

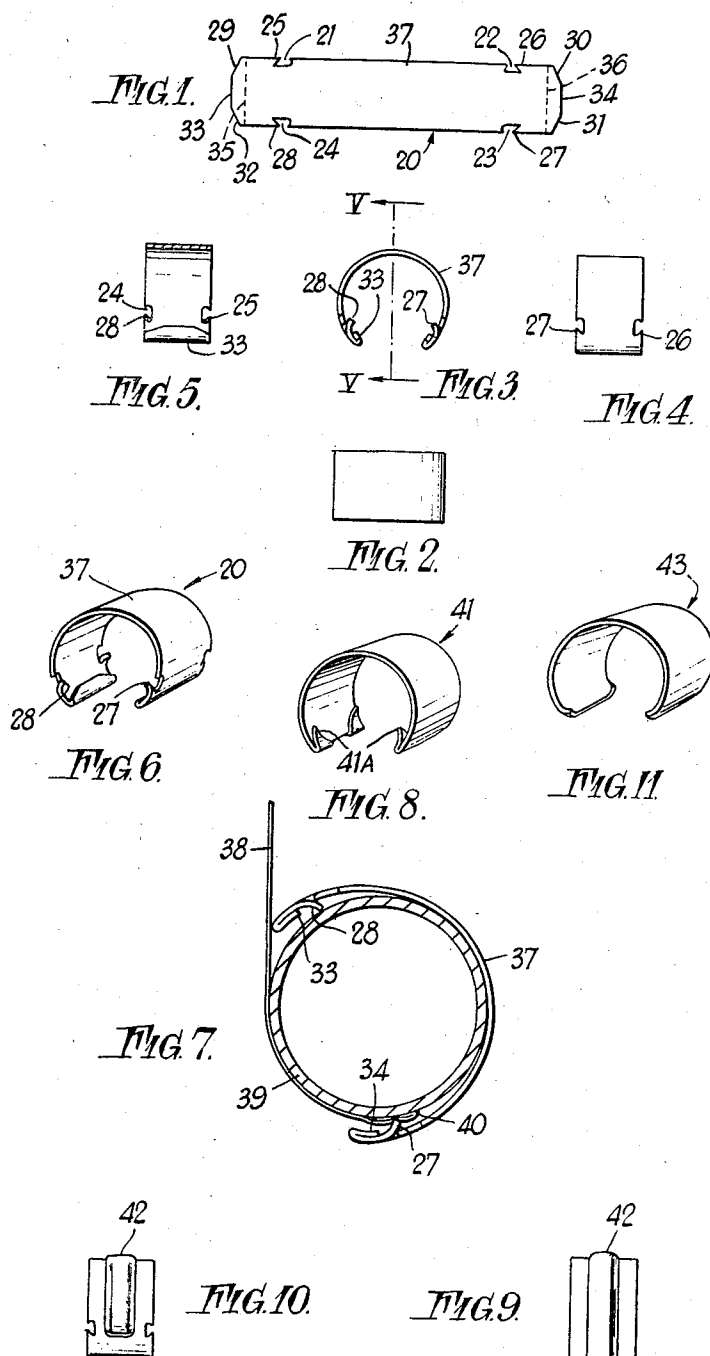
Nov. 25, 1958

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2,861,318

FASTENERS

Filed Jan. 26, 1954



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FASTENERS

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Application January 26, 1954, Serial No. 406,241

Claims priority, application Great Britain January 27, 1953

2 Claims. (Cl. 24—259)

The present invention relates to an assembly of flexible material secured to a tubular or rod-like member with the aid of spring clips, being particularly, although not exclusively, useful for securing flexible material such as Rexine to a tubular metal automobile seat.

In my patent specification No. 2,639,764 there is described and illustrated an assembly of this kind, in which Rexine is secured to a rod with the aid of clips each of which is of U-shape with at least one inwardly and rearwardly directed prong in each arm. The Rexine is lapped around the rod and the clips are pushed over the Rexine and rod so that both arms of each clip embrace both the Rexine and rod, the prongs in both arms passing through the Rexine to bite into the rod and thus hold the Rexine to the rod.

With such a known arrangement the clips are visible from the side of the seat and accordingly it is one object of this invention to provide an equally effective assembly in which the clips are hidden from view, or at least are less conspicuous. The present invention has, over the prior assemblies of this kind, other advantages which will become apparent from the following description.

According to the invention there is provided an assembly consisting of a sheet of flexible material secured to a tube with the aid of a plurality of resilient clips each of which is of C-shape and has an inwardly and rearwardly directed prong in each arm, wherein the flexible material is lapped around one side of the tube and a clip engages the tube from the opposite side with one only of its arms overlapping an edge of the material so that the prong in that arm engages both the material and the tube, while the other prong engages the tube alone.

