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G. SUNDBACK

1,959,318

SEPARABLE FASTENER

Original Filed Nov. 11, 1929

Fig. 1

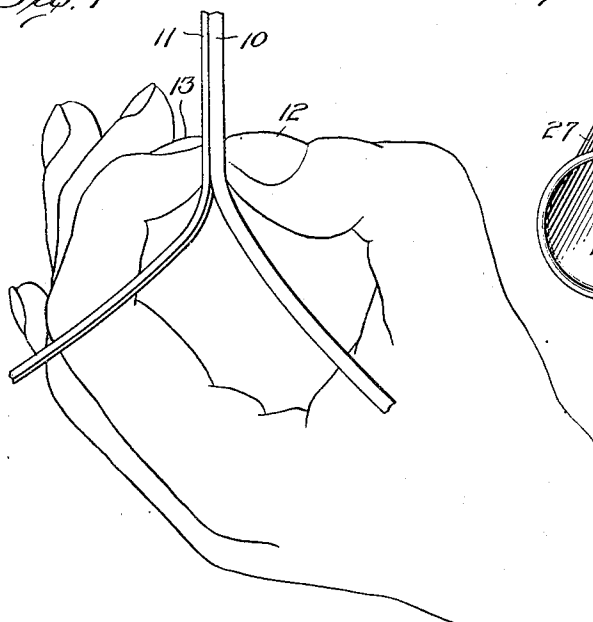


Fig. 3

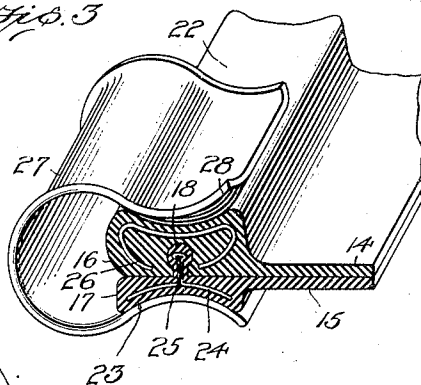


Fig. 5

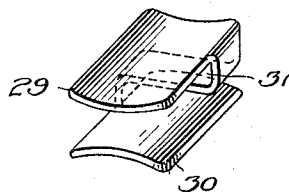


Fig. 2

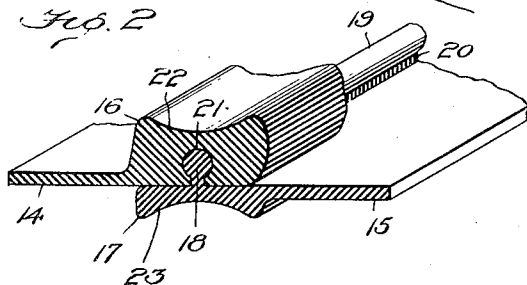


Fig. 4

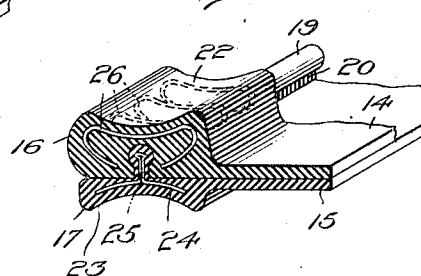
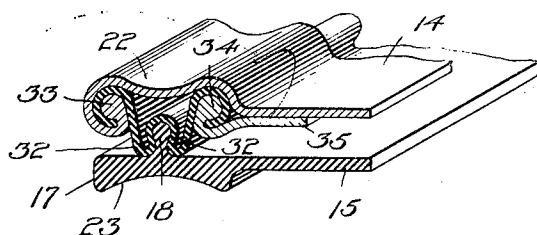


Fig. 6



INVENTOR
Gideon Sundback
BY *R. S. Kelley*
ATTORNEY

UNITED STATES PATENT OFFICE

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SEPARABLE FASTENER

Gideon Sundback, Meadville, Pa., assignor to
Hookless Fastener Company, Meadville, Pa., a
corporation of Pennsylvania

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Renewed October 10, 1933. In Great Britain
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17 Claims. (Cl. 24—205)

My invention relates to fastening devices and particularly to that class of such devices employed to fasten the separate parts of articles of wearing apparel, luggage, receptacles and similar articles.

