June 18, 1940. E. HAEFFNER 2,205,092

CLASP

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Fig. 1.

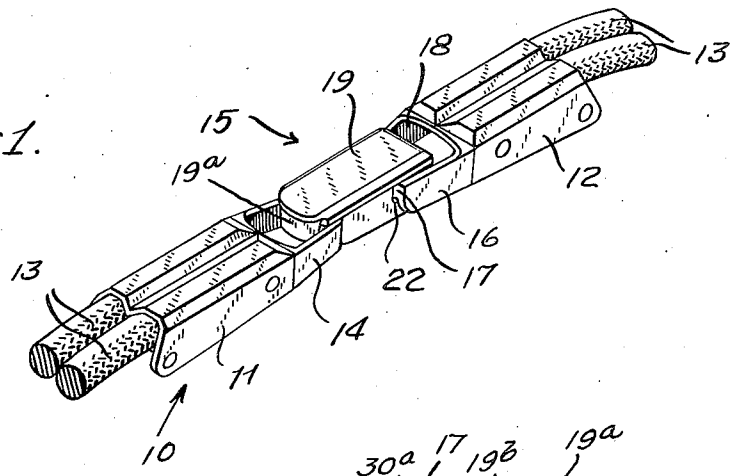

Fig. 2.

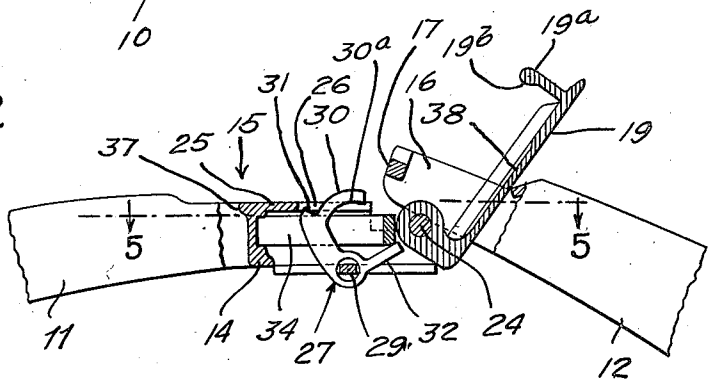

Fig. 3.

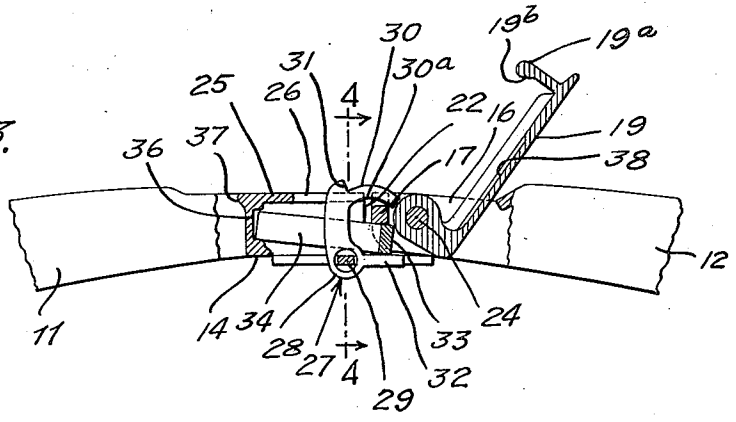

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Fig. 4.

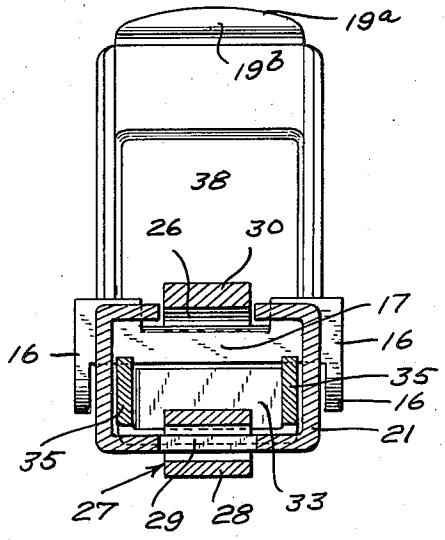


Fig. 5.

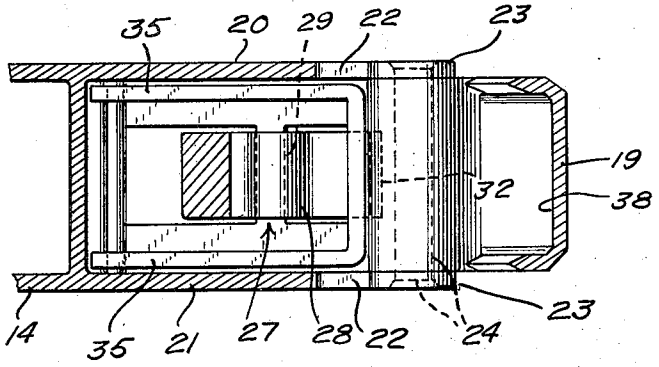


Fig. 6.

