March 26, 1940. W. I. JONES 2,194,855

SNAP FASTENER STUD MEMBER

Filed April 16, 1938

Fig. 1

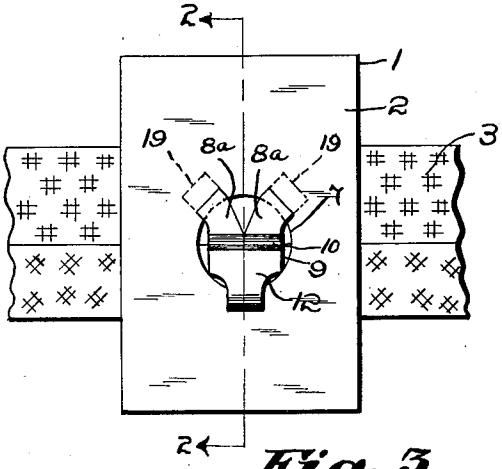


Fig. 2

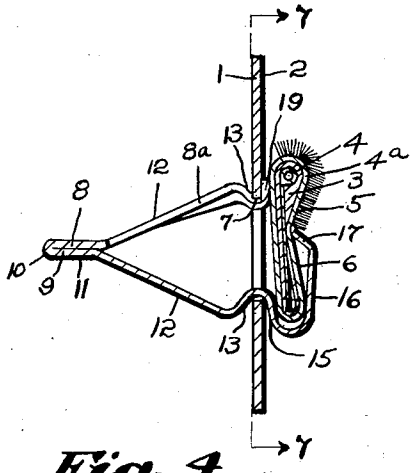


Fig. 3

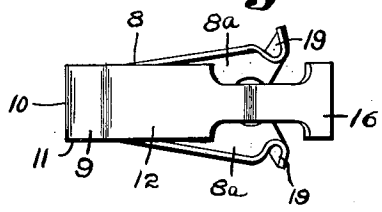


Fig. 4

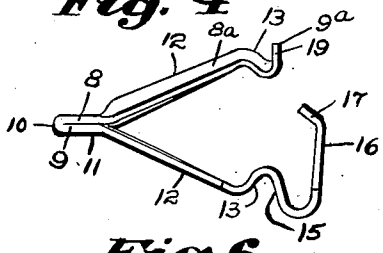


Fig. 5

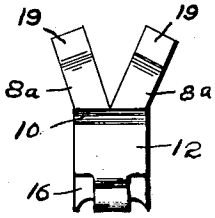


Fig. 6

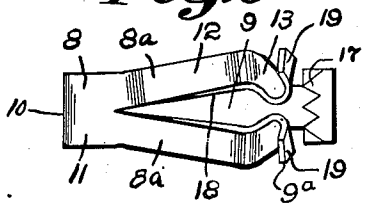


Fig. 8

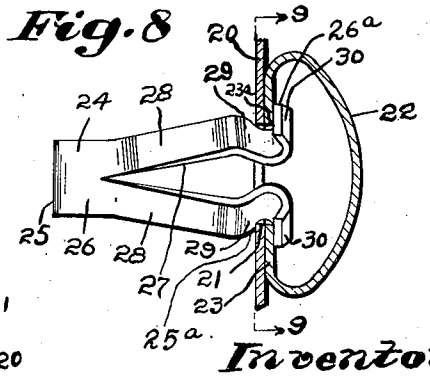


Fig. 7

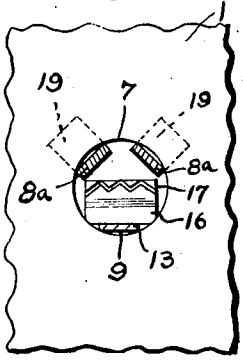
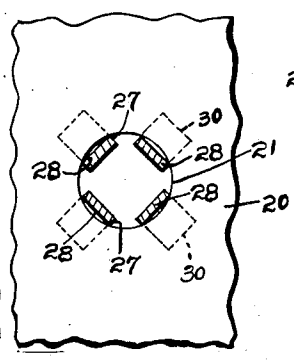


Fig. 9



Inventor:

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SNAP FASTENER STUD MEMBER

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Application April 16, 1938, Serial No. 202,497

11 Claims. (Cl. 24—73)

This invention relates to an improved snap fastener member for securing a window strip molding or other suitable structure to a support.

