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GARMENT CLASP

Filed May 17, 1940

FIG. 1

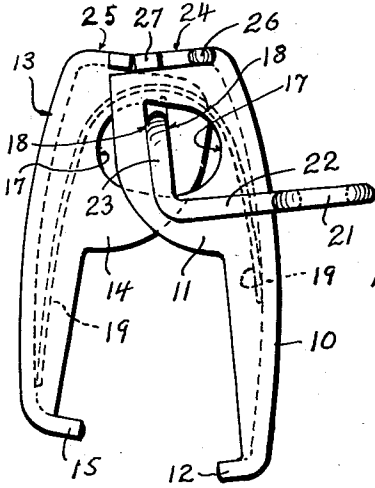


FIG. 2

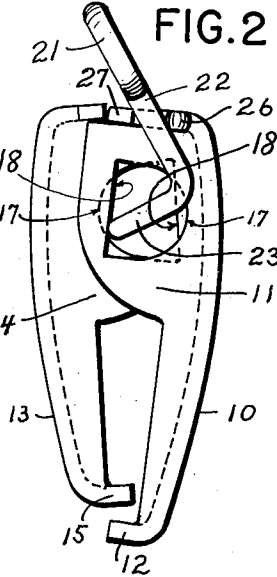


FIG. 3

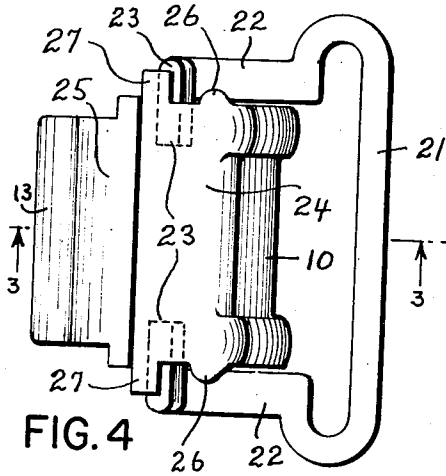
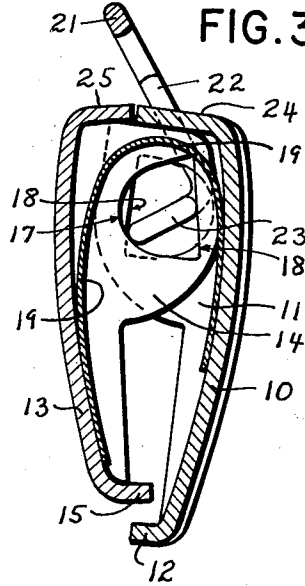


FIG. 4

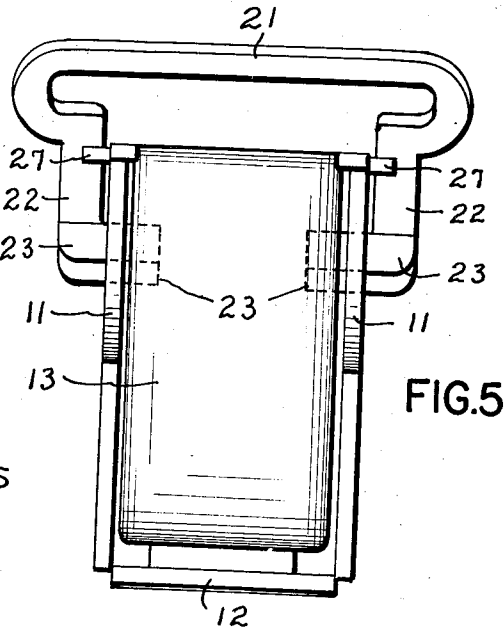


FIG. 5

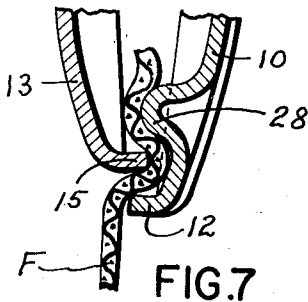


FIG. 7

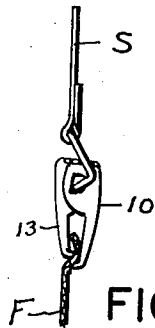


FIG. 6

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2,261,089

GARMENT CLASP

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2 Claims. (Cl. 24—250)

This invention relates to attachment or clasp means and more particularly to a new and improved garment clasp for use in connection with hose supporters, trouser suspenders and other wearing apparel and the like. For example, the clasp also can be used in connection with conveniently fastening covers on beds, as well as hanging curtains and drapes; and the device has a variety of other uses.

