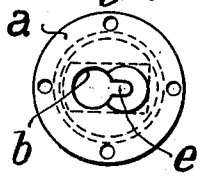


Fig. 7

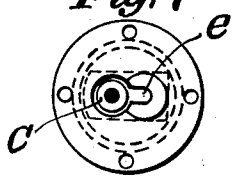


Fig. 8

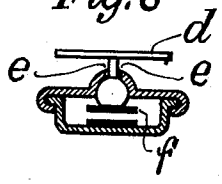


Fig. 9

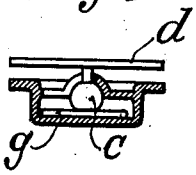


Fig. 14

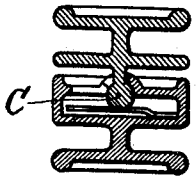


Fig. 12

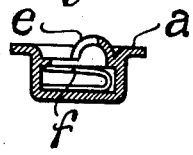


Fig. 10

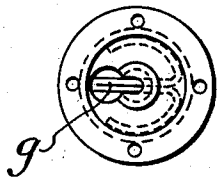


Fig. 15

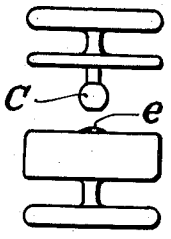


Fig. 13

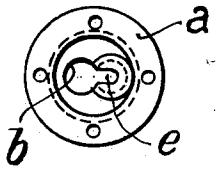


Fig. 11



Johan Ernst Röhrs

Patented Aug. 21, 1934 1,970,901

UNITED STATES PATENT OFFICE

1,970,901

BUTTON

John Ernst Röhrs, Schenefeld, Bezirk Hamburg, Germany

Application July 8, 1932, Serial No. 621,473
In Germany December 1, 1931

1 Claim. (Cl. 24—106)

This invention relates to improvements in buttons, and more particularly to buttons of the so-called sliding type, the object of the invention being to provide a button comprising a female member and a male member, said female member being provided with a slot having an opening for the passage of the head of said male member, a spring member adapted to lock said head in its operative position, being disposed within said female member.

Several illustrative embodiments of my invention and modifications thereof are represented by way of example in the accompanying drawing, wherein:

Fig. 1 is a longitudinal section of the button showing the parts in operative position;

Fig. 2 is a top plan view of the female member;

Fig. 3 is a side elevation of the male member;

Figs. 4 and 5 are, respectively, a longitudinal section and a top plan view of the female member;

Figs. 6 and 7 are a longitudinal section and a top plan view, respectively, showing the position of the operating elements at the moment of the male member entering the female member;

Fig. 8 is a cross-section taken on line 8—8 of Figure 1;

Fig. 9 is a longitudinal section of the button having a wire spring as locking member;

Fig. 10 is a top plan view of the female member of the button according to Figure 9;

Fig. 11 shows in detail the wire spring of the button according to Figs. 9 and 10;

Figs. 12 and 13 are the longitudinal section and the top plan view, respectively, of a female member having an elongated locking slot.

Fig. 14 is a longitudinal section of a stud provided with the operating elements of the invention, and

Fig. 15 is a side elevation of said stud, the parts being shown disconnected from each other.

Referring first to Figures 1 to 8, the reference character *a* designates the female member of my improved button, and *b* is an opening made therein, this opening having annular shape and being provided with an extension, as at *e*, of smaller diameter. The adjacent walls of this extension or slot *e* are made in the form of an upwardly directed projection having substantially spherical shape, this projection being designed for the reception of and serving as a bearing for the male member. This male member designated by the reference character *d*, has a downwardly directed shank which is terminated by a head *c* in the shape of a sphere or ball. Within the female member *a*, there is accommodated a spring *f* having a substantially U-shaped body, and the office of this spring is to secure the head *c* of the male member *d*, after passing it through the opening *b* and shifting it laterally into the slot *e*, in its operative position within the said spherical projection by pressure action. The said spring may either be made as an independent element and fastened to the bottom of the housing of the female member, or the bottom of said housing may be resiliently constructed so as to itself constitute the spring member in known manner.

According to the embodiment shown in Figs. 9 to 11, the spring member is made of wire having a substantially W-shaped body, the legs of which wire are disposed in almost one and the same plane, for only the medial portion of said W-shaped spring *g* is slightly bent upward. This construction of the spring allows of realizing a rather flat or low structure of the housing and of giving smallest possible dimensions to the whole button.

According to the embodiment shown in Figs. 12 and 13, the elongated slot *e* is made longer than in the first instance, and the projection of spherical shape is constructed so as to completely embrace the top of head *c* in its operative position, said spherically made projection thus constituting a perfect ball joint for the said head. The latter may be flattened on its underface, as clearly shown in Fig. 3, in order to allow the free leg of the U-shaped spring body to better contact with and exert a more precise pressure upon said head.

The plate carrying the spherically made projection, might also be arranged countersunk (see Fig. 9), or the outer edge of said plate might be raised, for the purpose of reducing the space existing between both button elements.

In use, operation of my improved button requires but a very little movement in, respectively, axial and lateral direction, and disconnection of the parts is realized, without pulling action, by causing the female member *d* to make a short, lateral displacement in oblique direction, the spring member *f* thereby pushing out the male member. Owing to this fact, the said button is particularly well adapted for use in connection with thin and delicate material.

The button may be applied to the material in question either by thread which is passed through openings made in the male and the female members, or by means of metal pressure plates, such as is the case with gloves. Further, studs of the

type shown in Figs. 14 and 15 of the drawing, may be equipped with the said button.

Various changes in the specific forms shown and described may be made within the scope of the claim without departing from the spirit of my invention.

What I claim is:

A button of the type referred to, having a male member with a headed shank, a female member having an upper plate, an annular entrance opening in said upper plate for operatively introducing said headed shank, and a slot in connection with said opening, such upper plate being arranged in countersunk position, a projection of spherical shape centrally formed in said upper plate and designed to constitute a perfect ball joint for the head of said shank in its operative position, said spherical projection being in part constituted by the adjacent walls of said slot which is thus reduced to minimal extent in view of facilitating locking engagement and disengagement of the male and female members.

JOHN ERNST RÖHRS.