An object of my invention is the provision of a snap fastener member of simple and inexpensive construction formed in a way to have improved fastener engagement with a supporting part through an aperture thereof.

Other objects and uses of my invention will be apparent from inspection of the drawing and specification hereinbelow set forth.

Referring to the drawing, in which I have illustrated preferred embodiments of my invention:

Fig. 1 is a top view of an installation showing a portion of a window channel support and a window guide strip secured to the support by means of my first form of fastener member;

Fig. 2 is a section taken along the line 2—2 of Fig. 1;

Fig. 3 is a rear view of my improved fastener member per se;

Fig. 4 is a side view of my fastener member shown in Fig. 3;

Fig. 5 is a top view of my improved fastener member per se;

Fig. 6 is a front view of my improved fastener member per se;

Fig. 7 is a section taken along the line 7—7 of Fig. 2;

Fig. 8 is a sectional view showing a molding strip secured to a support by means of a modified form of my improved fastener member; and

Fig. 9 is a section taken along the line 9—9 of Fig. 8.

Referring to Figs. 1 and 2, which illustrate the preferred use of my first form of fastener member, I have shown a fragment of a window channel frame in the form of a supporting structure 1 providing an inner face 2 which bounds one side of the channel through which a window pane (not shown) is moved during the raising and lowering of the same. A flexible strip 3 is attached to the support 1 in position so as to seal in an effective manner the face 2 of the support and the window pane, as will be understood by those skilled in the art. The strip which I have chosen to employ in my preferred installation is of substantially elongated cross-section having a metal stiffening core 4 and an outer covering 4^a of sturdy material. A nap means 5 is provided along one edge of the strip on the side facing away from the face 2 of the support 1. A portion 6 of the strip adjacent the opposite edge thereof from that along which the nap 5 is disposed (Fig. 2) is adapted to be gripped by a hook-like element of my fastener member so as to secure the strip to the support 1, as will be hereinafter described. The strip is attached to the support 1 by means of my improved fastener members, each of which has a shank portion of improved construction extending through a circular aperture 7 in the support and firmly engaging the material of the frame surrounding the aperture, as most clearly shown in Fig. 2.

Referring in detail to my first form of fastener member per se, I have illustrated in Figs. 1–7 a snap fastener stud member made of one piece of sheet metal comprising a resilient shank portion for securing the fastener to a support and a hook-like means for engagement with the channel strip so as to clamp firmly the strip to the support. In the preferred form my fastener member comprises a pair of side portions 8 and 9 connected at their leading ends 10. Portions of the side portions 8 and 9 adjacent the leading ends 10 are disposed with opposed broad surfaces in pressed adjacent relation forming a nose 11. The side portions 8 and 9 have portions 12—12 diverging from the nose 11 and converging portions 13—13 forming shoulders. The side portion 8 has an attaching means in the form of a laterally extending portion 9^a at its end away from the nose 11 for engaging the surface 2 of the support 1. The side portion 9 has a laterally extending portion 15 integral with an end of the converging portion 13 (Figs. 2 and 4) for engagement with the surface 2 of the support 1 and a hook-like element 16 forming a continuation of the laterally extending portion 15 for engagement with the portion 6 of the channel strip 4. The hook-like element 16 preferably has teeth 17 at its outermost free edge for biting engagement with the channel strip. It will be noticed that the converging portion 13 of the side portion 9, in my preferred form, is of less width than the diverging portion 12 whereby its relative narrowness enables the shoulder of the side portion to engage behind the support to a greater depth, as will be understood by those skilled in the art. The side portion 8 has a slit 18 extending from the outermost end of the laterally extending portion 9^a through the shoulder a predetermined distance toward the nose 11 thereby dividing a portion of the side portion into a pair of narrow leg portions 8^a—8^a (Fig. 6), each of which has a shoulder and a laterally extending portion 19. In order that the legs 8^a—8^a may effect a firm engagement with material of the support 1 surrounding the aperture 7, I have preferred to twist them outwardly at substan-

tially their junction with the side portion. As a result of this construction, the legs have spaced inner edges with the planes of the broad surfaces of portions of the legs extending in angular relation, as most clearly shown in Fig. 7. Thus, by being twisted, the legs 8a—8a form separate relatively small arcs with the wall of the aperture 7, as most clearly shown in Fig. 7, so that their respective shoulders are securely engaged behind the support adjacent the aperture, as will be understood by those skilled in the art. Furthermore, my improved fastener is more flexible and more adaptable to certain uses than fasteners of sheet metal formed with two relatively wide legs.