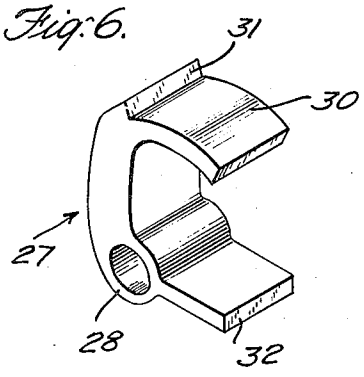
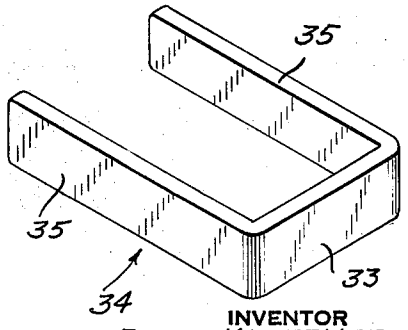


Fig. 7.



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CLASP

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Application May 21, 1938, Serial No. 209,348

8 Claims. (Cl. 24—241)

This invention relates to bracelet connector construction, and more particularly to a clasp for securing together the ends of a wrist watch bracelet or the like.

One of the objects of this invention is to provide a clasp for connecting bracelet ends which is simple and inexpensive in construction, and durable and sturdy over a period of extended use. Another object is to provide a device of the above nature which is simple to operate in either opening or closing direction, and which securely connects the braclet ends and holds them connected against inadvertent separation. Other objects will be in part apparent and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts as will be exemplified in the structure to be hereinafter described and the scope of the application of which will be indicated in the following claims.

In the drawings, in which is shown one of the embodiments of my invention,

Figure 1 is a perspective view of the clasp connecting the ends of a bracelet;

Figure 2 is a sectional elevation of the clasp in open position;

Figure 3 is a section similar to that in Figure 2 showing the clasp in a closed position;

Figure 4 is a section taken along the line 4—4 of Figure 3;

Figure 5 is a section taken along the line 5—5 in Figure 2, one end of the bracelet not being shown;

Figure 6 is a perspective view of the safety catch in the clasp; and,

Figure 7 is a perspective view of one of the operating members of the clasp.

Similar reference characters refer to similar parts throughout the various views of the drawings.

In order that certain aspects of this invention may be more clearly understood, it might first be pointed out that one of the principal difficulties in securing the free ends of a bracelet together lies in the prevention of inadvertent release of the bracelet ends. While various devices have been provided to this end, their success has been indifferent because of structural complications and difficulty of operation. Furthermore, many of them deteriorate rapidly in use and soon fail in their designed function. Still others are so cumbersome and bulky that they detract from, rather than enhance, the appearance of the bracelet. It is desirable in a device of this nature that the number of manual operations necessary to effect a secure connection of the bracelet ends be as few as possible. Therein lies another deficiency of the known clasps. It is accordingly another object of this invention to provide a clasp for connecting bracelet ends which obviates the above difficulties in a thoroughly practical and efficient manner.

Referring now to Figure 1 of the drawings, a bracelet generally indicated at 10 includes a pair of end links 11 and 12 or the like, which may be of any suitable form, and including mechanism capable of securely clasping and holding the ends of the bracelet cord 13. End link 11 includes an extension 14, which forms the body portion of my connector clasp, generally indicated at 15. End link 12 also includes an extension 16, which with a cross bar or coupling 17 frames an opening 18 in the end of the link. Clasp 15 includes a pivoted cover or catch 19 which when in its open position, as shown in Figures 2 and 3, may be threaded through opening 18 (Figure 1) to permit the positioning of coupling 17 within the clasp. Cover 19 may then be swung to its closed position, thus securing coupling 17 within the clasp and securely connecting bracelet links 11 and 12, as will be pointed out in greater detail hereinbelow.

Referring to Figure 5, extension or body member 14 has a pair of side walls 20 and 21, in which are formed recesses 22, the ends 23 of body member 14 carrying a pin 24 (Figure 2) which pivotally mounts cover 19. The top 25 of body member 14 is partially cut away to provide an opening 26 therein which communicates with recesses 22 and receives the upper portion of a safety catch generally indicated at 27 (see also Figure 6). Catch 27 includes a bearing portion 28 which, as is shown in Figure 2, surrounds a cross bar 29 extending between the side walls of body member 14, thus pivotally mounting the safety catch in the body member.

