March 22, 1932. R. MITCHELL 1,850,119

FASTENER

Filed Nov. 16, 1927

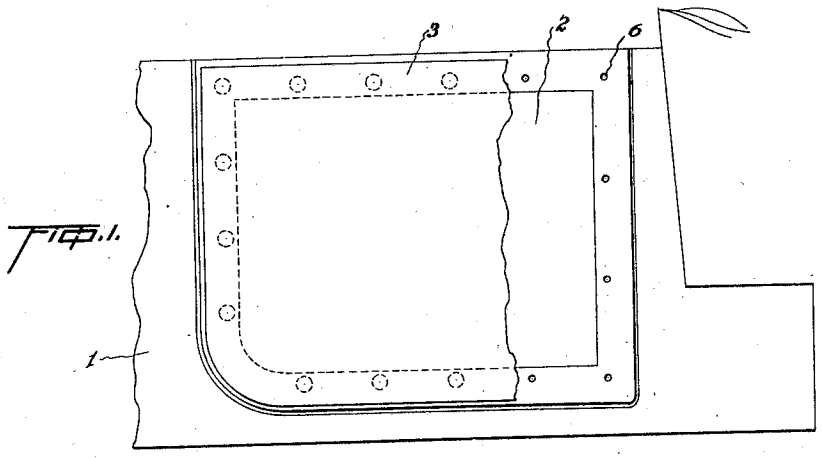

FIG. 1.

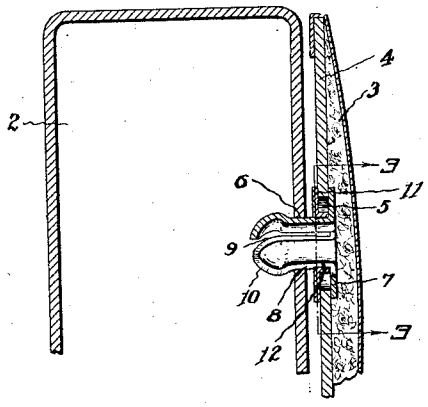

FIG. 2.

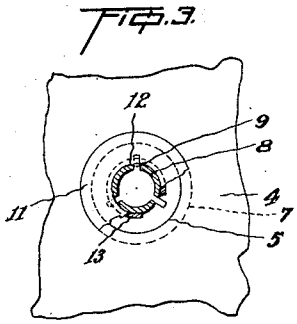

FIG. 3.

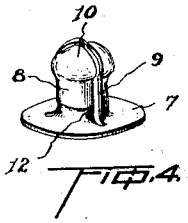

FIG. 4.

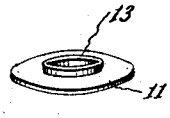

FIG. 5.

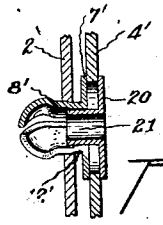

FIG. 6.

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UNITED STATES PATENT OFFICE

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FASTENER

Application filed November 16, 1927. Serial No. 233,609.

The present invention pertains to a novel fastener designed particularly for attaching upholstery pads to automobile bodies.

In work of this character, the fastening elements are carried by the pads and are receivable in apertures formed in the framework of the body. In order to avoid the necessity of accurate alignment between the fastening elements and the respective apertures, it has been found desirable to support the fastening elements in a floating manner on the upholstery pads, so that the fastening elements may be properly aligned with the apertures after the parts have been assembled and the apertures drilled.

The present invention pertains to a fastener having a novel means of attachment and floating support on the pad. The device consists essentially of a neck passing loosely through an opening in the supporting baseboard and having a base flange adapted to engage one of the surfaces of this board. A retaining ring is slidably mounted on the neck for engagement with the other surface of the board, and the neck is further formed with a depression into which the ring may be snapped and thus maintained at a given maximum distance from the base flange, so that longitudinal shifting of the neck in the opening is prevented.

The invention is fully disclosed by way of example in the following description and in the accompanying drawings, in which—

Figure 1 is a fragmentary elevation of the inner wall of an automobile body;

Fig. 2 is a transverse section thereof, showing the manner of supporting a pad on the framework of the body;

Fig. 3 is a section on the line 3—3 of Figure 2;

Fig. 4 is a perspective view of the fastener element;

Fig. 5 is a perspective view of the retaining ring; and

Fig. 6 is a sectional view of a modified form.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

In Figure 1 is illustrated a fragment 1 of an automobile body including a door 2 to the inner surface of which is to be attached an upholstery pad 3. The baseboard 4 of the pad has a series of apertures 5, and the adjacent face of the framework member 2 has smaller apertures 6 substantially in registration with the first named apertures.

Each of the larger apertures 5 contains a fastener element comprising a base 7 engaging the inner surface of the board 4 and a neck 8 extending from the base through the aperture. The neck fits loosely in the aperture, as clearly illustrated in Figure 2, and is split longitudinally as at 9 whereby a spring character is imparted thereto. The free end of the neck is formed with an enlarged head 10, also affected by the slots 9 and adapted to be compressed in order to pass through an aperture 6 and through a retaining ring presently to be described, in the manner illustrated in Figure 2.