The present application is a continuation in part of my Patent No. 1,746,565, granted February 11, 1930.

An object of the present invention is to provide a fastening device of the class mentioned that can be made from material having inherently resilient properties such as rubber, leather, fabric and pyroxylin composition or similar material.

Another object of my invention is to provide an improved construction of fastening devices of this class, composed of material which may be molded to the desired finished shape.

Still another object of my invention is to provide a fastener construction having the separate parts to be coupled and uncoupled molded out of rubber which preferably is provided with suitable reinforcements.

A still further object is to provide an improved fastener which shall have an improved appearance over other fasteners of this class.

Other objects and advantages of my invention will more fully appear during the course of the following specification and claims.

In the accompanying drawing, I have shown for purposes of illustration, certain preferred embodiments which my invention may assume in practice. In this drawing:

Fig. 1 illustrates one manner in which the parts equipped with my improved fastener may be coupled.

Fig. 2 is an isometric sectional view illustrating one embodiment of my invention.

Fig. 3 is a similar view illustrating another embodiment and equipped with a slider.

Fig. 4 is an isometric view with parts broken away to show more fully the construction of Fig. 3.

Fig. 5 is an isometric view of a slider which may be employed with the fastener of Fig. 2.

Fig. 6 is an isometric sectional view showing another modification of my invention.

In Fig. 1, the parts 10 and 11 of an article to be coupled or uncoupled are shown in plan or edge view and are being closed by the thumb 12 and finger 13 of the operator illustrating the simplicity of operation of the fastener.

The embodiment shown in Fig. 2 is particularly adapted for garment applications and comprises two separate parts having body portions 14 and 15 which are formed of material having marked resilient properties, preferably formed by being

molded out of rubber. The heavier projecting portions 16 and 17 are formed integrally with the body portions and overlap each other when fastened together. The interlocking portion of the lower member comprises a projection 18 extending outwardly from the inner face of the projecting portion 17 and this projection preferably is made of an enlarged cylindrical portion 19 joined to the body of the material by a web 20. The opposite member has a socket 21 formed therein which is of the same shape as the projection, both the projection and recess extending continuously along the edges of said parts for the full length of the parts to be coupled, although the invention in some of its aspects is, of course, not limited to a single continuous projection and recess. The external surfaces of the heavier portions 16 and 17 are grooved as indicated at 22 and 23 respectively to provide suitable means for guiding the thumb and finger of the operator or a suitable sliding device when desired. It will be observed that the entire visible outer surfaces of the parts are substantially uninterrupted whereby the fastener presents a finished appearance.

In Fig. 2 the fastener is shown without any reinforcements and this form may be sufficiently strong for some applications. However, when greater strength is wanted, it may be obtained by suitably reinforcing the projection and walls of the socket. In Figs. 3 and 4 one form of such reinforcement is illustrated. The lower member 15 has a series of metal wire members 24 molded into the heavier portion 17 and an extension 25 of each of these wire members extends upwardly into the beaded projection 18. The recessed member 14 is provided with a similar series of wire reinforcements each comprising a wire 26 bent around the walls of said recess and having its ends disposed closely adjacent the mouth of such recess. The fastener illustrated in this figure has its body portions 14 and 15 extending in the same direction, which would be the case in articles such as handbags and receptacles. The fastener is also equipped with a slider 27 which has wings disposed on the opposite sides of the parts to be coupled. The wings are preferably curved to fit into the grooves 22 and 23 and the ends of the slider are turned up as indicated at 28 so that they will not dig into the material of which the fastener is composed.

The slider shown in Fig. 5 is of a slightly different type adapted for use with the fastener illustrated in Fig. 2 where the separate parts 14 and 15 extend in opposite directions. This slider comprises a pair of wings 29 and 30, which in

use are disposed on the opposite sides of the parts to be coupled and are guided by the grooves 22 and 23. The wings are connected at one end by a strip of metal 31 which runs between the parts of the fastener during movement of the slider to spread them apart and effect uncoupling.