Catch 27 (Figure 6) includes a hook-shaped portion 30, and a finger engageable portion 31 which, when the catch is operatively mounted in body member 14 (Figure 2), lie within opening 26 in the top of the body member when the catch is in its open position with respect to recesses 22. Catch 27 is so proportioned and installed that when it is in its closed position, as shown in Figure 3, it is past dead center, i. e., it is overbalanced in clockwise direction (as viewed in Figure 3) so that its tendency is to move in closing or clockwise direction, thus preventing inadvertent counter-clockwise or opening move-

ment, for a purpose to be pointed out hereinafter.

Safety catch 27 also includes a projection or lug 32 (Figure 2) against or on top of which the closed end 33 of a U-shaped lever 34 bears. The legs 35 (Figure 7) of U-shaped lever 34 parallel body member side walls 20 and 21 (Figure 5) and acordingly embrace safety catch 27. The ends of lever legs 35 preferably loosely fit into a suitably formed depression 36 (Figure 3) formed in body member 14, and accordingly lever 34 floats within the body member and may move vertically with respect thereto. As may be seen in Figures 2 and 3, the closed end 33 of the lever extends between recesses 22 when safety catch 27 is in its open position, and lies below the recesses 22 (Figure 3) when catch 27 is closed. As noted, the closed end 33 of the lever rests on safety catch lug 32, and for this reason is held between the recesses when the catch is open.

It may now be seen that when coupling 17 of end link 12 is placed within recesses 22, it engages end 33 of lever 34. As the coupling is forced into the recesses, lever end 33 is forced against catch lug 32, causing safety catch 27 to pivot clockwise as viewed in Figure 2. The parts are so proportioned that coupling 17 is out of the path of movement of catch hook 30 when the hook starts to cross and close recesses 22, and when coupling 17 is seated within the recesses, catch hook 30 completely overlies not only the recesses, but also the coupling (as shown in Figure 3). At this point it should be noted that the under side 30*a* of catch hook 30 is curved, and in effect is a cam surface which coacts with coupling 17 when it is sought to withdraw the coupling from recesses 22. Such attempted withdrawal forces the coupling against curved hook surface 30*a*, and the result is a camming action tending to force the hook clockwise, i. e. in its closing direction of movement. It will thus appear that inadvertent displacement of coupling 17 from recesses 22 is virtually impossible by reason of the overbalanced condition of the catch when it is closed, and also by reason of the camming action between the catch hook and the coupling.

When it is desired to open the hook, all that is necessary is to swing the hook in counter-clockwise direction (Figure 2) by engaging catch finger piece 31 with the finger nail.

In operation, and assuming that clasp 15 is in the operative condition shown in Figure 2, i. e., the clasp is open, cover 19 may be threaded through the end of bracelet link 12 to position coupling 17 within recesses 22. When so placed, the coupling bears against lever end 33 forcing it downwardly against catch lug 32, and swinging the catch in clockwise direction. When the coupling is seated in recesses 22, catch 27 is completely closed, i. e., it overlies recess 22 and coupling 17 in an over-balanced position with respect to its pivotal axis. The catch cannot be swung from this position, as noted above, and accordingly coupling 17 and end link 12 are firmly connected to end link 11 and maintained in that condition against inadvertent release. After the safety catch 27 has been closed, cover 19 may be pivoted counter-clockwise, as viewed in Figure 3, until its depending end 19*a*, which carries a detent 19*b*, engages a knob or the like 37 on the rear of body portion 14. Detent 19*b* may be sprung over knob 37, thus frictionally holding cover 19 in a position overlying recesses 22, coupling 19 and safety catch 27. Cover 19 also has a finger piece 39 under which the finger nail may be inserted when the cover is closed to swing the cover to the open position shown in Figure 3. It accordingly follows that when cover 19 is closed, coupling 17 is held within recesses 22 not only by safety catch 27, but also by the cover. Preferably cover 19 is recessed at 38 to provide ample clearance for catch hook 30 and catch finger piece 31.

If by any reason safety catch 27 (Figure 3) should be in its closed position when it is desired to position coupling 17 within recesses 22, it is unnecessary to manually open the safety catch. The catch may readily be pivoted in opening direction by pressing coupling 17 against catch hook 30. This swings the hook far enough open to prevent entry of the coupling into recesses 22. Finally, it is noted that closing operation of safety catch 27 (Figures 2 and 3) is positively and automatically effected by reason of the peculiar relationship of the various parts, and in the minimizing of the operative movements thereof, wear of the parts is greatly reduced.

Thus I have provided a clasp for securing the ends of a bracelet together, which fulfills the various objects set forth hereinabove in a thoroughly practical manner.

