April 11, 1939. J. A. VAUGHAN 2,153,853

CLASP

Filed Oct. 17, 1936 2 Sheets-Sheet 1

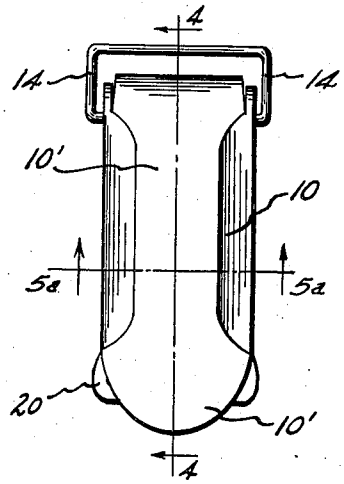


Fig. 1

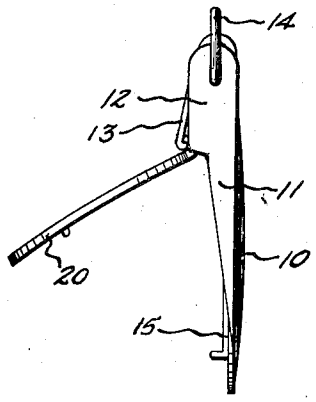


Fig. 2

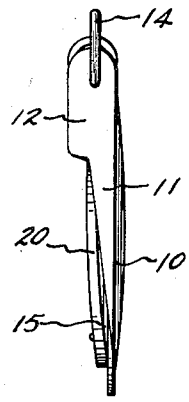


Fig. 3

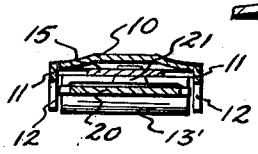


Fig. 5a

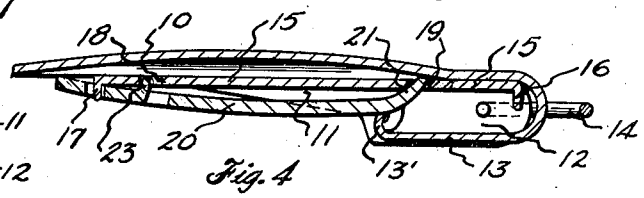


Fig. 4

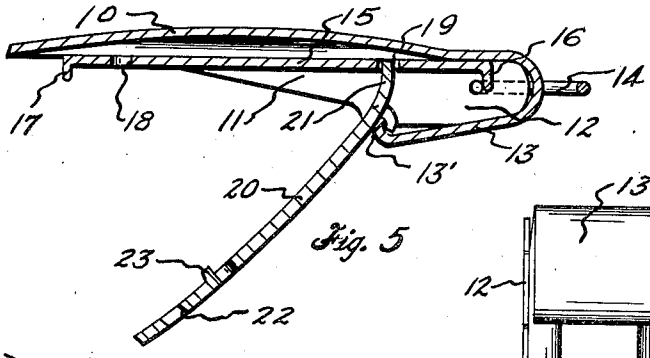


Fig. 5

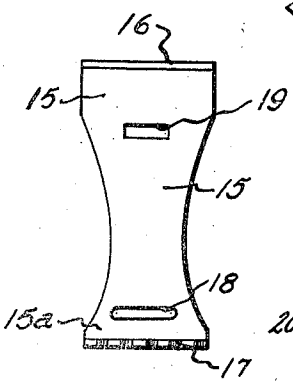


Fig. 6

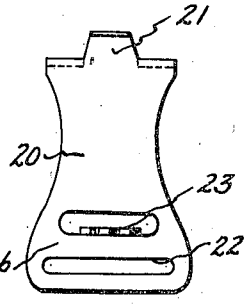


Fig. 7

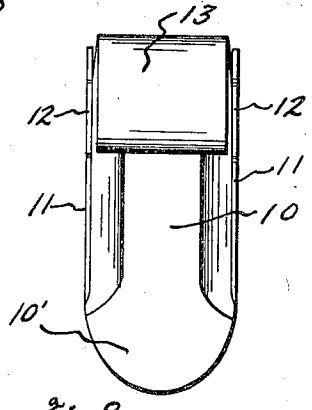


Fig. 8

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CLASP

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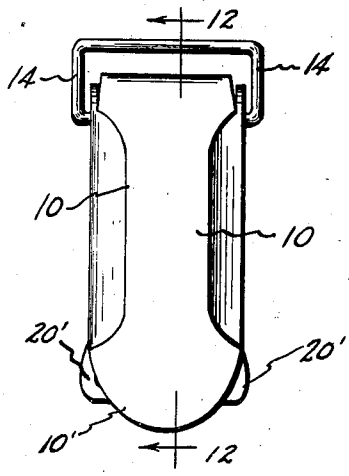


Fig. 9

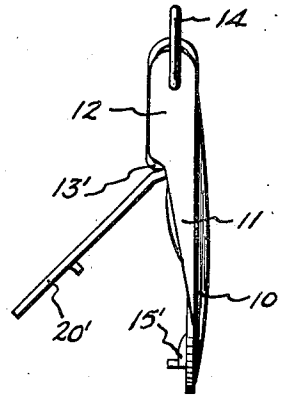


