March 6, 1934. L. ROCKE 1,949,882

DETACHABLE CLASP

Filed Feb. 16, 1933

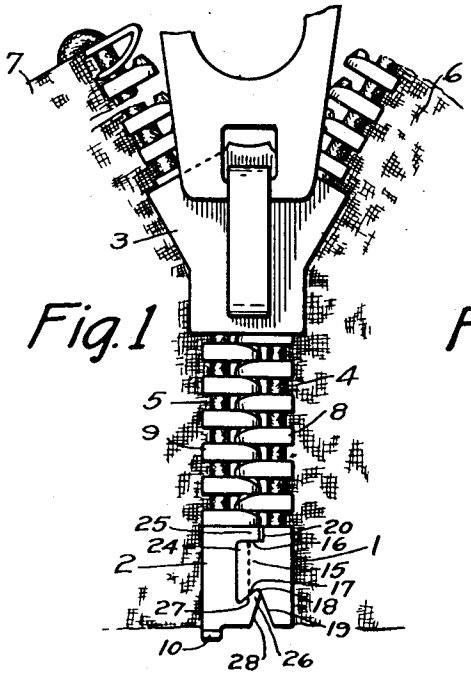


Fig. 1

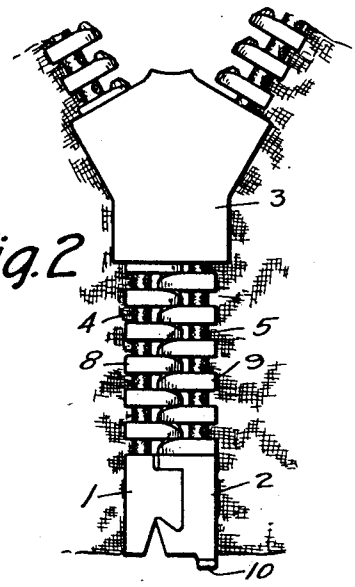


Fig. 2

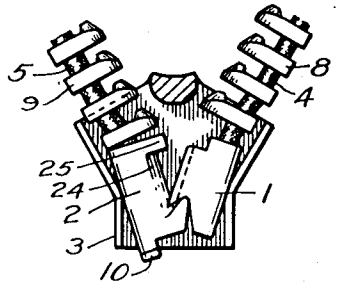


Fig. 3

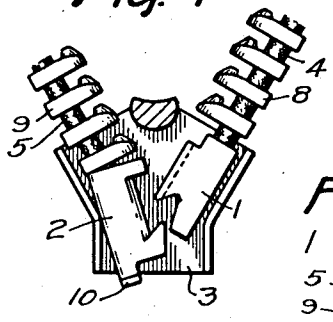


Fig. 4

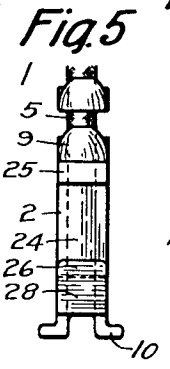


Fig. 5

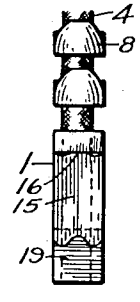


Fig. 6

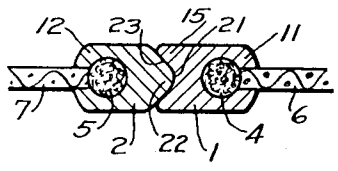


Fig. 7

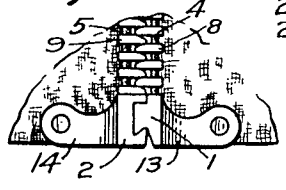


Fig. 8

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DETACHABLE CLASP

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19 Claims. (Cl. 24—205)

The invention is an improvement in detachable clasps used at the ends of separable fastening devices in which a male member is held in a female member by substantially the same method that the separable fasteners are locked and unlocked to and from each other, and in which the members of the clasp may be locked and unlocked by the same sliding cam that locks and unlocks the fasteners.

The object of the invention is to provide an improved detachable clasp for separable fasteners which is so constructed that parts thereof fit into each other with the same movement and in comparatively the same manner as the parts of the fasteners.

Another object is to provide an improvement in detachable clasps for separable fastening devices in which the interlocking parts are formed in the edges of the clasps and within the limits thereof.

Another object is to provide a detachable clasp for separable fasteners in which there are no extended parts projecting beyond the limits of the members thereof.