Assembly of the component parts of the installation, with which I have chosen to illustrate the use of my first form of fastener member, is a relatively simple matter and is carried out through inserting the shank of the fastener member through the aperture 7 of the support whereby the shoulders of the narrow legs 8a—8a and the shoulder of the side portion 9 engage behind the support and cooperate to secure the fastener member securely to the support. The movement of the fastener member through the aperture in the direction of its insertion is limited by the laterally extending portions 19—19 of the narrow legs 8a—8a and the laterally extending portion 15 of the side portion 9. Finally, the strip 4 is moved beneath the hook-like element 16 whereby the teeth 17 of the hook-like element bite into the material of the channel strip so as to hold it firmly in position.

My second form of fastener member, illustrated in Figs. 8 and 9, is similar to my first form but includes certain modifications enabling it to be used for securing a molding strip or the like part to a support. Referring to the installation with which I have chosen to illustrate my second form of fastener, I have shown a support 20 having a circular aperture 21 and a molding strip 22 secured to the support 20 through means of my second form of fastener. The molding strip 22 is preferably of the type having opposed open ends and a side wall 23 adapted to be supported by the supporting structure and having an elongated aperture 23a running the entire length thereof (Fig. 8).

Referring to my second form of fastener member per se, I have shown a fastener having a pair of side portions 24—24 connected at their leading ends 25. The side portions are preferably pressed together adjacent their leading ends 25 forming a nose 26 which is similar in form to the nose 11 of my first form of fastener member. The side portions diverge from the nose 26 and then converge forming shoulders 25a and the ends of the side portions away from their leading ends have outwardly-extending portions 26a for engagement with the inner surface of the side wall 23 of the molding. Each of the side walls 24—24 has a slot 27 extending from the outermost end of the respective laterally extending portion 26a into the diverging portion of the side portion dividing a portion of each of the side portions 24 into a pair of narrow leg portions 28—28 in the same manner in which the side portion 8 of my first form of fastener is divided by the slot 18 into the legs 8a—8a. Each of the legs 28—28 has a shoulder 29 adapted to engage behind the support 20 and a laterally extending portion 30 bearing upon the inner surface of the wall 23 of the molding. The legs 28—28 of each of the pairs are preferably twisted outwardly near their junction with the respective side portion 24 so that the broad planes of portions of the legs of each of the respective pairs extend in angular relation, as most clearly shown in Fig. 9.

In assembling my second form of fastener member with the molding, the laterally extending portions 30 are extended into one of the open ends of the molding and moved longitudinally of the molding to a predetermined position opposite one of the apertures of the support 20. Next, the shank of the fastener which extends through the elongated opening 23a of the molding is snapped through the aperture 21 of the support to dispose the shoulders 29 of the four legs 28 behind the support, as shown in Fig. 8. Thus the four shoulders 29 of the legs cooperate with the laterally extending portions 30 to draw the molding firmly against the support.

Thus by my invention I have provided a fastener of simple construction having a support-engaging shank portion formed in a way to insure firm engagement with the support.

Although I have illustrated and described preferred embodiments of my invention, I do not wish to be limited thereby because the scope of my invention is best defined in the following claims.

I claim:

1. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders for engagement with a support through an aperture thereof, said side portions having attaching means at their outer ends and one of said side portions having a slit therein dividing a portion of said side portion into a pair of shouldered narrow portions adapted to cooperate with the other of said side portions for fastener engagement with said support.

2. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders for engagement with a support through an aperture thereof, said side portions having attaching means at their ends and one of said side portions having a slit therein dividing a portion of said side portion into a pair of narrow portions with each of said narrow portions having a shoulder and an attaching means, said narrow portions being twisted outwardly adjacent their junction with said side portion whereby the planes of the broad surfaces of portions of said narrow portions extend in angular relation one to another.

3. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders for engagement with a support through an aperture thereof, said side portions having attaching means at their outer ends, one of said side portions having a slit therein extending from its outer end a predetermined distance toward said connected end dividing a portion of said side portion into a pair of shouldered narrow legs, said legs being twisted outwardly near their junction with said side portion whereby the planes of the broad surfaces of portions of said narrow legs extend in angular relation one to another.

4. A snap fastener member comprising a strip of metal having a pair of side portions connected

at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders for engagement with a support through an aperture thereof, one of said side portions having a laterally extending means at its end opposed to said connected end, said side portion having a slit therein extending from the outermost end of said laterally extending means a predetermined distance toward said connected end dividing a portion of said side portion into a pair of narrow legs with each of said legs having a shoulder and a laterally extending portion, at least one of said legs being twisted outwardly near their junction with said side portion whereby the planes of the broad surfaces of portions of said legs extend in angular relation one to another.

5. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders for engagement with a support through an aperture thereof, one of said side portions having attaching means at its outer end for engaging a part to be secured to a support and the other of said side portions having a slit therein dividing a portion of said last-mentioned side portion into a pair of shouldered narrow portions.

6. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders for engagement with a support through an aperture thereof, one of said side portions having a laterally extending means at its end opposed to said connected end for engagement with said support, said side portion having a slit therein extending from the outermost end of said laterally extending means a predetermined distance toward said connected end dividing a portion of said side portion into a pair of narrow legs, each of said legs having a shoulder and a laterally extending portion and the other of said side portions having attaching means at its end opposed to its connected end for engaging a part to be secured to said support.

7. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging adjacent their connected ends and then converging providing shoulders for engagement with a support through an aperture thereof, the converging portion of one of said side portions being of less width than the diverging portion thereof, said side portion having attaching means at its end opposed to said connected end for engaging a part to be secured to said support and the other of said side portions having a laterally extending means at its end opposed to said connected end for engagement with said support, said last-mentioned side portion having a slit therein dividing a portion of said side portion into a pair of shouldered narrow portions.

8. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders for engagement with a support through an aperture thereof, one of said side portions having a laterally extending means at its end opposed to said connected end for engagement with said support, said side portion having a slit therein extending from the outermost end of said laterally extending means a predetermined distance toward said connecting end dividing a portion of said side portion into a pair of narrow legs with each of said legs having a shoulder and a laterally extending portion at its end, at least one of said legs being twisted outwardly near their junction with said side portions of said legs whereby the planes of the broad surfaces of portions of said legs extend in angular relation one to another and the other of said side portions having attaching means at its end opposed to its connected end for engaging a part to be secured to said support.

9. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders, said side portions having laterally extending means at their outer ends, each of said side portions having a slit therein extending from the outermost end of said laterally extending means a predetermined distance toward said respective connected end dividing a portion of each of said side portions into a pair of narrow legs with each of said legs having a shoulder for engagement with a support through an aperture thereof and a laterally extending means for engaging a part to be secured to said support.

10. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, said side portions normally diverging from adjacent said connected ends and then converging providing shoulders, said side portions having laterally extending means at their outer ends, each of said side portions having a slit therein extending from the outermost end of said laterally extending means a predetermined distance toward said respective connected end dividing a portion of each of said side portions into a pair of narrow legs with each of said legs having a shoulder for engagement with a support through an aperture thereof, the leg portions of each of said pairs being twisted outwardly near their junction with said respective side portion whereby the planes of the broad surfaces of portions of said narrow legs of each of said pairs extend in angular relation one to another.

11. A snap fastener member comprising a strip of metal having a pair of side portions connected at their leading ends, a nose comprising portions of said side portions at said connected end in pressed-together relation, said side portions diverging from said nose and then converging providing shoulders for engagement with a support through an aperture thereof and said side portions having laterally extending means at their ends opposed to said connected ends, and at least one of said side portions having a slit therein dividing a portion of said side portion into a pair of shouldered narrow portions.

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