Fig. 10

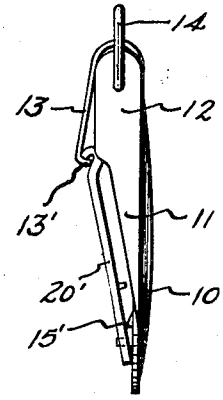


Fig. 11

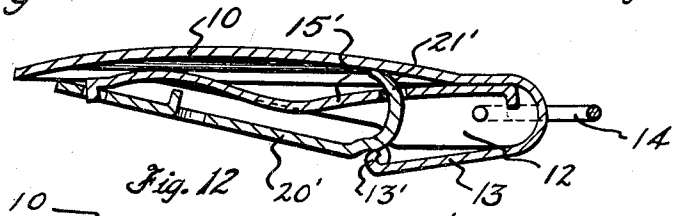


Fig. 12

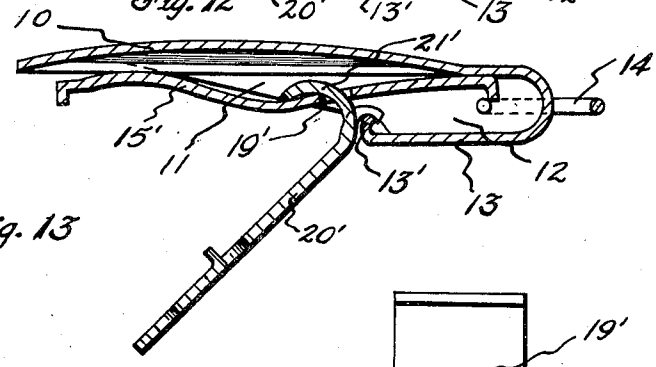


Fig. 13

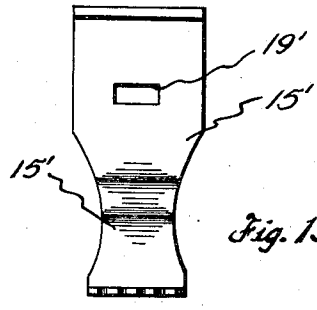


Fig. 15

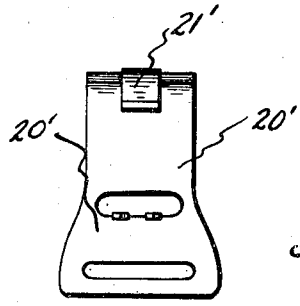


Fig. 14

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UNITED STATES PATENT OFFICE

2,153,853

CLASP

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Application October 17, 1936, Serial No. 106,070

5 Claims. (Cl. 24—252)

This invention relates to new and useful improvements in clasps.

One object of the invention is to provide an improved clasp which may be used for supporting garments, or for engaging fabrics, or for other uses to which a clasp is adaptable.

