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H. E. SIPE

2,035,675

SEPARABLE INTERLOCKING FASTENER

Filed Sept. 1, 1933

Fig. 1.

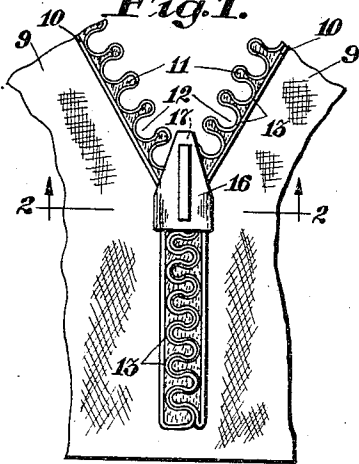


Fig. 2.

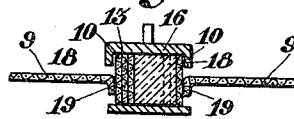


Fig. 3.

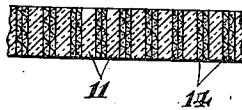


Fig. 4.

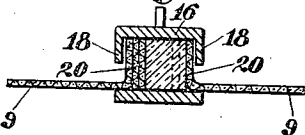


Fig. 5.

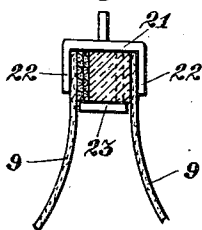


Fig. 6.

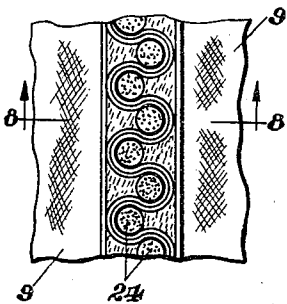


Fig. 7.

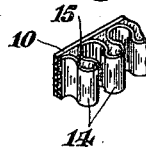
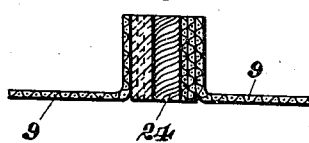


Fig. 8.



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2,035,675

SEPARABLE INTERLOCKING FASTENER

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Application September 1, 1933, Serial No. 687,797

8 Claims. (Cl. 24—205)

My invention relates to separable interlocking fasteners and particularly to an improved form of fastener which can be made from non-metallic materials.

5 An object of the invention is to provide an improved fastener which can be easily and cheaply manufactured and which will be smooth in operation and neat in appearance.

10 A further object is to provide an improved fastener which can be easily made of materials which are durable and which can be produced in any color desired.

Other objects and advantages of the invention will hereinafter more fully appear.

15 In the accompanying drawing I have shown for purposes of illustration one embodiment and some modifications thereof which my invention may assume in practice. In the drawing:

Fig. 1 is a plan view of a fastener constructed in accordance with my invention;

20 Fig. 2 is a cross-section on line 2—2 of Fig. 1;

Fig. 3 is a longitudinal central section;

Figs. 4 and 5 are cross-sections illustrating modifications;

25 Fig. 6 is a perspective view of a small portion of the fastener to illustrate the details of construction;

Fig. 7 is a plan view of a portion of a fastener; and

30 Fig. 8 is a cross-section on line 8—8 of Fig. 7.

According to the present invention, fastener strips are formed principally from fabric materials by using narrow backing strips and having the interlocking members attached thereto

35 by sticking material. In order to attach the fastener in an article, it may be necessary to secure mounting strips to the sides of the backing strips opposite the projections. In the drawing, the mounting strips are shown as fabric tapes 9,

10 which can be integrally jointed at the lower end if desired. In order to give the backing strips the required degree of rigidity they are dipped in a solution of pyroxylin material or any suitable sizing material. At the lower end the backing strips are turned over and folded into a series of loops to provide spaced projections 11

with correspondingly shaped spaces 12 between them. The folded tape is secured to the backing strips by sticking material, preferably by the space

0 inside the projections being filled with stiffening material such as pyroxylin or other suitable material. This process can be carried out in a mold which will hold the fabric in proper position. Each of the projections as noted in Fig. 6, comprises a cylindrical head portion 14 and a narrow-

er neck 15. They are so shaped that when the projections on one side are intermeshed with the projections of the other side, the heads will interlock behind one another and prevent separation. The projections will easily roll together like the teeth of a gear or rack and the opening and closing can be accomplished by means of a slider 16. This slider has a wedge shaped portion 17 for spreading the members apart and side flanges 18 on at least one of the slider wings for pulling the strips together. The wedge portion serves to guide the strips into proper position during closing.