In the modification shown in Fig. 6, the lower member 15 may be of the same construction as shown in Figs. 2 or 3. The other part instead of having a continuous socket molded into the material is provided with a series of spaced metal locking members 32 adapted to grip the beaded edge 18 of the other part of the fastener. These members 32 may be bent up from sheet metal and at one end are clamped to a corded edge 33 of the material 14 which may be the material of the article to be fastened. It will be observed that the extension of the material serves as a covering for the locking members 32. The other ends of the locking members are clamped around a corded edge 34 of the flexible strip 35 which may be attached to the material 14. This form of the invention may also be operated either by hand or by means of a slider shown in Figs. 3 and 4.

In carrying out that phase of my invention which pertains to making a fastener out of molded material it will be observed that the interlocking construction may be varied, as desired, to suit the requirements of the material.

The operation of the various forms of my invention described above will now be readily apparent. Assuming that the separate parts of the fastener are open and it is desired to close the same, the operator simply places his thumb and finger in the grooves 22 and 23 adjacent the connected end of the parts and moves them along the grooves. The two sides of the fastener are thus pulled together and approach each other at an angle. When the recessed side of the fastener is bent at a point adjacent the thumb and finger, the socket opens up and allows entrance of the projection on the other part. After the projection enters the socket it is held securely in place until the two parts of the fastener are torn apart by an intended movement beginning at one end of the fastener. The operation of the form shown in Fig. 6 is substantially the same. The beaded edge of the projection is simply squeezed into the interlocking recess of the clamping members 32. The operation with a slider is about the same as with the use of the thumb and finger. The slider serves to hold the fastener locked in fastened condition and the fastener can be torn apart only when the slider is moved to the other end of its travel. When the slider in Fig. 5 is employed, the fastener is opened up simultaneously with the movement of the slider in one direction.

In carrying out my invention, I prefer to use a rubber which has considerable toughness and strength and at the same time possesses a fairly high degree of flexibility. The desired characteristics can be imparted to the material by processes well known in the rubber art.

As a result of my invention, it will be apparent that a fastener has been devised which is very suitable for garments, luggage and other articles because it has no exposed metal parts. The fastener can be manufactured very easily and cheaply by simply molding it out of rubber or other material which may be reinforced if desired to provide additional strength.

While I have in this application illustrated and described certain specific embodiments which my invention may assume in practice, it is to be un-

derstood that these embodiments are merely for the purposes of illustration and that various other forms may be devised within the scope of my invention as defined in the following claims.

What I claim as my invention is:

1. A fastening device of the class described comprising separate parts with relatively long adjacent edges adapted to be coupled and uncoupled, each of said parts being composed of highly resilient material, said edges being flexible longitudinally because of the inherent resiliency of said material and having mating interlocking portions integral therewith along the entire length of the adjacent edges of said parts to be coupled.

2. A fastening device of the class described comprising separate parts with relatively long adjacent edges adapted to be coupled and uncoupled, each of said parts being composed of inherently resilient material and having mating interlocking portions of the same material extending substantially the entire length of the adjacent edges of said parts to be coupled.

3. A fastening device of the class described comprising separate parts with relatively long adjacent edges adapted to be coupled and uncoupled each of said parts being composed of rubber and having mating interlocking portions integral therewith and extending substantially the entire length of the adjacent edges of said parts to be coupled.

4. A fastening device of the class described comprising separate parts with relatively long adjacent edges adapted to be coupled and uncoupled, each of said parts being composed of material having marked inherently resilient properties, one of said parts having interlocking projecting means formed of said material and integral with said part, the other of said parts having means for receiving and holding said projecting means also formed of said resilient material, said projecting means and receiving means being adapted to be brought together and progressively interlocked from one end of said edges to the other.

5. A fastening device of the class described comprising separate parts of substantial length adapted to be coupled and uncoupled, each of said parts being composed of molded material having marked resilient properties and having mating elongated interlocking portions molded integral therewith and extending continuously along the adjacent edges of said parts to be coupled, said interlocking portions adapted to be progressively interlocked from one end of said parts to the other.

6. A fastening device of the class described comprising separate parts adapted to be coupled and uncoupled, each of said parts being composed of material having marked inherently resilient properties, one of said parts having interlocked projecting means formed of said material and integral with said part, the other of said parts having means for receiving and holding said projecting means also formed of said resilient material, and a slider having wings disposed on opposite sides of said parts for coupling and uncoupling the same.

