

July 9, 1929.

C. H. KENLAN

1,720,079

BUTTON

Filed July 12, 1928

Fig. 1.

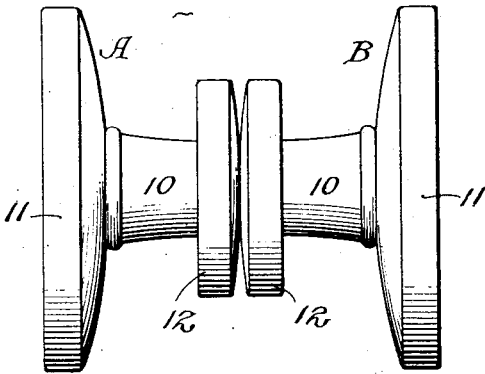


Fig. 2.

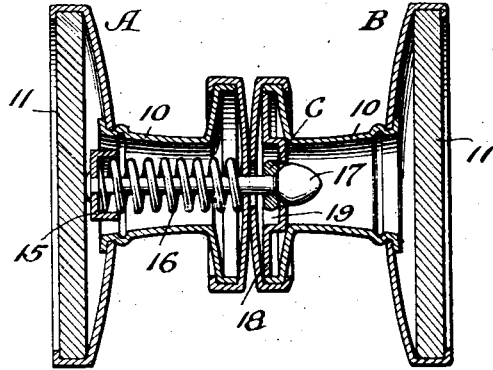


Fig. 3.

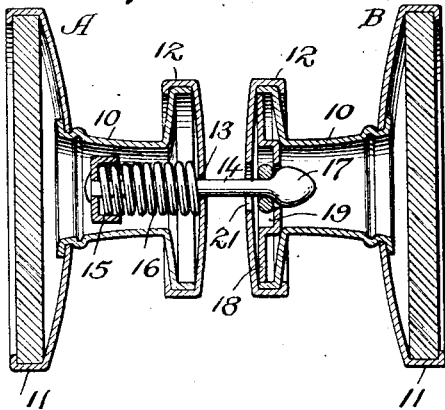


Fig. 4.

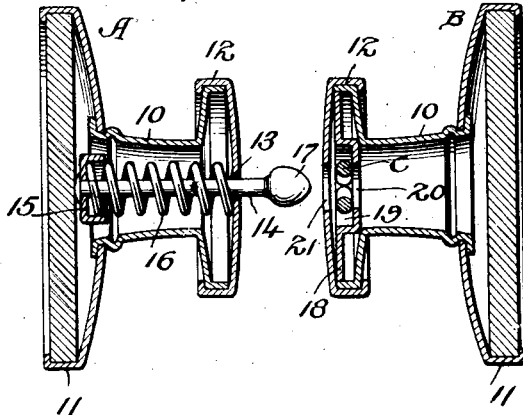


Fig. 5.

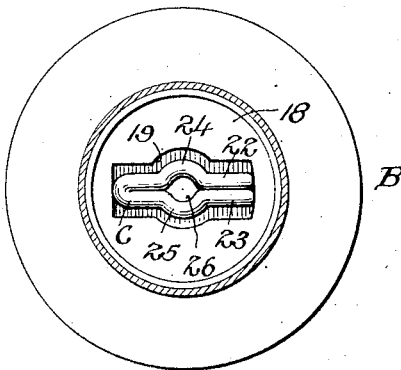
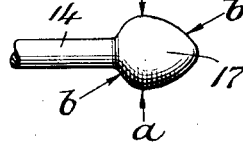


Fig. 6.



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BUTTON.

Application filed July 12, 1928. Serial No. 292,068.

My invention relates to buttons and particularly to that type embodying two members detachably connected together by a flexible linkage.

5 In carrying my invention into practice it has been my purpose to provide a button of the type specified in which the members of the button can be easily attached to and detached from each other when desired, which
10 will prevent accidental detachment of the members; which will permit the members to yieldingly separate under strains without detachment from each other; which will
15 prevent detachment of the members under strains directed angularly of the axis of either member, which will permit a wide range of universal movement between the members; and which will be practical in design, durable, and cheap to manufacture.

20 In the drawings chosen to illustrate my invention the scope whereof is set forth in the appended claims.

Figure 1 is a side elevation of an assembled cuff button constructed in accordance with my invention;

25 Figure 2, a longitudinal section of Figure 1;

30 Figure 3, a view similar to Figure 2 showing the extent of yielding separation possible between the members of the button without effecting their complete detachment;

Figure 4, a view similar to Figure 2 showing the members of the button completely detached;

35 Figure 5, a transverse section of the female member of the button on the line 5—5 of Figure 4; and

40 Figure 6, a detail view of the outer end of the connecting link of the button which is carried by the male member.

Referring to the drawing my improved cuff button is shown as comprising male and female members A and B adapted to be joined with and separated from one another in a manner that will hereinafter more fully appear. The members A and B are similarly formed, each consisting of a plurality of sections formed and assembled as shown in the drawing by the well known die operation. Specifically each of the members A and B comprises a short tubular shank
50 10 having an ornamental head 11 at its outer end and a smaller head 12 at its inner end. The inner end of the shank 10 of the male
55 member A is provided with an axial open-

ing 13 in which is slidably engaged a link 14. The inner end of this link carries a spring seat 15. A spring 16 encircles the link 14 with bearing at one end against the seat 15 and at its other end against the inner end of the related shank. From this construction it will be apparent that the spring 16 functions to constantly urge the link 14 to the position shown in Figure 4.
60 The outer end of the link 14 terminates in a pear shaped head 17 having certain peculiarities of formation which will be later referred to.