An important object of the invention is to provide an improved clasp which includes a pair of cooperating clamping members mounted within a cover plate, one of said members being hinged to swing with relation to the other member, whereby a positive and effective clamping action is had.

Another object is to provide a clasp having its clamping members carried by a cover plate, which plate is provided with a resilient extension which engages one of the members to provide a spring action; said extension being arranged to hold the members locked in their clamping position.

A further object of the invention is to provide an improved clasp which is constructed of a pair of cooperating clamping members and a cover plate, which are secured together in such a manner that all rivets, or other permanent fastenings are eliminated, whereby a most simple and inexpensive structure is produced.

Still another object of the invention is to provide an improved clasp including a cover plate in which a clamping member is mounted to slide, and a second clamping member cooperating with the first member and hinged to the cover plate, swinging of said second member controlling the clamping action of the clasp.

A construction designed to carry out the invention will be hereinafter described, together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings, in which an example of the invention is shown, and wherein:

Figure 1 is a front elevation of a clasp, constructed in accordance with the invention,

Figure 2 is a side elevation of the clasp in an opened position,

Figure 3 is a similar view, with the clasp in clamping position,

Figure 4 is an enlarged, longitudinal, sectional view, taken on the line 4—4 of Figure 1,

Figure 5 is a similar view with the clamping members in an open position,

Figure 5*a* is an enlarged transverse, sectional view, taken on the line 5*a*—5*a* of Figure 1,

Figure 6 is an elevation of one of the clamping members,

Figure 7 is an elevation of the other clamping member,

Figure 8 is a rear elevation of the cover plate,

Figure 9 is a front elevation of another form of the invention,

Figures 10 and 11 are side elevations showing the clasp in open and closed positions, respectively,

Figure 12 is an enlarged, longitudinal sectional view, taken on the line 12—12 of Figure 9,

Figure 13 is a similar view, with the clamping members in an open position,

Figure 14 is an elevation of one of the clamping members of this form, and

Figure 15 is an elevation of the other clamping member.

In the drawings, the numeral 10 designates an elongate cover plate which has a general rectangular shape. The plate is slightly convex in cross section and has one end rounded as shown at 10'. Downwardly turned flanges 11 are formed along each longitudinal edge of the plate and as clearly shown in Figures 2 and 3, the flanges are comparatively wide at one end of the plate, whereby hangers 12 are provided. From the hangers, each flange extends along the edge of the plate being gradually reduced so as to merge into said plate at the rounded end 10' thereof.

The plate 10 is provided with an extension 13 which is preferably a continuation of the plate; being constructed of the same material as said plate. The extension is located at the same end of the plate as the hangers 12 and is bent upon itself so as to normally extend parallel to the plate therebeneath. The extension is spaced from the underside of the plate and is of such width that it is located between the hangers 12 (Figure 4). The plate and extension are constructed of a suitable metal which has a certain amount of inherent resiliency or tension, and since the outer or forward end of the extension is free, it will be seen that said extension may undergo a limited movement in a vertical plane. When released, said extension will, of course, return to its normal position in substantially parallel relation to the cover plate. Thus, the extension forms a flat spring member which underlies one end of the plate. A suitable bail or yoke 14 has its end extending through the hangers 12, whereby the plate may be secured to a garment. It is noted that the ends of the yoke project entirely through the hangers and are located beneath the plate.

A longitudinal clamping member 15 which is substantially flat throughout its length is positioned beneath the cover plate 10 and has a

shorter length than said plate, whereby the latter completely covers the same. The member 15 engages the underside of the plate and has one end located between the hangers 12 and between the plate and extension 13. This end of said member is formed with a downwardly turned flange 16, while the other end of the same is provided with downwardly extending gripping teeth 17. The member is comparatively wide at each end and narrow throughout its central portion, as clearly shown in Figure 6. The width of the ends is substantially the width of the cover plate 10, whereby the longitudinal edges of the member 15 abut the inner side of each flange 11. A transverse slot 18 is formed near the forward edge of the member while a similar slot 19 is provided near the opposite end thereof.