The loose fit of the neck 8 in the aperture 5 constitutes a floating relation between the baseboard and the fastener element, so that this element may be adjusted to compensate for any reasonable inaccuracy in the axial registration of the apertures 5 and 6, but it is also desired to prevent longitudinal shifting of the fastener element with respect to the baseboard. With this object in view, I mount a ring 11 on the neck of the fastener element and dimension the parts so that the ring has a tight sliding fit on the neck.

The neck is reduced in diameter next to base for a length equal to maximum distance required between the base and ring, said distance being that required to hold the fastener firmly to baseboard. The reduction in diameter allows the uper part of the fastener element to expand, thus holding the ring in desired position. Due to its tight fit on the neck, the ring on reaching the depression 12 will snap therein and be held against exceeding a given spacing from the base 7. This spacing is sufficient to accommodate the thickness of the baseboard 4 and yet permit the floating movement of the fastener element. At the inner circumference of the ring 11 is formed a flange 13 which engages the base 7 when the ring is locked in the depression 12,

but this flange may be eliminated since only the maximum possible spacing between the parts 7 and 11 is important in this instance and is provided for by the depression as already described.

Figure 6 illustrates a modification of the invention wherein the base 7′ of the fastener element engages the baseboard 4′ on the surface which is nearer the framework 2′. In this manner a greater effective length of the fastener element is obtained, or a shorter element may be used for a given extent of penetration into the framework. The retaining member in this instance has a base 20 which engages the remaining or more remote surface of the board 4′ and further includes a stud or neck 21 which enters the neck 8′ of the fastening element. The depression 12′ of this element acts outside of the retaining member rather than within it as in the other embodiment of the invention.

Although specific embodiments of the invention have been illustrated and described, it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention as indicated by the appended claims.

What I claim is:

1. In combination with a base member having an oversized aperture, a fastener comprising a base adapted to engage one surface of said base member, a neck extending from said base and passing loosely through said aperture, thereby permiting free lateral shifting of the neck in any direction, a fastener head on said neck, a retaining ring slidably mounted on said neck and adapted to slidably engage the other surface of the base member, and means for maintaining a maximum distance between the ring and base.

2. In combination with a base member having an oversized aperture, a fastener comprising a base adapted to engage one surface of said base member, a neck extending from said base and passing loosely through said aperture, thereby permitting free lateral shifting of the neck in any direction, a fastener head on said neck, a retaining ring slidably mounted on said neck and adapted to slidably engage the other surface of the base member, and stop means on said neck for maintaining a maximum distance between said ring and base.

3. In combination with a base member having an oversized aperture, a fastener comprising a base adapted to engage one surface of said base member, an expanded neck extending from said base and passing loosely through said aperture, thereby permitting free lateral shifting of the neck in any direction, a fastener head on said neck, a ring having a tight sliding fit on said neck and adapted to slidably engage the other surface of said base member, said neck having a reduced part adapted to receive said ring and to retain the same.

4. In combination with a base member having an oversized aperture, a fastener comprising a base adapted to engage one surface of said base member, an expanded neck extending from said base and passing loosely through said aperture, thereby permitting free lateral shifting of the neck in any direction, a fastener head on said neck, a ring having a tight sliding fit on said neck and adapted to slidably engage the other surface of said base member, said neck having a depression adapted to receive said ring and to retain the same.

5. In combination with a base member havan oversized aperture, a fastener comprising a base adapted to engage one surface of said base member, a longitudinally slit neck extending from said base and passing loosely through said aperture, thereby permitting free lateral shifting of the neck in any direction, a fastener head on said neck, a retaining ring having a tight sliding fit on said neck and adapted to slidably engage the other surface of said base member, said neck having a depression at said base, said depression being adapted to receive said ring and retain the same.

6. In combination, an apertured base member, a fastener element having a base engaging one surface of said member, and a neck passing loosely through an aperture of the member, thereby permitting free lateral shifting of the neck in any direction, a fastener head on said neck, a retining ring slidably mounted on said neck and adapted to slidably engage the other surface of the member, and means for maintaining a maximum distace between the ring and base.

7. In combination with a base member having an oversized aperture, a fastener comprising a base adapted to engage one surface of said base member, a neck extending from said base and passing loosely through said aperture, thereby permitting free lateral shifting of the neck in any direction, a fastener head on said neck, said neck having a restricted portion, and a retaining member adapted to slidably engage the other surface of said base member and to be held by said restricted portion.

8. In combination with a base member having an oversized aperture, a fastener comprising a base adapted to engage one surface of said base member, a neck extending from said base and passing loosely through said aperture, thereby permitting free lateral shifting of the neck in any direction, a fastener head on said neck, a retaining member adapted to slidably engage the other surface of said member, and means for retaining said member in engagement with said neck.

9. In combination with a base member having an oversized aperture, a fastener compris-

ing a base adapted to engage one surface of said base member, a neck extending from said base and passing loosely through said aperture, thereby permitting free lateral shifting of the neck in any direction, a fastener head on said neck, and means on said neck engaging the other surface of said base member for retaining said base in sliding engagement with said base member.

In testimony whereof I affix my signature.

ROBERT MITCHELL.