Oct. 20, 1936. W. I. JONES 2,058,320

SEPARABLE SNAP FASTENER STUD

Original Filed March 20, 1933

Fig. 1.

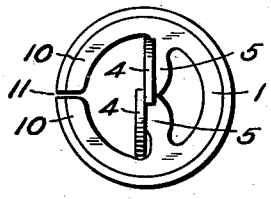


Fig. 2.

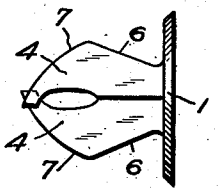


Fig. 3.

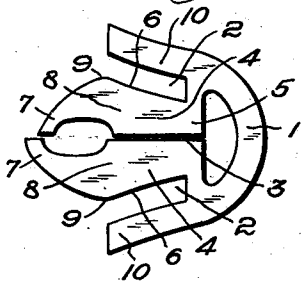


Fig. 4.

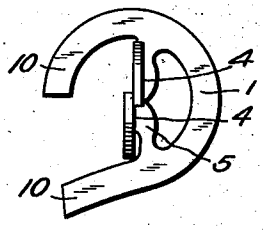


Fig. 5.

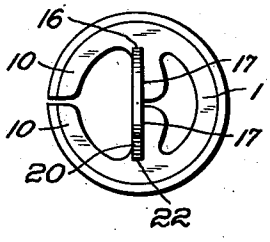


Fig. 6.

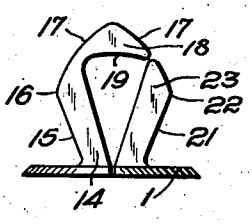
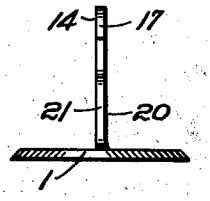


Fig. 7.



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SEPARABLE SNAP FASTENER STUD

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Original application March 20, 1933, Serial No. 663,513. Divided and this application December 12, 1933, Serial No. 702,012

3 Claims. (Cl. 24—213)

My invention aims to provide improvements in separable snap fastener studs.

This application is a divisional of my co-pending application Serial No. 663,513, filed March 30, 1933, which has matured to Patent 1,963,853, granted June 19, 1934.

In the drawing, which illustrates preferred embodiments of my invention:

Figure 1 is a plan view of one of my improved stud members;

Fig. 2 is a side elevation of the device shown in Fig. 1;

Fig. 3 is a plan view of the stud blank as it appears when cut from flat metal stock and before the socket-engaging members of the base portions are bent into proper relation;

Fig. 4 is a plan view of my improved stud member partially formed;

Fig. 5 is a plan view of a modified form of my improved stud member;

Fig. 6 is a side elevation of the stud member shown in Fig. 5; and

Fig. 7 is an edge view of the stud shown in Figs. 5 and 6.

Referring to the particular embodiment of my invention illustrated by the drawing, I have shown a sheet metal snap fastener stud member cut from a flat strip of metal and having means, which engage a cooperating socket member, bent up into position from a flat blank shown in Figs. 3 and 4 and portions of the blank bent toward each other to form a circular base with a substantially continuous periphery, as shown in Figure 1. This type of stud is very inexpensive to manufacture and is very suitable for use with upholstery installations because it has the advantage of a substantially continuous ring-like base, which is adapted to be easily inserted and manipulated into engagement with upholstery or paneling and requires only three bending operations to complete it.

Briefly, the method of forming my improved stud member is to blank the skeleton of the stud member from flat metal stock (Fig. 3), the said skeleton having a plurality of slits extending from one side thereof, thereafter to bend the inner portions of the blank defined by said slits to a substantially right angle to the plane of the blank to form the socket-engaging portions and then to bend outer portions in the plane of the blank to form a ring-like base in the form of a narrow bend having a substantially continuous periphery.

The stud member illustrated has a base portion 1 having slits 2, 2 and 3 to define the socket-engaging portions 4, 4 and arms 5, 5. These arms 5, 5 connect the socket-engaging portions 4, 4 with the inner periphery of the base portion 1, as shown in Figs. 1 and 3. After the blank has been cut from the metal strip, the projections or socket-engaging portions 4—4 are bent upwardly (as shown in Fig. 4) to a substantially right angle with the plane of the base portion 1. The projections 4, 4 are located in different planes so they may overlap (Figs. 1, 2 and 4) and the outer edges 6, 6 are so arranged that they cooperate to provide a stud head portion 7 and a neck portion 8. The edges 6, 6 diverge from the plane of the base to the shoulders 9, 9 and then converge. The converging head portion 7 is easily guided into an aperture and the diverging or neck portion 8 readily adjusts itself to various thicknesses of metal when entered through an aperture because of the length of the neck.