In this specification the word "tube" is used to include any tubular or rod-like member, such as a longitudinally split tube, a cylindrical flange on the edge of a sheet of metal, a solid rod and like members.

Preferred forms of the invention will now be described with reference to the accompanying diagrammatic drawings in which:

Figure 1 shows a blank from which such a clip may be formed,

Figures 2, 3 and 4 are respectively a plan, front and side elevations of the same clip,

Figure 5 is a section on the line V—V of Figure 3,

Figure 6 is a perspective view of the same clip,

Figure 7 is a transverse section through a metal tube showing how the clip of the previous figures is used to attach a piece of Rexine to the tube,

Figure 8 is a perspective view of another form of clip,

Figures 9 and 10 are respectively a plan and elevation of a third form of clip, and

Figure 11 is a perspective view of an auxiliary clip which can be used for strengthening the clip of the previous figures.

The clip illustrated in Figures 2 to 7 is formed from a single strip of steel which is blanked out to the shape

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indicated generally at 20 in Figure 1. It will be seen that the blank is formed with four symmetrically placed cut-away areas 21, 22, 23 and 24 leaving four triangular prongs 25, 26, 27 and 28 respectively, which are bent out of the plane of the strip, all on the same side thereof. The ends of the blank are also cut-away as at 29, 30, 31 and 32.

The ends 33 and 34 of the blank are then folded back on themselves about the lines 35 and 36 respectively, again on the same side of the strip, and the central body portion 37 of the strip is bowed cylindrically to the shape best shown in Figure 3.

The finished clip is then rendered resilient and rust-proof in any known or suitable way.

The clip of the present invention is used in the manner illustrated in Figure 7.

As shown in this figure, the Rexine or the like 38 is lapped partially around the metal tube 39 and is folded inwardly on itself at 40. At spaced intervals along the tube clips are secured over the folded edge of the Rexine and over the tube, each clip snapping over the tube into the position shown. To do this one pair of prongs 26 and 27 are engaged in the Rexine, while it lies on the tube, where it is folded, and then the body of the clip is pressed over the tube until the other pair of prongs 25 and 28 snap over the widest part of the tube. The fabric may extend to any desired distance around the tube, short of the upper prong 28. The folding is not essential.

The prongs 26 and 27 may or may not pass right through the Rexine. If they do not, then the clip holds on to the tube by friction at this point, while at the other end the prongs bite into the metal of the tube.

In the modified form of clip indicated generally at 41, in Figure 8, the four prongs such as those shown at 41A are formed by shearing away a portion of each end of the blank to leave four triangular portions and then folding back the triangular portions to constitute the prongs. When such a clip is put into use in the manner of Figure 7, little or none of the clip can be seen from the left-hand side of this figure, which side represents the front view of a vehicle seat.

The strength of such clips may be increased by forming them as shown in Figures 9 and 10, with a reinforcing ridge 42 running around the body portion, but stopping short of the folded ends. Alternatively, and for the same purpose, there may be snapped over the body portion of the clip a reinforcing spring of the kind shown at 43 in Figure 11, the reinforcing spring being preferably of thicker material than the pronged clip.

Several advantages accrue to the fasteners of this invention, as compared with those known hitherto. For example, the edge of the Rexine or like covering material 38 does not need to be trimmed to a straight edge since it is folded back as at 40 (Figure 7). Owing to the method of attachment there is a saving of the same material. At the same time the clips are invariably unobtrusive and in some cases are completely hidden from sight.

Such a method of attaching fabric to a tube has the advantage of being cheap and quick to carry out, while the finished article is neat and firmly held.

What I claim is:

1. A clip for securing a sheet of flexible material in lapped relation around one longitudinal side of a cylindrical metallic tube, said clip comprising a one-piece smooth C-shaped body of resilient sheet material having a diameter approximately equal to that of the tube and a length to extend over a major arc of the tube, an inwardly and rearwardly extending sharply pointed prong integral with each arm of said body and constituting an extension of each end thereof, the distance between said

prongs measured around said tube covering a major arc of the tube and the prongs projecting inside the space defined by the curved wall of the body, the body embracing opposite sides of the tube over a major arc of its section with one arm thereof overlapping the flexible sheet material and the prong in the overlapping arm engaging both the flexible sheet material and the tube, and the prong in the other arm engaging the tube alone.

2. A clip as claimed in claim 1, wherein the body is formed in each arm with at least one prong folded at its root back upon itself so as to be directed inwardly and rearwardly thereof.

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