Another object is to provide a separable fastener lock that may be opened and closed by the same sliding cam that opens and closes the fastener and with the same movement of the cam.

Another object is to provide detachable clasps for separable fasteners having a dove-tail joint in which one side of the joint is completed by substantially a longitudinal movement and the other by substantially a transverse movement.

Another object is to provide a detachable clasp for separable fasteners having a dove-tail joint in which the parts are held transversely.

Another object is to provide a detachable clasp for separable fasteners in which the width of the individual members is substantially the same as that of the fasteners with which it is used.

A further object is to provide means for forming the individual members of a detachable clasp so that one member may be placed into another by a rocking movement and which, when in place, will be locked therein.

A still further object is to provide a detachable clasp for separable fasteners which is neat and attractive and not objectionable in appearance.

And a still further object of the invention is to provide a simple and efficient detachable clasp for separable fasteners which is of a simple and economical construction.

With these ends in view the invention embodies a detachable clasp for separable fasteners comprising two clasp members, the length and width of each being substantially the same as that of the fasteners with which they are used, one of said members having a dove-tailed tongue, the other having a similarly shaped groove adapted to receive the tongue, means preventing lateral movement of one member in relation to the other, and limiting means on one of said members to engage a sliding cam to prevent its passing over said clasp member.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:—

Figure 1 is a view showing a detachable clasp at the end of a string of fasteners with the clasp in the closed position.

Figure 2 is a similar view looking toward the inside of the device showing that both sides of the clasp are substantially the same in appearance.

Figure 3 is a detail showing the two members of the clasp in the position in which one member may be removed from the other.

Figure 4 is a similar view showing one member slightly removed from the other.

Figure 5 is a view looking toward the face of the female member.

Figure 6 is a similar view looking toward the face of the male member.

Figure 7 is a cross section thru the two members of the clasp showing the clasp in the closed position.

Figure 8 is a detail showing an alternate design in which flanges or webs may be provided at the sides of the clasp members for attaching the members to the material of a garment or the like.

In the drawing the clasp is shown as it may be made wherein numeral 1 indicates the male member, numeral 2 the female member, and numeral 3 a sliding cam that may be used to open and close the members.

The members 1 and 2 are mounted at the ends of fabric, tape or stringers 4 and 5 which may be incorporated in the edges of fabric or other material, indicated by the numerals 6 and 7, and this material may be parts of a garment or object of any type or description. The separable fasteners 8 and 9 are also mounted on these stringers, and it will be noted that the outside dimensions of the members 1 and 2 are substantially the same as those of the fasteners 8 and 9 so that the members 1 and 2 do not protrude beyond the limits of the fasteners at any point, with the exception of projections 10 at the lower edge of one of the members which form a stop to limit the downward movement of the cam 3 on the fastening

device. The fasteners 8 and 9 may be of any type or description and are so arranged that the sliding cam 3 will open and close them as it moves downward and upward thereon. These fasteners are of such a type that the fasteners of one stringer will fit into the fasteners of the other stringer and the clasp members 1 and 2 are so designed that one also fits into the other in a manner similar to that of the fasteners 8 and 9, however, these clasp members cannot come apart unless opened by the cam 3.

The members 1 and 2 may be made of any material and may be attached to the stringers 4 and 5 by any means or in any manner. In the design shown these members are provided with protruding flanges 11 and 12, which are crimped over the stringers 4 and 5 as shown in Figure 7, with the member 1 secured to the stringer 4 and member 2 secured to the stringer 5. The back or holding portion of these members may be solid or of thin stamped material, or of any other design and may be arranged in any other manner and any other means may be used for holding these members to the material of the garment or other object. In the design shown in Figure 8 these members are provided with extending flanges or clamps 13 and 14, which may be attached to the material, and it will be understood that these flanges or clamps may be plain or toothed, or may be of any type or design and may be held to the material in any manner.

