Feb. 8, 1949. R. L. RANK 2,461,083

CLIP

Filed Feb. 21, 1944

Fig. 1.

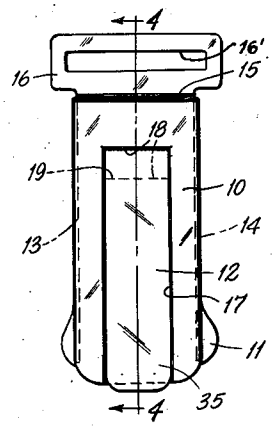



Fig. 2.

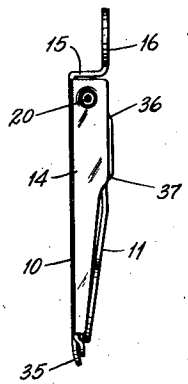



Fig. 4.

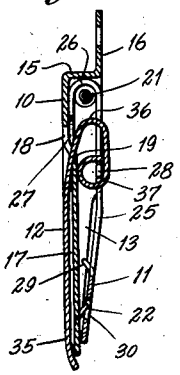



Fig. 3.

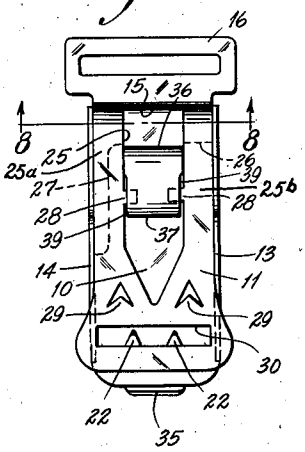



Fig. 5.

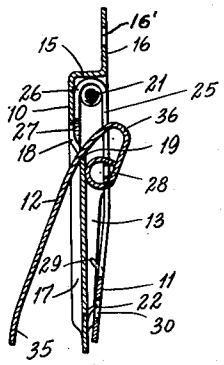



Fig. 6.

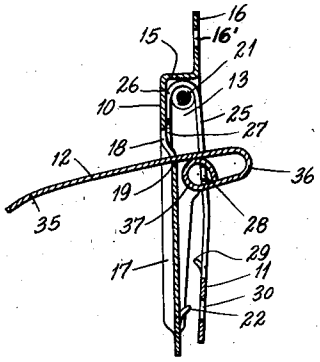



Fig. 7.

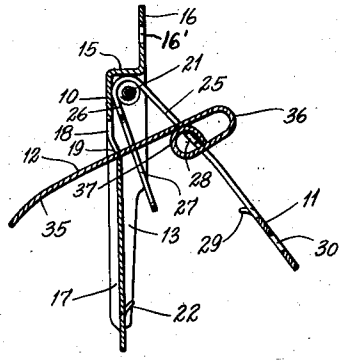
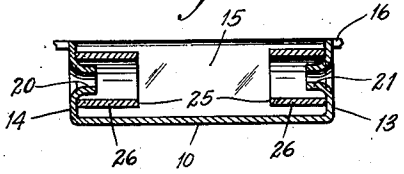



Fig. 8.

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# UNITED STATES PATENT OFFICE

2,461,083

## CLIP

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Application February 21, 1944, Serial No. 523,242

7 Claims. (Cl. 24—250)

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The present invention relates to a clip. More particularly, it comprises a snap-action clip for holding material.

The clip is capable of general use but it is particularly desirable in connection with catamenial pads.

Among the objects of the invention is the provision of a clip of the kind which has a spring-like clamping action which has no outstanding edges that could provide either discomfort or something to cause accidental opening.

Particular objects include the provision of a clip of this kind having a minimum number of parts, each of which is capable of inexpensive manufacture and which may be assembled inexpensively to provide a sturdy device.

In the drawing:

Fig. 1 is a front view of the clip;

Fig. 2 is a side view thereof in closed position;

Fig. 3 is a back view of the clip;

Fig. 4 is a longitudinal section taken on the line 4—4 of Fig. 1 with the clip closed;

Figs. 5, 6 and 7 are sections similar to Fig. 4 but showing the clip in varying degrees of closure; and

Fig. 8 is a transverse section on the line 8—8 of Fig. 3.

The clip comprises three portions consisting of a front member 10, a back member 11 and a latch member 12. The design is such that each of these members may be made from a stamping or a molding.

The front member 10 has side flanges 13 and 14 and a top flange 15 that is bent out at 16 to provide a strap-receiving ear having a slot 16' therein.

The front member 10 in its main body portion has a longitudinal channel 17 therein, at the top part of which there is a slot 18. This slot has a lower edge 19 for a purpose to be described.

At the upper part of the two flanges 13 and 14 are bosses 20 and 21 that are struck inwardly, as is more particularly shown in Fig. 8.