From the above, it will be seen that the clamping member 15 is engaging the underside of the plate and is capable of a sliding movement with relation thereto. The flange 16 at the inner end of the member is behind the inwardly projecting ends of the bail or yoke and therefore, these ends prevent the member from being pulled forwardly from beneath the plate 10.

A second clamping member 20, which cooperates with the first member is located beneath said first member, being mounted to swing into and out of engagement therewith. This second clamping member 20 is clearly shown in Figure 7, and is shorter in length than the member 15. The inner end of the member 20 has a width substantially equal to the width of the plate so as to engage the flanges 11, while the outer end of said member is of a greater width so as to extend beyond the edges of both the member 15 and the plate 10. The extreme inner edge of the member 20 is turned downwardly so as to engage over the upwardly turned edge 13' of the extension 13 (Figures 4 and 5), whereby said member is hinged on the extension so as to be capable of swinging in a vertical plane.

A wedge-shaped lug or tongue 21 is formed at the central portion of the inner end of the clamping member 20 and this tongue is curved upwardly so as to engage within the slot 19 formed in the clamping member 15. Due to the wedge shape of the tongue, it will be apparent that the tongue will snugly engage said slot. Since the extension 13 has an inherent resiliency or tension which is constantly tending to move toward the underside of the plate 10, it is obvious that this extension is exerting its tension to urge the inner edge of the clamping member 20 toward the plate and, due to the engagement of the tongue 21 in the slot, the clamping member 15 is held in constant engagement with the underside of the plate. The member 20 is provided with a transversely extending slot 22 at its forward end and upwardly extending teeth 23 adjacent said slot and when the members 15 and 20 are in clamping position, this slot receives the teeth 17 of the member 15 while the teeth 23 engage in the slot 18 of said member.

The operation of the clasp is obvious. The bail or yoke 14 is secured to the garment and the clamping member 20 is swung away from the member 15 to the position shown in Figure 5 whereby the extension 13 is placed under a comparatively great tension. Due to the curvature of the tongue 21, the outer end of this tongue is swung past vertical center with relation to the hinge or pivot point at the end 13' of said extension and thus, the tension of the extension is utilized to hold the clamping members apart. This is true because the extension is urging the inner end of the member 20 upwardly and since the tongue 21 is engaging in the slot 19 of the other clamping member 15, the latter member is held snugly against the underside of the plate.

The fabric, or other material to be clamped is then inserted between the clamping members, and the member 20 is swung upwardly. As it moves toward the other member 15, the tongue 21 swings inwardly and since it is engaging the slot 19 of the member 15, this latter member is slid longitudinally beneath the plate. As soon as the tongue swings past the vertical center with relation to the pivot point, the tension of the extension 13, which acts as a spring, immediately snaps the members into clamping position, as shown in Figure 4. The extension 13 is so constructed that after the members are in clamping position, it is still under tension to lock said members in such position and prevent accidental opening of the clasp. It is noted that the widened outer ends of the members 15 and 20 form clamping jaws 15*a* and 20*b* which have been shown as provided with complementary teeth and slots. However, the jaws may be covered by rubber, or other non-slip material if desired, and also may vary in shape.

It is pointed out that the clasp comprises only three pieces, the plate and two clamping members. This makes for simplicity of manufacture and greatly reduces the cost. The clasp may be readily assembled as all rivets, or other similar fastenings are eliminated. By utilizing an extension of the cover plate as a flat spring, a separate spring member and its mounting is eliminated, and the particular construction shown and described provides means for locking the clasp in either open or closed position. The extension is so constructed that it is under tension at all times, being under a greater tension, however, when the clamping members are opened.

In Figures 9 to 15, I have shown a slightly modified form of the invention. In this form the cover plate 10 is employed and has the bail or yoke 14 secured to one end thereof. In place of the clamping members 15 and 20, I provide slightly modified clamping members 15' and 20'. The clamping member 15' is substantially the same as the member 15, except that instead of being flat throughout its entire length, it is provided with a slight curve or bend near its central portion. It is located within the cover plate 10 substantially the same as is the clamping member 15.