It will be clear that the resulting structure comprises strips having relatively more rigid 15 heads with narrower necks and relatively wide bases between the points 13 for example, in the drawing, which are joined to the strips 10 by the plastic material itself or by any other suitable sticking material forming a bond between the heads and the fabric strips. The outer surfaces of the interlocking heads and the surfaces between the heads are all fabric surfaces thereby making an exceedingly smooth operating fastener and one which has a pleasing appearance, and also having the advantage of being smooth to the touch.

In Fig. 2 the mounting tapes 9 are shown secured at 19 to approximately the middle part of the backing strips. In Fig. 4 the mounting tapes 30 have the edges 20 extending over the full width of the backing strips.

In Fig. 5 the mounting tapes are extended downwardly which provides a very convenient fastener for bags. In this case the upper wing 21 35 of the slider carries wide flanges 22 and the narrow wing 23 has no flanges.

In the modification shown in Figs. 7 and 8, the construction is the same except that the tape which is used to form the outer surfaces of the 40 projections, is folded around cords 24. This assists in making the cylindrical head and requires less filling material.

While I have shown and described in this application one embodiment and some modifications 45 which my invention may assume in practice, this embodiment is merely for the purposes of illustration and description and it will be understood that other forms may be devised within the scope of my invention as set forth in the appended 50 claims.

What I claim as my invention is:

1. A separable fastener of the class described comprising flexible backing members having parallel surfaces arranged in opposed relation to each 55

other, cooperating series of interlocking members arranged in staggered relation along said opposed surfaces, said members having gear tooth-like shapes with flat bases disposed against said backing member surfaces, and sticking material forming a bond between said flat bases and said surfaces of said flexible backings, said backing members between said interlocking members being flexible.

10 2. A separable fastener comprising cooperating series of projections arranged in uniformly spaced relation, said projections being formed by a flexible tape folded to provide a series of uniformly spaced heads with recesses between the heads, and relatively stiffer means for holding said tape in folded position.

15 3. A separable fastener of the class described, comprising strips having cooperating series of projections thereon, each formed with a head and a narrower neck, the outer surfaces of said projections being covered with fabric and the body portions thereof being composed of a filling material.

25 4. A separable fastener of the class described comprising a pair of opposed fastener strips having cooperating projections and recesses adapted to interlock with each other, the coating surfaces of said projections and recesses being provided with an outer covering of fabric.

30 5. A separable fastener of the class described comprising cooperating series of fastener elements consisting of heads of plastic material, the heads of one series being spaced apart to provide recesses for receiving the heads on the opposite series, said plastic material being cov-

ered on the interengaging faces with a strip of flexible material secured thereto, and a second strip of flexible material disposed against the bases of each series of heads to provide a surface for a slider and sticking material forming a bond between said heads and their bases and said last mentioned strips, and a slider mounted on said series of members for engaging and disengaging the same.

6. A separable fastener of the class described 10 comprising a pair of flexible strips arranged in parallel relation, cooperating series of interlocking members projecting from adjacent surfaces of each strip toward the opposite strip, said projections having heads and relatively narrower 15 necks and spaced apart to form recesses of corresponding shape whereby the projections and recesses of one series may intermesh and interlock with the recesses and projections of the opposite series, said projecting heads being formed 20 of a relatively more rigid material than said strips, and means for securing said projecting members to said strips, and mounting tapes secured to the surfaces of said strips opposite said heads and between the side edges of said strips. 25

7. A separable fastener as defined in claim 2 wherein the means for holding the tapes in the desired folded position comprises rigid plastic material filling the spaces between the folds.

8. A separable fastener as defined in claim 2 30 wherein said means for holding the tapes in folded position comprises a cord disposed in each of the folds, and plastic material filling the remaining portion of the spaces between the folds.

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