The lower part of the front member 10 has clamping prongs 22 struck backwardly therefrom.

The back member 11 is bifurcated by a slot 25 and formed with two arms 25a and 25b. The upper ends of these arms or forks are bent over at 26 so that they may engage around the bosses 20 and 21. A slight deformation of the parts permits the back member 11 to be snapped into position over the bosses 20 and 21 where it will remain securely held. It will be observed from Fig. 6 that one of the overturned ends of the member 11, shown at 27, is narrowed down to

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be more flexible, is extended to lie along the front member 10, and is preset to an angle, relative to the back member (see Fig. 7), that causes it to act as a spring urging the two members 10 and 11 to open position.

The inner walls of the slot 25 in the member 11 are provided with two extensions 28 integral therewith that are adapted to receive the latching member 12. The lower part of the member 11 has clamping prongs 29 struck toward the front member 10 therefrom and preferably has a slot 30 to be disposed opposite the prongs 22 on the member 10.

The latching member 12 comprises a relatively narrow strip-like piece of material fashioned into a tongue 35 adapted to pass through the slot 18 and to close down into the depression 17 in the front member 10. The back part of the latch member 12 is bent upon itself at 36 and then is bent around again to provide a tubular or loop portion 37 that may engage over the two extensions 28 projecting outwardly from the walls of the slot in the back member 11. By reference to Fig. 3, it will be seen that the width of the latch member decreases somewhat at 39 near the extensions 28.

The device is assembled as follows:

First the latch member 12 is secured on to the extensions 28 of the back member 11. This is readily accomplished by warping one of the arms of the bifurcated portion out of the plane of the other, whereupon the two extensions may be engaged in the tubular portion 37. As the member 11 springs back to its normal shape, the latch member 12 will be securely held.

The tongue 35 of the latch member is then inserted through the slot 18 of the front member 10. The upper part 26 of the back member 11 may then be snapped into position over the bosses 20 and 21, by the yielding of the flanges 13 and 14, and of the arms of the back member 11. In this insertion, the member 11 will be slightly angularly disposed relative to the member 10, but the cut-back portion 39 on the latch member permits it to wobble slightly on the extensions 28 to accommodate this angular disposition. After the parts are thus assembled, the latch member, when closed, interposes its wider part within the slot 25 to spread the bifurcations and spring them outwardly, adding to their normal spring to hold them over the bosses 20 and 21.

When the device is thus assembled, it operates as follows:

In the opening position shown in Fig. 7, the material is inserted between the front member

10 and the back member 11. It will be seen that the bottom wall 19 of the slot 18 is disposed so that a downward force applied to the end of the tongue 35 of the latch member will tend to close the front 10 toward the back member 11, owing to the disposition of the bend 36 above the pivots provided by the extensions 28. When the parts of the clip reach the position of Fig. 6 they are substantially closed. Further depression of the tongue 35 will draw them tightly together, clamping the material between them. In the closing action, one of the overturned ends of the back member 11, shown at 27, applies an opening force which is overcome by the latching operation. As the tongue 35 is depressed from the position of Fig. 6 to the position of Fig. 5, the wall 19 of the slot 18 causes a spreading of the tongue 35 away from the loop 37 by bending about the portion 36 which is displaced from the loop to permit such action. When an overcenter point is reached, thereafter the tongue 35 will readily move down into the depression 17 of the front member 10 with less than the maximum deformation of the latch member 12, so that the same will hold tightly, the latter being made possible by having the wall 19 related to the pivot 26 as is clearly shown in the drawing.

When the device is closed, it will be seen that there are no outstanding parts that could cause accidental opening. However, the bottom end of the tongue 35 may be readily lifted for opening purposes. It will also be observed that any force applied from the back against the latch member tends to close the same and applies a resistance to opening thereof.

What is claimed is:

1. In a clip, a front member having side flanges thereon, oppositely disposed pivot portions on the said flange members, a back member having separated bent sections snapped over the pivot portions on the front member, latch means to, draw the two portions together in clamping relationship, said latch means comprising a latch device pivotally attached to one of said members and extending through the other member, there being a slot in the front portion through which the latch means extends, the said slot having a wall disposed slightly toward the pivot between the front and back portions from the pivot of the latch member on the back member, whereby the latch member may engage said edge to be closed with an over-center action.