The member 1 is made with a tongue 15 having a horizontal surface 16 at the upper edge and an inwardly inclined surface 17 at the lower edge which forms a notch 18, and the surface thereof tapers backward on the line 19 from the notch to the lower end of the member. The upper end of the member extends vertically upward on a line 20 from the horizontal line 16 to the top thereof. The face of the tongue 15 is provided with a groove 21, as shown in Figure 7, and the vertex 22 of a bevelled surface 23 in a recess 24 of the member 2 extends into the groove 21 when the two members are in the closed or locked position. At the upper end of the recess 24 is an extending lug 25, the lower surface of which is horizontal to correspond with the surface 16 of the member 1, and at the lower end of the recess 24 is an extending point 26, the upper surface 27 of which is bevelled downward and inward to correspond with the surface 17 of the tongue 15, and the outer surface 28 of the point 26 is also inclined backward and downward forming an angle to correspond with the angle of the surface 19 on the member 1 when the two members are in the open position, or, in the position from which the member 1 may be withdrawn from the member 2 thru the cam 3, as shown in Figure 3. It will be noted that with the cam 3 at the lower end of the stringer 5 the clasp members 1 and 2 will be opened, as shown in Figure 3, and by drawing upward on the stringer 4 the member 1 may readily be removed from the member 2 and then, when it is desired to close the device, the member 1 may be inserted in the cam and, as it is moved downward to the position shown in Figure 3 and then the cam moved upward, these two members will work together with a rocking motion, which is similar to the motion with which the members 8 and 9 are brought together in the locking position. In Figures 3 and 4, the stringers 4 and 5 only are shown, and the fabric or garment to which these stringers are attached is omitted, as these figures are taken thru the center of the cam member 3 and a fabric would obscure the flanges at the edges thereof.

By forming these clasp members in this manner it is possible to lock the ends of the fastening devices together with a device of a very simple and neat appearance, and which has the same appearance from either side, as shown in Figures 1 and 2. It will also be noted that the groove 21 prevents one member sliding laterally out of the other so that both members are positively locked and may not be removed from each other unless opened by the sliding cam. This construction of these clasp members makes it possible to eliminate any parts extending from the members when they are in the free position and, therefore, provides a decided improvement in detachable clasps for separable fastening devices.

It will be understood that changes may be made in the construction without departing from the spirit of the invention. One of which changes may be in the design or arrangement of the interlocking or dove-tail parts of the clasp members, another may be in the use of other means for preventing lateral movement of the members in relation to each other, and still another may be in variations in the angles of the surfaces of the point and recess of the two members. It will also be understood that these clasp members may be used with a cam of any other type or description or with any other means for opening and closing the fastening devices with which they are used. Another change may be in the use of other means for limiting the downward or upward movement of the cam.

The construction will be readily understood from the foregoing description. The detachable clasp members may be attached to the lower ends of the fastening devices by any means, as hereinbefore described, and, with the cam slidable on the stringer 5, the stringer 4 may be placed therein and, as the cam is moved upward, the clasp will lock and hold the lower ends of the fasteners. Garments upon which these devices are used may, therefore, be readily opened and closed, and when in the closed position, one may be assured that they will not open unexpectedly. The devices 4 and 5 have been referred to as stringers and it will be understood that they are flexible and may be made of any tape, fabric, leather or any material to which the material of a garment or the like may be attached and upon which the metallic fasteners may be secured. It will also be understood that any of the parts may be made of any material and the different parts may be secured together by any means or in any manner.

Having thus fully described the invention what I claim as new and desire to secure by Letters Patent, is:

1. A detachable clasp for separable fastener stringers comprising a male member attached to the end of one fastener stringer, and a female member attached to the end of a corresponding fastener stringer, said female member having a recess in the face thereof with a projection having an upwardly inclined surface at the lower end of the recess and a rib extending vertically in the back of the recess, and a horizontal lug extending outward at the upper end thereof, said male member having a tongue with a vertical groove corresponding with said rib, said groove adapted to receive the projection of said female member, and a horizontal surface at the upper end of said male member corresponding with the lower surface of the lug at the upper end of said female member, the lower inner surfaces of said male and female

members receding outwardly thereby permitting said members to be angularly disposed in relation to each other permitting one member to be placed into the other.

2. A separable fastening device of the type wherein a plurality of metallic fasteners are permanently secured upon a pair of flexible stringers and a sliding cam device, having a central channel and diverging channels extending from and communicating with said central channel, is provided for locking and unlocking said metallic fastener, characterized by a clasp member secured to an end of each stringer, said clasp members being provided with transversely positioned dove-tailed locking means, one edge of each of said dove-tailed locking means being perpendicular to the longitudinal axis of the fastening device and the other edge inclined, the lower inner edges of said clasp members also angularly inclined to permit engagement of said edges when the fasteners are in the locking and unlocking position as in said diverging channels of said cam device, means in said clasp members preventing lateral movement of one of said members in relation to the other, one of said clasp members having limiting means terminating the opening movement of said cam device and defining the opening and closing position of said clasp members and fasteners.