Mounted in the enlarged inner shank end 12 of the female member B is a transverse
70 disk 18 having a central dished portion 19, the base of which latter is provided with an opening 20 which alines with an axial opening 21 in the inner end of the related shank 10. Disposed in the dished portion 19 is
75 a normally contracted laterally expandible spring member C. This spring member is formed from a single length of spring wire bent upon itself to provide contiguous arm
80 elements 22 and 23.

Intermediate their ends said arm elements 22 and 23 are provided with outwardly directed curved portions 24 and 25 respectively which form a passage 26 normally
85 positioned substantially in line with the passages 20 and 21. From the construction previously described it will be apparent that by disposing the members A and B as shown in Figure 4 and then moving them axially toward each other the enlarged end 17 of
90 the link 14 will pass through the opening 21, wedge itself through the passage 26 by expanding the arm elements 22 and 23 and then move through the opening 20, when the arm
95 elements will automatically contract behind the enlarged portion 17 and thus secure the members of the button together. Detachment of the members from each other is accomplished by reversing this operation as
100 will be apparent. It will be noted, however, in respect to the separation of the button members that the strength of the spring member C is greater than the spring 16, so that said members can move apart a liberal
105 distance against the influence of the spring 16 without disturbing the linkage connection between them.

By reference to Figure 6 it will be observed that the enlarged end 17 of the link 14 is shaped so that its maximum transverse
110

dimensions $a-a$ is less than its diagonal dimension $b-b$. In turn I construct the dished portion 19 of such dimensions that the expansion of the spring member C is limited to a distance substantially equal to the dimension $a-a$ of the enlarged end 17. Thus it will be apparent that if the members A and B are moved toward and away from each other while maintained in axial alinement they can be readily attached and detached. However, when the members A and B are at an angle to each other the enlarged end 17 cannot pass through the spring member C owing to the inability of the latter to expand a sufficient distance to meet the requirements of the diagonal dimension $b-b$. This construction and arrangement is of great advantage when the members of the button are attached as it serves to prevent their detachment under the influence of angular stresses, which latter are effectively absorbed by the yielding linkage between the members.

Reference is also made to the fact that the opening 13 is sufficiently large to permit lateral play of the link 14 when the members A and B are moved apart in angular relation.

It will also be noted that when the members A and B are attached their inner ends abut, thereby concealing all connecting elements and greatly enhancing the neat appearance of the finished product.

While I have shown my invention applied to a cuff button I do not desire to limit myself to such application as the principle thereof is readily applicable to any type of snap button without departing from the spirit of my invention as defined in the appended claims.

I claim:

1. A button formed of male and female members, each having a short hollow shank provided with an axial opening in its inner end and an ornamental head at its outer end, a spring retracted link slidably engaged in the axial opening of the male member and having an enlarged outer end, and spring means in the inner end of the female member for releasably engaging the enlarged outer end of the link, said means comprising a spring wire bent upon itself to provide arm elements, said elements having oppositely disposed outwardly directed curved portions forming a passage through which the

enlarged outer end of the link is adapted to be forced.

2. A button formed of male and female members, each having a short hollow shank provided with an axial opening in its inner end and an ornamental head at its outer end, a spring retracted link slidably engaged in the axial opening of the male member and having an enlarged outer end the cross section of which is circular and whose maximum transverse dimension is less than a diagonal dimension thereof measured from the inner end of said enlarged portion, a normally contracted laterally expansible spring member mounted in the inner end of the female member and through which the enlarged end of the link is adapted to be forced to secure the members of the button detachably together, and means limiting the expansion of said spring member to a distance less than the aforesaid diagonal dimension, but greater than the aforesaid transverse dimension whereby the members of the button are rendered separable when in substantially axial alinement and inseparable when in relative angular disposition.

3. A button formed of male and female members, each having a short hollow shank provided with an axial opening in its inner end and an ornamental head at its outer end, a spring retracted link slidably engaged in the axial opening of the male member and having an enlarged outer end the cross section of which is circular and whose maximum transverse dimension is less than a diagonal dimension thereof measured from the inner end of said enlarged portion, a transverse disk mounted in the inner end of the female member, said disk having a dished portion the base of which is provided with an opening alined with the axial opening of said female member, a normally contracted laterally expansible spring member disposed in the dished portion of said disk and having its expansion limited by the walls of said dished portion to a distance less than the aforesaid diagonal dimension, but greater than the aforesaid transverse dimension whereby the members of the button are rendered separable when in substantially axial alinement and inseparable when in relative angular disposition.

In testimony whereof I hereunto affix my signature.

CHARLES H. KENLAN.