An object of the invention is to produce a jaw-type garment clasp having a simple locking or latching means associated therewith which prevent the jaws of the clasp from opening, that is, from becoming accidentally separated when once the clasp is latched closed on the fabric piece, such as trousers, hose and the like which the clasp is adapted to detachably hold in adjusted position.

Another object is to produce a clasp, the closing and latching operation of which is felt in the user's fingers and also heard by reason of the clicking or snapping action of the device, and likewise the snap latch can be observed to engage. These are advantages which appeal to the user of a device of this class because he then knows that the clasp is finally closed on the fabric piece and will not release until manually unlatched by a reverse movement of a pivoted loop member or handle which performs the latching and unlatching action.

A further object is to produce a clasp device wherein less leverage and pressure is placed on the pivot or knuckle bearings of the movable parts so as to reduce wear in the cam and toggle action of the device; and consequently my new clasp has a longer life than usual in devices of this class.

With the foregoing objects in view, as well as other purposes and features inherent in the construction and advantages described herein, an example of the invention is shown for illustrative purposes in the accompanying drawing portraying the principle of the invention, wherein:

The drawing, except for Figure 6, shows the clasp device greatly enlarged over its normal commercial size so as to more clearly disclose the locking feature which gives long life and increases the utility of the device.

Figure 1 shows a side view of the clasp in open position; and Figure 2 shows it in locked closed position.

Figure 3 shows a vertical longitudinal section of the clasp in locked closed position.

Figure 4 shows a top view of the clasp in open

position; and Figure 5 shows a rear view thereof in locked closed position.

Figure 6 is a side view of the clasp in substantially its preferred commercial size. It is shown attached at its upper end by its supporting loop to a portion of a suspender strap or supporter permanently sewed into the loop, and the lower end of the clasp jaws is closed on a detachable fabric piece adapted to be held in position there-

by. Figure 7 shows a modified form of the invention, wherein a swedged or inwardly-punched portion on one jaw provides an additional anchorage or gripping hold of the jaws upon the releasable fabric piece.

This clasp is manufactured by die and stamping tools, as is usual in devices of this general class. The clasp chosen to illustrate the principles of the invention comprises four parts, including a pair of cooperating jaws, a flexible leaf spring to open the jaws, and a pivoted loop member having a pair of spaced pintles or knuckle bearings adapted to hold the parts in assembled relation. The pivoted loop forms an operating handle and constitutes an attaching means by which the end of a suspender or other fabric piece is permanently sewed or fastened thereto, while the cooperating jaws provide the means for detachably fastening the clasp to the edge of one's trousers, hose or the like for supporting same in adjusted position.

My improved clasp is characterized by stop means formed on the top portion of one of the jaws and against which stop the pivoted loop comes to rest after yieldably camming upon and snapping down in behind raised detent or protuberance means which latches behind the pivoted loop and holds it against said stop means to prevent accidental opening. A further description of the invention now follows.

The clasp device comprises a pair of cooperating jaw members, the front one of which is indicated generally at 10 and which has parallel marginal side ribs 11. The lower end of the front jaw 10 has an inwardly turned flange or claw 12. Similarly, the rear jaw is designated at 13, with side ribs 14, and the lower end of the jaw terminates in a flange or claw 15. The rear jaw 13 is slightly narrower than the front jaw 10 and is pivotally received into the latter. The side ribs 11 and 14 are parallel so as to form overlapped sliding parts, one nesting or telescoping into the other.

