Nov. 24, 1931. N. S. DWYER 1,833,018

SEPARABLE BUTTON

Filed Sept. 2, 1930 2 Sheets-Sheet 1

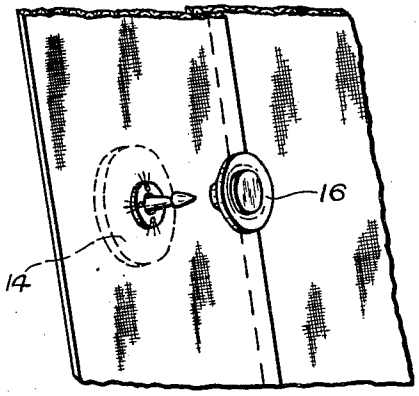


Fig. 1

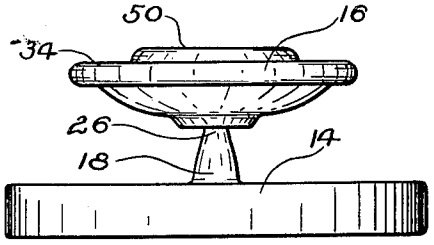


Fig. 2

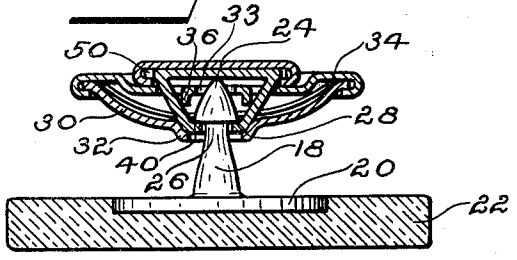


Fig. 3

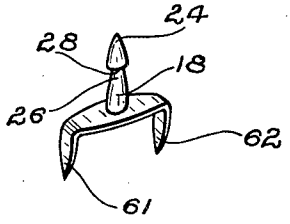


Fig. 12

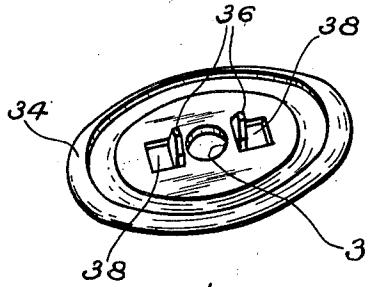


Fig. 5

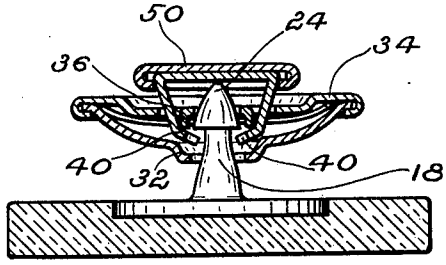


Fig. 4

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SEPARABLE BUTTON

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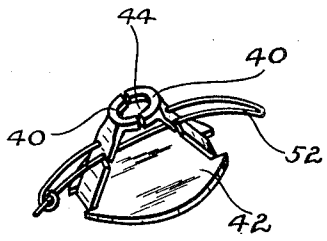


Fig. 6

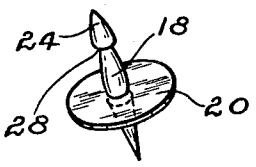


Fig. 11

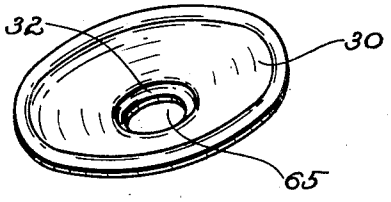


Fig. 7

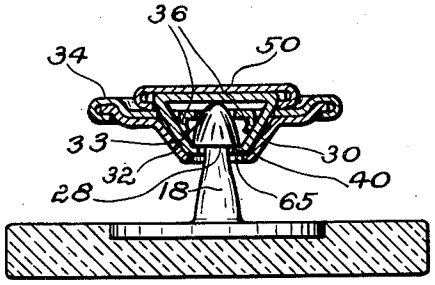


Fig. 8

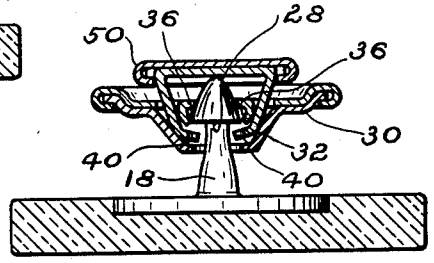


Fig. 9

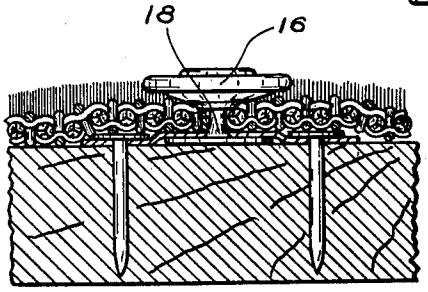


Fig. 10

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Patented Nov. 24, 1931 1,833,018

UNITED STATES PATENT OFFICE

NELLIE SHEPHERD DWYER, OF SEATTLE, WASHINGTON

SEPARABLE BUTTON

Application filed September 2, 1930. Serial No. 479,241.