2. In a clip, a front member having said flanges slightly yieldable outwardly and portions oppositely disposed upon the side flanges to provide a pivot means, a bifurcated back member having forks bent at their ends and adapted to be snapped over said pivot means for attaching the back member pivotally with the front member, said forks of said back member having projections extending toward each other, a latch member comprising a unitary strip bent in the form of a U having one of its arms terminating in a loop and the other forming a tongue extending beyond the loop, said loop being engageable over the projections on the forks of the back member, the loop portion being narrower than the space between the forks to permit said forks to yield toward one another for engagement of their bent ends over the pivot portions on the front member, the outwardly projecting part of the latch member being as wide as the space between the forks whereby to spread them outwardly, the tongue of the latch member being adapted to extend through the front member, an edge on the front member disposed nearer the pivot portions of the front member than the projections engaging the loop of the latch, whereby the tongue may be forced downwardly over said edge and by such movement be spread a greater distance initially than at the end of said movement whereby to hold the clip in closed position.

3. In a clip, a front member having side flanges slightly yieldable outwardly and portions oppositely disposed upon the side flanges to provide a pivot means, a bifurcated back member having forks bent at their ends and adapted to be snapped over said pivot means for attaching the back member pivotally with the front member, said forks of said back member having projections extending toward each other, a latch member comprising a unitary strip bent in the form of a U having one of its arms terminating in a loop and the other forming a tongue extending beyond the loop, said loop being engageable over the projections on the forks of the back member, the loop portion being narrower than the space between the forks to permit said forks to yield toward one another for engagement of their bent ends over the pivot portions on the front member, the outwardly projecting part of the latch member being as wide as the space between the forks whereby to spread them outwardly, the tongue of the latch member being adapted to extend through the front member, an edge on the front member disposed nearer the pivot portion of the front member than the projections engaging the loop of the latch, whereby the tongue may be forced downwardly over said edge and by such movement be spread a greater distance before the end of its movement than at the end of its movement whereby it holds itself in close position, said front member having a depressed portion to receive the latch member.

4. In a clip, a front member, a back member, a latch member, said front member having a main body with a transverse slot therein and including side flanges having opposed pivot bosses, said back member being bifurcated and including two arms bent back upon themselves, each arm including a lateral extension, said back member engaging over the pivot bosses at the bend in pivotal relationship, said latch member comprising a resilient strap bent back upon itself and including a looped end pivotally engaging said lateral extensions, the other end of said latch member extending through the transverse slot in said front member and engaging the edge thereof remote from the pivot bosses of said front member, the relationship of said remote edge, said pivot bosses and said pivot lateral extensions being such that an overcenter action obtains between said latch member and said remote edge to provide a latching and holding action and a release action, and opposed clamping prongs near the free ends of said front and back members adapted to rest adjacent each other when said clip is in latched position and to be remote from each other when said clip is in unlatched position.

5. In a clip, a front member, a back member, a latch member, each of said three members comprising a formed stamping, said front member having a main body with a transverse slot therein and including side flanges having opposed pivot bosses, said back member being bifurcated and including two arms bent back upon themselves, each arm including a lateral extension, said back

member engaging over the pivot bosses at the bend in pivotal relationship, said latch member comprising a resilient strap bent back upon itself and including a looped end pivotally engaging said lateral extensions, the other end of said latch member extending through the transverse slot in said front member and engaging the edge thereof remote from the pivot bosses of said front member, the relationship of said remote edge, said pivot bosses and said pivot lateral extensions being such that an overcenter action obtains between said latch member and said remote edge to provide a latching and holding action and a release action, and opposed clamping prongs near the free ends of said front and back members adapted to rest adjacent each other when said clip is in latched position and to be remote from each other when said clip is in unlatched position.

6. In a clip, a front member, a back member having separated bent sections, means pivotally supporting said back member on said front member and engaging said separated bent sections, latch means to draw the two portions together in clamping relationship, said latch means comprising a latch device pivotally attached to one of said members and extending through the other member, there being a slot in the front portion through which the latch means extends, the said slot having a wall disposed slightly toward the pivot between the front and back portions from the pivot of the latch member on the back member, whereby the latch member may engage said edge to be closed with an over-center action.

7. In a clip, a front member, a back member, a latch member, said front member having a main body with a transverse slot therein and including side flanges, said back member being bifurcated



and including two arms bent back upon themselves, each arm including a lateral extension, means associated with the side flanges of said front member and pivotally engaged by the back member at the bend of its two arms, said latch member comprising a resilient strap bent back upon itself and including a looped end pivotally engaging said lateral extensions, the other end of said latch member extending through the transverse slot in said front member and engaging the edge thereof remote from the pivot bosses of said front member, the relationship of said remote edge, said pivot bosses and said pivot lateral extensions being such that an over-center action obtains between said latch member and said remote edge to provide a latching and holding action and a release action, and opposed clamping prongs near the free ends of said front and back members adapted to rest adjacent each other when said clip is in latched position and to be remote from each other when said clip is in unlatched position.

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