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R. F. WALTERS

1,760,262

SEPARABLE FASTENER

Original Filed July 24, 1924

Fig. 1.

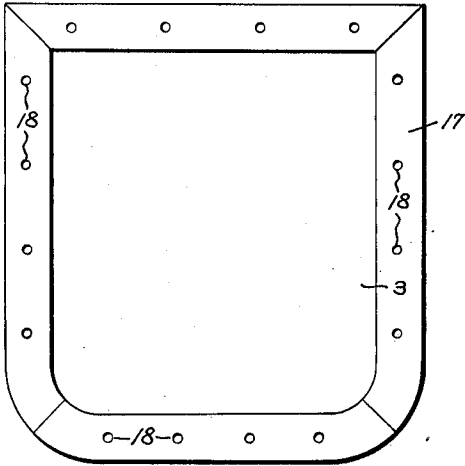


Fig. 2.

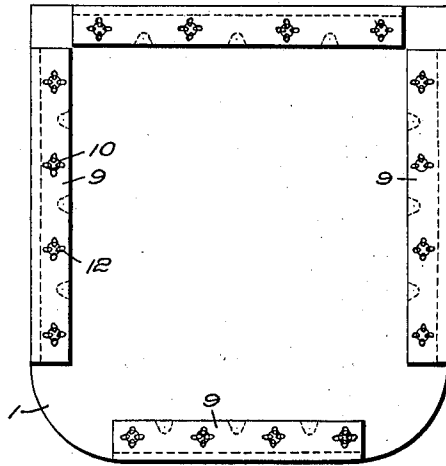


Fig. 3.

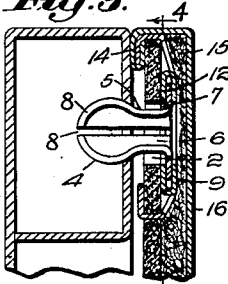


Fig. 4.

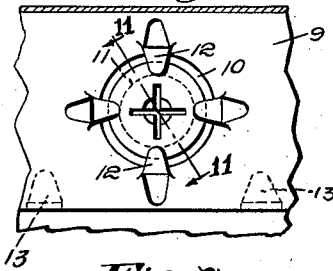


Fig. 5.

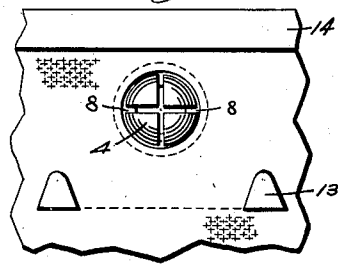


Fig. 6.

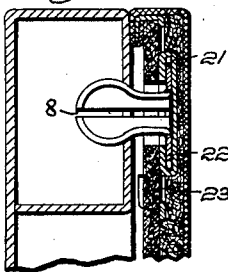


Fig. 7.

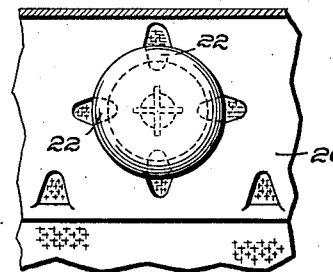


Fig. 8.

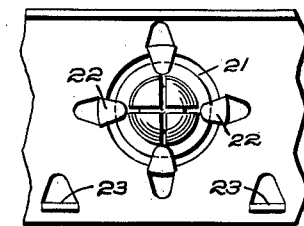


Fig. 11.

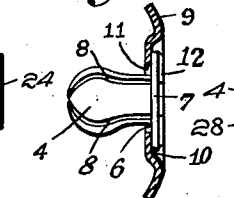
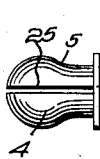
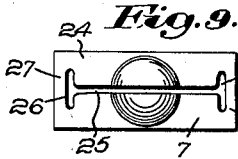
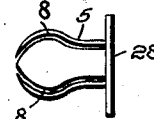


Fig. 10.



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UNITED STATES PATENT OFFICE

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SEPARABLE FASTENER

Original application filed July 24, 1924, Serial No. 727,959. Divided and this application filed February 26, 1925. Serial No. 11,705.

This invention aims to provide improvements in separable fastening elements.

The application is a division of my prior application, Serial No. 727,959, filed July 24, 1924.

In the drawings, which illustrate a preferred embodiment of my invention, a modified form of fastener strip and two modified forms of studs:—

Figure 1 is an elevation view of an automobile door showing the upholstered part removed therefrom;

Fig. 2 is an elevation view of the backing of the upholstered part, showing the stud strips secured thereto;

Fig. 3 is a transverse section of a portion of the door, showing the upholstery secured thereto;

Fig. 4 is a section on the line 4—4 of Fig. 3, showing a fragmentary view of one of the stud-carrying strips in side elevation as secured to the backing and before the covering material is applied;

Fig. 5 is a fragmentary view of the upholstered part, showing one of the studs and a portion of the stud-carrying strip as viewed from the inside face thereof;

Fig. 6 is a section similar to Fig. 3, but showing a modified form of stud-carrying strip secured to the upholstered backing;

Fig. 7 is an elevation view of a portion of the modified form of fastener strip;

Fig. 8 is an elevation view of the strip as shown in Fig. 6, but viewing the strip from the opposite side;

Fig. 9 is a front and a side elevation, respectively, of a modified form of stud for use with a stud-carrying strip;

Fig. 10 is a front and a side elevation, respectively, of a second form of stud; and

Fig. 11 is a section taken on the line 11—11 of Fig. 4 to illustrate the depression in the strip in which the base of a stud is located.