As many possible embodiments may be made of the above invention and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth, or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. In a device of the nature described, in combination, a body member having a recess adapted to receive a coupling, a catch pivotally mounted in said body member and movable between open and closed positions, said catch having a hook-shaped portion adapted to overlie the coupling when in said recess to retain the coupling therewithin, said catch being substantially past dead center when in its closed position, whereby inadvertent pivotal opening movement of the catch is prevented, said hook-shaped portion comprising a cam surface which coacts with said coupling upon movement of said coupling out of said recess to bias said catch in closing direction, and a cover for said body member.

2. In a device of the nature described, in combination, a body member having a recess adapted to receive a coupling or the like, a catch pivotally mounted in said body member and movable between open and closed position with respect to said coupling when in said recess, a U-shaped part disposed within said body member embracing said catch and having its closed end adjacent said recess, said catch also having a portion underlying the closed end of said U-shaped part and adapted to be engaged thereby upon insertion of said coupling into said recess, whereby as said coupling is placed in said recess the closed end of said part moves against said portion of said catch to swing said catch into its closed position to maintain said coupling in said recess, and a cover member operatively attached to said body member and closable to a position overlying said coupling, said recess and said catch.

3. In a bracelet end connector, in combination, a box-shaped body member adapted to be attached to one end of a bracelet, said body member having a flat bottom portion and flat side walls extending at right angles therefrom, a top portion connecting said side walls, a catch, means for pivotally connecting said catch to said body

member, said side walls having aligned open slots formed therein extending from the top toward the bottom thereof and adapted to receive a coupling attached to the other end of the bracelet, and means in said body member coacting with said catch and coupling when the coupling is placed in said notches for moving said catch to a closed position over said coupling to hold said coupling in said notches.

4. In a bracelet end connector, in combination, a box-shaped body member adapted to be attached to one end of a bracelet, said body member having a flat bottom portion and flat side walls extending at right angles therefrom, a top portion connecting said side walls, a catch, means for pivotally connecting said catch to said body member in the plane of said bottom portion, said side walls having aligned open slots formed therein extending from the top toward the bottom thereof and adapted to receive a coupling, and means in said body member coacting with said catch and coupling only when a coupling is placed in said notches for moving said catch to a position over said coupling to hold said coupling in said notches.

5. In a bracelet end connector, in combination, a body member including side walls having aligned slots formed therein adapted to receive a coupling or the like, a catch pivotally mounted in said body member and movable between releasing and retaining positions with respect to said coupling when the coupling is in said notches, and a control part movably mounted in said body member having a portion extending above the bottoms of the notches when said catch is in its release position, said portion being engageable by the coupling when it is placed in said notches, said catch including a portion engaged by said control part whereby upon movement of said control part downwardly of said notches said catch is moved to its retaining position.

6. In a bracelet end connector, in combination, a body member adapted to be attached to one end of a bracelet and having a recess adapted to receive a coupling connected to the other end of the bracelet, a catch pivotally mounted on said body member and having a leg portion on one side of its pivotal axis shaped to move over said recess when said catch is in its retaining position with respect to said coupling, means associated with said catch on the other side of its pivotal axis and including a part which lies within said recess when the catch is in its release position, whereby said part may be engaged by the coupling when the coupling is placed in the recess to pivot said catch to said retaining position, and a closure member pivotally mounted on said body member and pivotable into a closed position over said catch and said recess.

7. In a bracelet end connector, in combination, a body member adapted to be attached to one end of a bracelet and having a recess adapted to receive a coupling connected to the other end of the bracelet, a catch pivotally mounted on said body member and having a leg portion on one side of its pivotal axis shaped to move over said recess when said catch is in its retaining position with respect to said coupling, means associated with said catch on the other side of its pivotal axis and having a portion which lies within said recess when the catch is in its release position, whereby said last-mentioned portion may be engaged by the coupling when the coupling is placed in the recess to pivot said catch to said retaining position, a finger piece on said catch engageable for manual operation of the catch, and a closure member pivotally mounted on said body member and pivotable into a closed position over said catch and said recess.

8. In a bracelet end connector, in combination, a body member adapted to be attached to one end of a bracelet, said body member including parallel side walls having aligned slots formed therein adapted to receive a coupling connected to the other end of the bracelet, a U-shaped catch, means pivotally mounting said catch between its legs on said body member, the catch leg on one side of the pivotal axis of the catch being shaped to move between said slots when said catch is in its retaining position with respect to said coupling, the catch leg on the other side of the pivotal axis of the catch being shaped to extend in the vicinity of the bottom of said slots, means associated with said last-mentioned catch leg and lying above the bottoms of said slots when the catch is in its release position, whereby said means may be engaged by the coupling when the coupling is placed in the recess to pivot said catch to move its first-mentioned leg into coupling retaining position, and a closure member pivotally mounted on said body member and pivotable into a closed position over said catch and recess.

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