3. Fastening devices as described in claim 2 in which the means preventing lateral movement of one clasp member in relation to another is provided in the abutting faces of the dovetail portion of said members.

4. Fastening devices as described in claim 2 wherein the means preventing lateral movement of the clasp members comprises a groove provided in said dove-tailed locking means of one clasp member and a projection is provided in the dovetailed locking means of the other clasp member so as to hold said members against lateral movement with respect to each other.

5. In combination, opposed stringers having two series of separable fastening devices secured thereto, male and female members attached to the stringers at the ends thereof and comprising a separable locking clasp, an opening and closing cam slidable over said separable fastening devices on said stringers, said separable locking clasp adapted to be opened and closed by said cam, the female member of said clasp having a recess in the face thereof with one inclined edge, a tongue on said male member also having one inclined edge corresponding with the inclined edge of the female member and preventing separation of said members with the members interengaging, and means in said tongue and recess preventing sidewise separation of said clasp members.

6. In a device as described in claim 5, in which the lateral movement preventing means consists of a V shaped groove in the longitudinal face of said tongue and a correspondingly shaped projection in said recess.

7. In combination, opposed stringers having two series of separable fastening devices secured thereto, male and female members attached to the stringers at the ends thereof and comprising a separable locking clasp, said male and female members adaped to disengage and interengage with each other when the slidable cam is moved toward and away from the clasp members respectively, said locking clasp members having dove-tailed locking means holding the members, preventing separation thereof in a plane passing thru the longitudinal centers of the stringers, and tongue and groove holding means preventing separation of the clasp members in a sidewise direction or perpendicular to the plane passing thru the longitudinal centers of the stringers.

8. In combination, opposed stringers having two series of separable fastening devices secured thereto, male and female members attached to the stringers at the ends thereof, a tongue on said male member having a horizontal upper surface a short distance from the upper end of said member, and a downwardly inclined lower surface forming a hook at the outer edge thereof and located a short distance from the lower end of said member, and an oppositely positioned hook on said female member inclined upward and located the distance from the lower end corresponding with that of the hook of the male member, said female member having a recess above said hook, and a horizontally extending lug above said recess the lower surface of which corresponds and cooperates with the horizontal surface of the tongue of the male member.

9. In a detachable clasp as described in claim 8, means preventing lateral movement between said male and female members.

10. In a detachable clasp as described in claim 8, a vertical groove in the end of the tongue of said male member, and a projection in the back of said female member corresponding and cooperating with said groove to prevent lateral movement between said members, the tongue of said male member formed within the limits of said member, and not extending beyond the ends of fastening devices used in combination with said clasp.

11. In a detachable clasp as described in claim 8, a vertically positioned tongue and groove in said male and female members holding said members laterally, and limiting means on one of said members for stopping and holding an operating member in such a position that the male member may be placed in or removed from said female member.

12. In a detachable clasp as described in claim 8, a slidable operating member adapted to open and close said male and female members.

13. In a detachable clasp as described in claim 8, a slidable operating member adapted to open and close said male and female members, and means on one of said members limiting the movement of said operating member.

14. In a device as described in claim 8, said dove-tail locking means, having a beveled joint at the lower edge, and a horizontal joint at the upper edge.

15. In a device as described in claim 8, said dove-tail locking means adapted to close with a rocking movement.

16. In a device as described in claim 8, said dove-tail locking means having a projection on one member adapted to be placed downward into a socket in the other forming the lower edge of the joint, and the parts of the upper edge of said joint adapted to slide horizontally into one another.

17. In a locking clasp as described in claim 5, a projection on said female member and said male member having a groove adapted to receive said projection, said projection and groove positioned at one end of the tongue and recess of said members.

18. In a locking clasp as described in claim 7, a tongue on said female member at the end of said dove-tailed locking means and said male member having a recess at the end of said dove-

tailed locking means to receive the tongue of said female member.

19. In combination, opposed stringers having two series of separable fastening devices secured thereto, male and female members attached to the stringers at the ends thereof, a tongue on said male member having a recess formed at the upper end thereof, and having an upwardly inclined surface forming a hook at the opposite end which is located a short distance from the lower end of said member, said female member having a recess adapted to disengage and interengage with the tongue on said male member, the lower end of said female member having a hook adapted to receive the point of the hook of the male member and said female member having a tongue at the upper end adapted to interengage with the recess at the end of the tongue of the male member.

LOUIS ROCKE.