Referring to the drawings, I have shown, for illustration only, an automobile door pressed from a single sheet of metal to which may be secured an upholstered part for providing a finished appearance to the inside of the door. I have found that the fastener elements on the door frame and upon the up-

holstered part do not always align with each other, because of slight defects in manufacture of the door and of the upholstered part when these parts are manufactured in large quantities. To remedy this defect, I have provided shiftable fastener elements which may be located upon either the frame or the upholstered part and the cooperating fastener elements may remain fixed relative to the part to which they are secured.

By using this method of shiftable fastener elements, the upholstered part may be quickly secured to the frame and any of the fastener elements may be aligned with each other by shifting the movable fastener element relative to the fastener part to which it is to be secured.

As illustrated in Fig. 2, the shiftable fastener elements may be first secured to a strip of metal or the like, so that attachment thereof to the backing is a simple and speedy operation.

Referring now to that form of my invention illustrated in Figs. 1 through 5, I have shown an upholstered part which includes a backing 1 (Figs. 2 and 3) having a plurality of apertures 2 punched therethrough to permit passage of the studs, for securing the upholstered part to the door 3 of the automobile.

These studs are pressed from a single sheet of metal and each is provided with a head 4, neck 5, shank 6, relatively thin flat base 7 and slots 8. The slots extend from the head to the base to permit contraction and expansion of the head. The studs, as illustrated in Figs. 2 and 3, are applied to the backing 1 in strips 9 having any desired number of studs secured thereto.

Each strip for holding the studs comprises a somewhat arched single sheet of metal having a plurality of depressions 10 of substantially larger cross section than the base 7 of each stud, an aperture 11 in each depression and a plurality of prongs 12 struck up from the strips 9 adjacent the periphery of the depressions 10.

When the studs are assembled with the strip 9, the base 7 of each stud fits into the depression and the rest of the stud protrudes

through the aperture 11. The prongs 12 are then bent inwardly and downwardly over the depression to prevent the studs from falling out of the strip while permitting free transverse movement of the studs relative to the strip.

The strips are secured to the backing by a plurality of prongs 13 projecting from the inner edge of the strip, and these prongs pass through the backing 1 and are clenched against the opposite face thereof. At the same time, a flange portion 14 at the outer edge of the strip 9 is clenched over the edge of the backing and left extending over the edge of the back face until the covering is applied to the installation. Thus the studs extend through the apertures 2 in the backing and, because the shanks 6 thereof are substantially smaller in cross-section than the apertures 2, they are free to be shifted transversely in any direction relative to the backing.

After the strips 9 are secured to the backing 1, a padding 15 of cotton, or the like, is placed over the surface of the backing at that side thereof where the strips 9 are exposed, thus providing a smooth surface over which is stretched a flexible covering 16 of cloth, leather or the like (Fig. 3). The edges of the covering 16 are wrapped over the upstanding portions 14 of the strips 9, which are thereafter clenched against the surface of the backing, thus clenching the covering 16 against the backing 1, as best illustrated in Fig. 3.

The door 3, as illustrated, is formed from a single sheet of metal and has a frame portion 17 adjacent the periphery thereof (Fig. 1) at the inside face of the door. This frame presents a plurality of stud-receiving apertures 18, which are formed by punching or drilling holes in the door blank before the frame part thereof is formed.

To secure the upholstered part of the installation to the door, the upholstered part is placed against the frame of the door and the heads 4 of the studs are pressed into their cooperating stud-receiving apertures 18, as illustrated in Fig. 2. If, for reasons of defect in making the dies for punching the apertures 18 in the frame portion 17 or the strips 9 are slightly out of line, the heads of the studs do not enter the apertures 18 in the frame, a suitable tool, hook-shaped at one end, may be inserted between the door and upholstery and the stud or studs may be shifted until they can be pressed into engagement with their cooperating apertures. Thus, the upholstery may be applied to the door without straining the studs and it may be attached thereto so that its edges "line up" with the edges of the door.

When the studs are engaged with the apertures in the frame portion 17, the edges of

the upholstery are seated and held tightly against the frame adjacent the outer periphery of the door, as best illustrated in Fig. 3.

Referring now to Figs. 6, 7 and 8, I have shown, as illustrated, a modified form of strip 20 for securing the studs to the backing 1. In this form of strip, the pockets or depressions 21 are pressed into the strip in the opposite direction from the depressions 10 shown in connection with the preferred form of my invention. The prongs 22 are pressed from the strip in substantially the same manner as described in connection with the preferred form of my invention and in this instance are bent against that side of the base 7 of the stud which lies adjacent the backing when the strip is secured thereto.