Both side ribs 11 and 14 are somewhat wider at the upper end of the clasp device and are

punched with cam-like openings, each opening being formed by an arcuate edge 17 and a straight-line edge 18. The straight-line edges 18 are disposed in parallel opposition and slightly spaced to receive pivot means therebetween, as later described. There are four ribs 11 and 14, two on each jaw member, and thus there are four cam-like openings 17, 18.

A leaf spring 19 is held under tension within the telescoped or cooperating jaws with the free ends of the spring directed downwardly toward the jaw ends 12 and 15. This places the center of the spring, or substantially its center, in a curved position at the upper end of the clasp device and around the cam-like openings 17, 18. The spreading force of the spring 19 tends to open the pivoted jaws as shown in Figure 1 and to maintain them in that position.

An operating member or handle, in the form of a loop 21 has a pair of parallel side arms 22 which terminate in short pintles or knuckle bearings 23 disposed in axial alignment and generally at right angle to the loop handle 21. The pintles are in a plane disposed at an angle to the plane of the arms 22 and are in effect cam-followers in function, as later explained. The operating member 21, 22 comprises a stamped piece appropriately made of spring metal if desired or of hard cold-rolled stock so as to possess a degree of resiliency. In other words, the side arms 22 are capable of a slight yielding or spreading action by springing outwardly away from each other due to the resiliency afforded in the length of said side arms integrally formed with the handle loop 21.

The pintles 23 and cam-like openings 17, 18 act as knuckle joints or pivot means to retain the clasp parts in operative relation, the two pintles 23 being rotatably confined within the punched openings between the straight-line edges 18. Inasmuch as the small pintles 23 are rectangular in cross-section, their rear and front flat surfaces rest against the opposed straight-line edges 18 of the cam-like openings 17. The outward pressure of the free ends of the spring 19 causes the two jaw members to bear their opposed and parallel straight-line edges 18 against the opposite flat surfaces of the pintles 23 and thus normally hold the loop handle 21 downwardly alongside the front jaw 10, as shown in Figure 1 when the clasp is in open position.

The upper end of the front jaw member is flanged inwardly with a top rib 24. Thus the jaw member 10 essentially comprises a flat stamped part bounded by marginal ribs 11, 12 and 24. The same is true of the rear jaw 13 which has a top rib 25. Both cooperating jaws are similar in structure, and nest together by the overlapping side ribs 11 and 14 and the bottom claw nibs 12 and 15. However, the adjacent edges of the two top ribs 24 and 25 abut or come together contiguously and do not overlap.

The rib 24 on the front jaw 10 is formed at each outer margin with a camming detent in the form of a pair of oval boss-like protuberances 26. These two detent cams have curved edges on both front and rear surfaces. In addition thereto, a pair of spaced stops 27 is integrally formed at the rear edge of the rib 24 and in alignment with the boss cams 26. Note also that the two stops 27 are spaced from the two detents 26 a distance approximately equal to, or slightly more than, the thickness of the side arms 22 of the operating loop 21.

In the use and operation of the clasp device, you insert the open nibs or claws 12 and 15 over the edge of the trouser, or other fabric piece to be held, and pivot the operating loop handle 21 upwardly. The side arms 22 then come into contact with the front curved edges of the camming detents 26, whereupon you feel the resistance at that point against moving the handle any further. However, a slight additional pressure manually applied to the loop 21 causes its side arms 22 to ride upon the detents 26, the arms yielding or springing outwardly until they travel beyond the high point of the cams 26, whereupon the sprung apart arms 22 snap downwardly into the notch-like space between each detent 26 and stop 27. This action latches each side arm 22 in its notch between each pair of spaced detent and stop means 26, 27. The operator or user of the device feels the latching effect against the loop handle and hears it snap into stationary position against accidental release.

The operation of the clasp is in part similar to that of a toggle motion, in that the cam-like openings 17, 18, acting under pressure of the spring 19 against the flat pintle cam followers 23, set up a toggle-like action when in fully closed position, as shown in Figures 2 and 3. It is noted when the clasp is closed (Figures 2 and 3) that the spaced parallel edges of the cam-follower pintles 23 are tilted at an angle from the horizontal and bear under spring pressure against the two oppositely disposed straight-line edges 18 of the cam openings so as to resist by toggle action any displacement from that latched position.