7. A fastening device of the class described comprising separate parts adapted to be coupled and uncoupled, each of said parts being composed of flexible material and having fastening means integral therewith, the fastening means of one part interlocking with those of the other part, cooperative means on the fastening means of the

separate parts for preventing the separation of said parts when coupled together, and a slide member slidably engaging said parts for coupling and uncoupling the same.

5 8. A fastening device of the class described comprising separate parts adapted to be coupled and uncoupled, each of said parts being composed of flexible material and having a projecting portion integral therewith, the projecting
10 portion of one part interlocking with that of the other part, cooperative means on the projecting portion of the separate parts for preventing the separation of said parts when coupled together, a slide member slidably engaging said parts for
15 coupling and uncoupling the same, and means on said parts and slide member for keying the slide member thereto and for guiding the same in its movement longitudinally thereof.

9. A fastening device comprising opposing
20 strips of resilient material, the strips lapping each other and having lengthwise interlocking tongues and grooves on their opposing lapping surfaces and a slide movable along the strips for interlocking them, the slide conforming to the outline
25 of the lapping portions of the strips and extending between the interlocking portions of the strips.

10. A fastening device comprising opposing strips of resilient material, the strips lapping each other and having lengthwise interlocking tongues and grooves on their opposing lapping surfaces and a slide movable along the strips for interlocking them, the slide conforming to the outline of the lapping portions of the strips and extending
35 between the interlocking portions of the strips and also around the outer surfaces of the strips.

11. A fastening device comprising opposing strips of resilient material, the strips lapping each other and being tensioned to press their lapping faces toward each other, the strips having complementary interlocking hooks extending lengthwise thereof on their lapping faces and a slide movable along the strips for interlocking them, the slide extending between the interlocking portions and also around the outer surfaces of the
45 strips.

12. A fastening device comprising opposing strips of resilient material, the strips lapping each other and having continuous lengthwise interlocking beads on their opposing lapping surfaces and a slide movable along the strips for interlocking them, the slide conforming to the outline of the lapping portions of the strips and extending between the interlocking portions of the strips and also around the outer surfaces of the strips.

13. A fastening device of the class described comprising elongate edges adapted to be coupled and uncoupled, interlocking fastening means carried by said edges throughout the length thereof adapted to be progressively engaged and disengaged from one end to the other of said edges, the
60 outer visible surfaces of said fastening device on

at least one side thereof being formed of rubber, said surfaces being smooth and substantially uninterrupted throughout the length of the fastening device and shaped to provide a continuous trackway for a slider, and a slider mounted on
80 said trackway for engaging and disengaging said interlocking fastening means during movement thereof along said fastening device.

14. A fastening device of the class described comprising separate parts of substantial length
85 adapted to be coupled and uncoupled, each of said parts being composed of material having marked resilient properties, said parts molded to form a mating projection and recess of said material, adapted to be interlocked to fasten said parts, and reinforcing means molded into said parts adjacent said projection and recess to resist deformation of said projection and the walls of said recess when interlocked.

15. A fastening device of the class described comprising separate parts adapted to be coupled and uncoupled, said parts being molded out of rubber, one having an elongated projection integral therewith and the other having means forming an elongated recess for receiving said
100 projection in interlocked relation to fasten said parts, and reinforcement means molded into said rubber of said recessed part and positioned to resist separation of the walls of said recess when interlocked with the projection.

16. A fastening device of the class described comprising separate parts adapted to be coupled and uncoupled, each of said parts being composed of flexible material and having a fastening portion integral therewith, the fastening portion of one part interlocking with that of the other part, cooperative means on the fastening portions of the separate parts for preventing the separation of said parts when coupled together, a slide member slidably engaging said parts for coupling and uncoupling the same, means on said parts and slide member for keying the slide member thereto and for guiding the same in its movement longitudinally thereof, and means for reinforcing each of said parts.
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17. A fastening device of the class described comprising two continuous elongated and interlocking strip-like members, one of said members having adjacent its outer edge an enlarged rib forming oppositely disposed shoulders, and the other member of said device having adjacent its outer edge a longitudinal groove, the cross section of which corresponds to that of said rib, the side walls of said groove being flexible so that said rib may be inserted therein whereby the side walls of said groove engage around said shoulder portions to couple said members together, and a slider member slidably engaging said members for coupling and uncoupling the same.
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GIDEON SUNDBACK.