The clamping member 20' is substantially flat throughout its entire surface and has its inner end provided with a forwardly curved tongue 21', which tongue engages in a slot 19' provided in the member 15. The extreme inner end of the member 20' is curved downwardly so as to engage the upwardly curved outer end 13' of the extension 13 (Figure 12).

The operation of this form is substantially the same as the first form except that due to the size and curvature of the tongue 21' of the clamping member 20 and also due to the shape of the clamping members 15' and 20', the extension 13 is placed under its greatest tension when the clamping members are in a clamping position. This is obvious by observing Figure 12 which shows the extension 13 swung downwardly under increased tension at the time the members are in their clamping position. When the clamping member

20' is swung away from the clamping member 15', then the extension 13 is permitted to move inwardly toward the plate 10 so that although it is still under a tension, this tension is not as great as when the members are in engagement with each other. Thus, it will be seen that the essential difference between this form and the form shown and described in Figures 1 to 8 is that the extension 13 is under its greatest tension when the members are in clamping position, instead of being under its greatest tension when the members are separated, as shown in Figure 5 of the first form. The advantages and features of the first form are all present in this latter form shown in Figures 9 to 15. It is believed that the operation of the second form, being exactly as that of the first form, will be readily understood and a detailed description thereof is deemed unnecessary.

What I claim and desire to secure by Letters Patent, is:

1. A clasp including, a cover plate, a spring element beneath one end of the plate and spaced therefrom, a clamping member underlying the plate and having its inner end disposed between the plate and element, a second clamping member having its inner end hinged to the end of the element, whereby the outer end of said latter member may be swung into and out of engagement with the outer end of the first member, there being a slot in the first named member, and a tongue on the swinging member in constant engagement with the slot, whereby the tension of the element is exerted against both members to hold them in position on the plate.

2. A clasp including, a cover plate, a spring element beneath one end of the plate and spaced therefrom, a clamping member underlying the plate and having its inner end disposed between the plate and element, a second clamping member having its inner end hinged to the end of the element, whereby the outer end of said latter member may be swung into and out of engagement with the outer end of the first member, there being a slot in the first named member, and a tongue on the swinging member in constant engagement with the slot, whereby the tension of the element is exerted against both members to hold them in position on the plate, the tongue being curved upwardly from the inner end of the member so that when the members are either in clamping or open position, the tongue is off-center or out of alinement with the hinge, whereby the tension of the spring is utilized to hold said members in either open or clamping position.

3. A clasp comprising a member having one portion forming a cover plate and another underlying portion, a first clamping member underlying and longitudinally slidable against said cover plate, and a second clamping member pivotally engaging said underlying portion of the member and having connection with the first clamping member, whereby the first clamping member is caused to move longitudinally of the cover plate when the second clamping member is swung into clamping engagement therewith.

4. A clasp comprising a member having one portion forming a cover plate and another underlying portion, a first clamping member slidably engaging the under side of said cover plate and having one end extending between both portions of said member, a second clamping member pivotally engaging said underlying portion adjacent to one end thereof, and its other end extending therebeyond and adapted to cooperate with the first clamping member when it is in closed position, and interengaging means on the first clamping member adjacent to its pivoted end engaging the first clamping member for longitudinally moving it when the second clamping member is swung with reference thereto.

5. A clasp comprising, a U shaped member with one leg extended to form an overlying cover plate, a pair of clamping members provided with cooperating gripping elements at one end underlying the outer end of the cover plate and having their other ends located between the legs of the U shaped member, the first clamping member slidably engaging the underside of the cover plate, and the second member pivotally engaging the shorter leg of the U shaped member, and yieldingly held in place thereby, interengaging means on the second clamping member engaging the first clamping member for longitudinally moving it when the second clamping member is swung with reference thereto, and means for limiting the sliding movement of the first clamping member and thereby limit the swinging movement of the second clamping member outward from the first clamping member and cover plate.

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