In the modified form of my invention, as illustrated, the prongs 23 for securing the inner edge of the strip 20 to the backing 1 are pressed from the strip itself and are located a slight distance inwardly from the edge thereof.

The door and the upholstery which is attached to the door and the method of attaching the strips 20 to the backing 1 are substantially as shown and described in the preferred form of my invention.

Referring to Fig. 9, I have shown a modified form of stud for use in connection with strips substantially as shown and described in the preferred and modified form of my invention. The stud is provided with a relatively narrow rectangular base portion 24 presenting a head, neck and shank portion substantially as shown in the stud used in connection with the preferred form of my invention. In this instance, however, I have provided one slot 25 only, which extends a considerable distance into the base portion 24. At each end of the slot 25 in the base portion 24, I have provided relatively short slots 26, 26, thereby to permit the head of the stud to contract and expand when engaging the stud-receiving aperture in the frame of the door. Most of the bending strain exerted upon the stud when it is contracted, occurs at those portions 27 of the base of the stud between the ends of the short slots 26, 26 and the outer ends of the base, as illustrated.

By using this type of stud, a somewhat narrower stud-holding strip may be used for securing the studs to the backing 1.

Referring now to Fig. 10 and to the second modified form of stud for use with stud-holding strips, I have shown a stud substantially as shown and described in connection with the preferred form of my invention. The stud, however, is provided with a rectangular base 28, the diameter of which is somewhat smaller than the diameter of the round base of the preferred form of stud, thus permitting the use of a somewhat narrower stud-holding strip than shown in connection with the preferred and modified form of my invention.

In this instance, the slots which permit contraction and expansion of the head of the stud are cut diagonally relative to the base of the stud, thus permitting the use of the somewhat smaller base, as illustrated.

While I have shown and described preferred and modified forms of embodiments of my invention, it will be understood that changes involving omission, substitution, alteration and reversal of parts, and even changes in the mode of operation, may be made without departing from the scope of my invention, which is best defined in the following claims.

Claims:

1. A fastener strip for securing upholstery to a frame which comprises a single sheet of metal having a plurality of depressions formed therein, means providing an aperture through the bottom of each of said depressions, a plurality of studs associated with said strip and each having a base of smaller diameter than the diameter of the depression into which it is assembled thereby being free to shift laterally and said studs each presenting a head, a neck and a shank through an aperture in a depression, the shank portions being of substantially smaller cross-sectional area than the apertures through which they pass thereby permitting free movement of each of the studs in any lateral direction relative to said fastener strip.

2. A fastener strip for securing upholstery to a frame which comprises a single sheet of metal having a plurality of depressions formed therein, a plurality of studs associated with said strip and each having a base located in a depression, means securing the studs in assembly with said strip, said stud bases being smaller in diameter than the diameters of said depressions thereby permitting lateral shifting movement of said studs in any direction relative to said strip.

3. In a fastener installation, a strip of sheet material for securing upholstery to a frame, a plurality of socket-engaging studs assembled with said strip and having heads presented through apertures in said strip, and means provided partly by the strip and partly by each stud for securing said studs to said strip, the said means and the said apertures in the strip being arranged and proportioned to permit relatively free lateral movement of said studs in any direction relative to said strip.

4. A fastener strip for securing upholstery to a frame which comprises a strip of sheet metal, a plurality of socket-engaging studs presented through apertures in said strip, means for securing said studs to said strip to prevent substantial axial movement of said studs relative to said strip while permitting relatively free lateral movement of said studs in any direction relative to said strip, and attaching means presented by the strip for

securing said fastener strip to the backing of an upholstery installation.

5. A fastener strip comprising, in combination, a relatively narrow strip of sheet metal having a plurality of fastener units held in assembled relation therewith, said fastener units shiftable in any lateral direction relative to said strip.

6. A fastener strip comprising, in combination, a relatively narrow strip of sheet metal having a plurality of fastener units held in assembled relation therewith, said fastener units shiftable in any lateral direction relative to said strip, and means presented by said strip for securing it to a suitable support.

7. A fastener strip pressed from a single piece of metal and having means pressed therefrom for holding a plurality of studs in assembly therewith, said means permitting limited lateral shifting of the studs in any direction relative to the strip.

8. A fastener strip having a plurality of depressions therein, a plurality of stud members having their base portions located in said depressions, means formed from said strip for holding said studs in assembled relation therewith while permitting shifting of said studs in any lateral direction relative to said strip.

9. A fastener strip having a plurality of depressions therein, a plurality of stud members having their base portions located in said depressions, means formed from said strip for holding said studs in assembled relation with said strip while permitting shifting of said studs in any lateral direction relative to said strip, and attaching means formed from said strip for securing the strip and studs to a support.

In testimony whereof, I have signed my name to this specification.

ROLLO F. WALTERS.