My present application relates to the art of separable buttons and more particularly to a button that is intended for such general use as on garments, and other wearing apparel, such as gloves, capes, as cuff links, for footwear, for use in holding carpets, pictures, curtains, tapestries, and the like, in place.

My present application is an improvement over my U. S. Patent Number 1,774.134 and may be further classified as being of the general type shown by Pilcher in re-issue application Serial No. 14,342, and particularly Patent No. 1,626,296.

In my present application I provide an engaging member which is adapted to slip over and be secured to a pointed stud and which is characterized by being very shallow, and also arranged to form a positive engagement with the stud. Certain parts of my construction are shown in the patents to Pilcher, above referred to. The point of difference, however, is that while Pilcher relies upon a frictional engagement, my device is arranged to positively lock beneath an annular ledge formed near the point of the stud. Pilcher, on the other hand, relies entirely upon the frictional engagement of his locking means. The construction I have employed to obtain this result makes it possible for me to construct my engaging member much shallower than either my former application or Pilcher.

Having thus briefly described my invention, and the differences between it and what I feel is the most pertinent art, the objects which I obtain with my device are, namely:

First: The construction of a separable button which is positively locked when in its engaged position.

Second: A separable button in which the engaging member can be constructed with very little depth, thus making it much more acceptable for the purpose intended.

Third: A separable button which may or may not be supplied with a spring to insure its locking automatically.

Fourth: The production of modified forms of studs which adapt my device to uses other than the use on garments.

Other and more specific objects will be apparent from the following description taken in connection with the accompanying drawings, wherein:

Figure 1 is a perspective view showing my device with the two members separated from each other.

Figure 2 is a side elevation of my device.

Figure 3 is a cross-sectional view of Figure 2.

Figure 4 is a cross-sectional view of the same in its released position.

Figure 5 is a perspective view of my cup plate.

Figure 6 is a perspective view of my lock member, the same being shown with an operating spring in place.

Figure 7 is a perspective view of my cup member.

Figure 8 is a cross-sectional view similar to Figure 3, showing a modified form in which no seating spring is used.

Figure 9 is a similar cross-sectional view showing the device in its released position.

Figure 10 is a cross-sectional view showing an adapter means for securing my stud member in position.

Figure 11 is a perspective view of a modified form of stud.

Figure 12 shows an additional modification in my stud.

Referring to the drawings throughout which like reference characters indicate like parts, numeral 14 designates in general the stud member of my device and 16 the engaging member. The stud member is composed of the stud proper 18 which I normally prefer to form with an integral base member 20. This in turn may be secured to any standard form of button.

I have illustrated in most of my figures this member as being cemented into a pearl button 22, although I believe it will be apparent that any form of button might be used in lieu thereof. The upper end of stud 18 is pointed at 24 to facilitate assembly of the button, as a point can be most easily introduced into member 16. Somewhat down from the extreme point I have reduced the diameter of stud 18 to form the neck 26 and have provided an annular ledge 28 whose underneath surface I normally prefer to have

disposed at right angles to the axis of the stud 18, or in extreme cases to have the same slightly undercut so as to provide a more positive rest for the jaws of the lock member.

The engaging member of my device is formed preferably with a cup member 30, having a coned portion 32. Secured to the upper surface of cup 30 is the cup plate 34. This, as will be observed from Figure 5, is struck with a die so as to form the downwardly projecting spreaders 36, and the jaw openings 38. Fitted through openings 38 are the jaw members 40 of the lock member 42. The exact construction of these members is best illustrated in Figure 6, special attention being drawn to the fact that the jaws 40 form when in their locked position a complete circle with an interior opening 44, one-half of which is formed in each jaw. As will be observed in Figure 6 I provide that the plate of member 42 form a circle with the exception of the points to which the jaw members are attached, and to which I have secured a cover member 50. This cover member provides the necessary finish and also a convenient member which may be readily engaged with the finger-nails of the user. In one form, illustrated in Figures 3 and 4, I provide a restoring spring 52, which is designed to normally urge the jaws of the locked member down into the coned portion of cup 30 so as to provide automatic locking of the same. In Figures 8 and 9 I have shown a form in which this spring is not used. It is usually necessary in this type to press downwardly on cap 50 in order to lock the button in place. While this may seem to be a disadvantage it enables me to make the cup member 30 smaller in diameter at its lower portion. This gives in effect a much deeper coned surface 32.