The final operation in the manufacture of the stud member is to bend the portions 10, 10 toward each other, as shown partly in Fig. 4 and in the completed member, they being separated only by a narrow slit 11 which may add flexibility to the base. The completed stud member has to all intents and purposes a continuous metal periphery which is one important feature of my invention.

It should be noted that the projections 4, 4 are rigid throughout the length of each as far as any tendency to bend toward or away from each other is concerned. However, when it is desired to engage the stud member with a wall of a stud-receiving aperture of fixed dimensions, the portions 4, 4, are permitted to have a scissors-like action, both being adapted to move toward each other, thereby reducing sufficiently the distance between the shoulders 9, 9 to allow the projections to enter a socket or stud-receiving aperture, whereupon the projections spring outwardly and the edges 6, 6, pressing against the walls of the adjacent aperture, hold the stud firmly in position with respect to said aperture. The yieldable projections (moving in the above-described scissors-like motion, thereby to make engagement with a cooperating fastener socket) are adapted to do so by the resiliency of the base portion 1 and the arms 5, 5. The shape and arrangement of the arm portions 5, 5 may vary widely according to the size and shape of the base, but the arrangement illustrated is particularly satisfactory because the flexing of the base is not concentrated in any one spot but is so distributed as to prevent setting of the projections 4, 4 when squeezed together.

A modified form of a stud member is shown in Fig. 5. The principle is the same as in the fastener just described, but the yieldable projections, instead of being arranged as described, are set substantially in alignment, the yieldable projections being shaped to move toward and away from each other in the same plane.

The side elevation of Fig. 5 illustrates a projection 14 having an outer edge 15 extending upwardly and outwardly to a shoulder 16 and a continuation of the said edge (indicated at 17) extending upwardly and inwardly and thereafter downwardly and outwardly to form the outer edge of the head 18. The projection 14 has an inner edge 19 cut away, thereby to permit the other projection 20 to move toward and nest with the projection 14 during fastening engagement with a cooperating fastener socket. The projection 20 has an outer edge 21 which extends upwardly and outwardly to the shoulder 22 and a continuation of the said edge (indicated at 23) extending upwardly and inwardly so that the outer edges of the two projections form a substantially continuous surface on the head portions whereby the stud may easily be inserted into a socket without catching.

The result of my invention is a strong, durable stud member which has a relatively stiff spring action adapted to hold the part to which the stud is attached, for example, upholstery, paneling, etc., and also has a circular base with a substantially continuous metal periphery which allows easy insertion beneath the above-mentioned upholstery or paneling.

I am aware that stud members cut and bent from sheet metal are old in a broad sense; however, I do not know of any prior stud which is formed similar to my improved studs or which has the same action or arrangement of the elements thereof.

While I have shown and described preferred embodiments of my invention, it will be understood that I do not wish to be limited thereto, the scope of my invention being best defined by the following claims.

I claim:

1. A snap fastener stud formed entirely of sheet metal and having a base in the form of a narrow band surrounding an opening in said base and having spaced-apart ends whereby said band is divided at one side of the base, a pair of arms extending into said base opening from opposite sides of said band and connected therewith at points remote from the ends of said band, and socket-engaging projections extending away from said arms in a direction upwardly from the plane of said base, said projections having outer edges shaped to cooperate with each other for snap fastening engagement with cooperating socket means.

2. A snap fastener stud formed entirely of sheet metal and having a base in the form of a narrow band surrounding an opening in said base and having spaced-apart ends whereby said band is divided at one side of the base, a pair of arms extending into said base opening directly toward each other from opposite sides of said band and connected therewith at points remote from the ends of said band, and socket-engaging projections connected to the sides of and extending away from said arms in a direction upwardly from the plane of said base, said projections having outer edges shaped to cooperate with each other for snap fastening engagement with cooperating socket means.

3. A snap fastener stud formed from sheet metal and having a substantially continuous ring-like base surrounding an opening and being divided only by a narrow slit, said base having an outer and an inner periphery, a pair of arms extending directly toward each other from the inner periphery of said base, said arms being connected to said base only at points remote from the narrow slit in said base and being located approximately in the center of the opening surrounded by said base and a flat socket-engaging projection extending from each arm adjacent to the free end thereof, and said projections being movable toward and away from each other edgewisely, said projections having outer edges shaped and arranged to make snap fastening engagement with cooperating socket means.

WALTER I. JONES.