By moving the loop handle 21 counterclockwise (Figures 2 and 3), the clasp device is released, that is, unlocked and opened by pressing the loop 21 forwardly and in a downward counterclockwise direction. This is accomplished by easily forcing the side arms 22 over the detent or cam bosses 26 until the open position of the jaws is reached, as shown in Figures 1 and 4. Once the side arms 22 are on the high point of the detents 26, or slightly therebeyond, the force of the spring 19 throws the loop handle 21 downwardly and brings the two straight-line edges of the registering cam openings 17, 18 to bear against the flat surfaces of the cam follower pintles 23. The clasp now stands firmly and normally open.

It is to be observed that the front jaw piece 10 carries both the cam detent means 26 and the stop means 27. This is an advantage, in that the loop arms are braced against the larger size front jaw 10 and cannot be forced against the smaller size rear jaw 13 to apply strain thereon. Consequently, wear and tear is reduced, and the knuckle bearing does not develop looseness.

By reason of this improved construction, and the presence of the latching means properly located in relation to other parts, the spring 19 need not be so strong or powerful as in the prior art devices. Consequently it follows that there is less wearing pressure upon the movable parts, particularly less wearing pressure between the cam follower pintles 23 and the edges 17 and 18 defining the cam openings. Thus the device has longer life.

In Figure 7, there is shown a modified form of the invention designed to provide maximum holding power or anchorage against a fabric piece F. One of the jaws 10 or 13 is provided with a swedged or inwardly-punched tooth or boss nib 28 formed just above the two gripping claws 12 and 15. The fabric piece F therefore curves in

and out between the three cooperating nibs 12, 15 and 28 and is securely held therein. In other words, the claw 15 bears against the fabric piece F between the spaced projecting claws 12 and 28 to form an effective anchorage.

The loop 21 is adapted to receive a suspender or hose supporter strap S. This apparel piece S is permanently sewed or otherwise secured to the loop as understood by those conversant with this type of clasp means. This invention increases the utility of this class of clasps, solves the problem arising out of the accidental release of the device, and makes the clasp acceptable to many more customers and users.

This invention is presented to fill a need for improvements in a garment clasp. It is understood that various modifications in structure, as well as changes in mode of operation, assembly, and manner of use, may and often do occur to those skilled in the art. This is especially true after benefiting from the teachings of an invention or becoming aware of its inherent utility and advantages. Hence, it will be understood that this disclosure is illustrative of what is regarded at this time as preferred means for embodying the invention in useful form.

What is claimed is:

1. A clasp device for the general purposes described, and of the type having cooperating jaws, with spring means for opening said jaws, and pivot means for retaining said jaws in operative relation, comprising a resilient loop member having parallel side arms integrally formed with the aforesaid pivot means for manually closing the jaws and compressing the spring, stop means

formed on the clasp device for limiting the movement of the side arms toward closed position, and cam detent means formed on the clasp device over which the arms yieldably ride until they pass said cam detent means, whereupon the loop by its resiliency restores the arms to normal position and snaps them into latched place behind the cam detent means to hold said arms against the stop means thereby preventing the clasp device from inadvertently opening.

2. A clasp device for the general purposes described, and of the type having two cooperating jaws, the front jaw of which is the larger and operatively receives the smaller rear jaw thereinto, with spring means for opening said jaws, and pivot means for retaining said jaws in operative relation, comprising a resilient loop member having parallel side arms integrally formed with the aforesaid pivot means for manually closing the jaws and compressing the spring, stop means formed on the front jaw for limiting the movement of the side arms toward closed position, and cam detent means also formed on the front jaw just forward of the stop means and over which the arms yieldably ride until they pass said cam detent means, whereupon the loop by its resiliency restores the arms to normal position and snaps them into latched place behind the cam detent means to hold said arms against the stop means, thereby preventing the clasp device from inadvertently opening, and also preventing the side arms when closing from applying strain on the rear jaw.

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