I have found that with the relatively short engagement provided by the annular ledge 38 and the jaw members 40 which engage the same, that a certain amount of rocking of the engaging member with reference to the stud member will take place. I have found it possible, however, to provide against this by forming a centrally disposed opening 33, which is adapted to normally encircle the upper part of the stud head. I have found it necessary to have a little freedom or space between the stud and opening 33 in order to permit the necessary movement for locking and unlocking the button. This clearance, however, can be reduced to a point where it will provide the additional support necessary to prevent the engaging member rocking upon the stud. This opening 33 also enables me to cut the over-all height of the engaging member by the thickness of the material of plate 34. In this respect my invention differs considerably from that shown by Pilcher.

I believe it will be apparent that the form shown in Figures 3 and 4 might have this same cup form as Figures 8 and 9, except that portion which must necessarily be provided as a working housing for spring 52.

In order to adapt my separable button for such uses as hanging wall tapestries, securing carpets in place, etc., I have provided two modified forms of studs as illustrated in Figures 10 and 11. To provide means for adapting my button for securing seat covers, for instance, to upholstered cushions, I have provided the modified stud shown in Figure 12 which has the two downwardly extending points 61 and 62, which are intended to be bent over towards the center after they have been placed through fabric material.

Method of operation

In operating my device, assuming the two portions of my button are taken apart as shown in Figure 1, it is first necessary to grasp the engaging member, preferably by the rim of member 34 and then engage the point of stud 18 within the opening 65 provided in cup 30. As downward pressure is then applied the jaws 30 will tend to stop and allow the cup member to go on down. This movement forces jaws 40 against members 36. This spreads the two jaw members as they have, by this time, been retracted from the cone portion 32 until the downward movement is sufficient to enable the jaws to drop under the annular ledge 28. Now in the form shown in Figures 3 and 4 the restoring spring 52 will bring the cup member up to the position shown in Figure 3. In the form shown in Figures 8 and 9 it will be necessary to hold, as by the thumb, the cap 50 and pull upwardly on the cup member 30 until the locked position shown in Figure 8 has been reached. When in the locked position the jaws 40 engage by flat surfaces the annular ledge 28 and when in this position the coned portion 32 of cup 30 comes up snugly about the jaw members and makes it impossible for them to expand to the unlocking position as shown in Figures 4 and 9, no matter how much force may be applied to the under side of cup 30. This is a particularly desirable feature one which has not been observed in use, and which is relied upon in a large degree to provide the novel feature for my present application.

The foregoing description and the accompanying drawings are believed to clearly disclose a preferred embodiment of my invention but it will be understood that this disclosure is merely illustrative and that such changes in the invention may be made as are fairly within the scope and spirit of the following claims.

What I claim is:

1. A separable button consisting of: a stud member having a base; a centrally disposed stud extending outwardly therefrom, said stud having a pointed end and an annular

ledge near its outer end; the under side of which is normal to the axis of the stud; an engaging member having a cup member, a cup plate secured to the upper surface of the cup, a lock member having a plurality of jaws which are adapted to engage the annular ledge of the said stud, with surfaces which are normal to the axis of the stud; means for spreading said jaws and a jaw seat in said cup member adapted to prevent the spreading of the jaws when the same are in the locked position.

2. A separable button consisting of: a stud member having a base; a centrally disposed stud extending outwardly therefrom, said stud having a pointed end and an annular ledge near its outer end; an engaging member having a cup member, a cup plate secured to the upper surface of the cup, said cup plate having a centrally disposed opening adapted to coact with the stud to prevent said engaging member tipping when in use; a lock member having a plurality of jaws which are adapted to engage the annular ledge of the said stud, downwardly directed spreaders adapted to spread said jaws and a jaw seat in said cup member adapted to prevent the spreading of the jaws when the same are in the locked position.

3. A separable button consisting of: a stud member having a base; a centrally disposed stud extending outwardly therefrom, said stud having a pointed end and an annular ledge near its outer end; an engaging member having a cup member, a cup plate secured to the upper surface of the cup, a lock member having a plurality of jaws which are adapted to engage the annular ledge of the said stud, means for spreading said jaws; a jaw seat in said cup member adapted to prevent the spreading of the jaws when the same are in the locked positon, and a restoring spring secured near its mid point to the jaws and with its opposite ends secured by the cup and the cup plate in a manner to urge said jaws into said jaw seat.

In witness whereof I have hereunto subscribed my name this 11th day of August, A. D. 1930.

Mrs. NELLIE SHEPHERD DWYER.