March 28, 1950 H. I. DOREMUS ET AL. 2,501,934

FABRIC SECURING MEANS FOR UPHOLSTERED SEATS

Filed Sept. 6, 1944

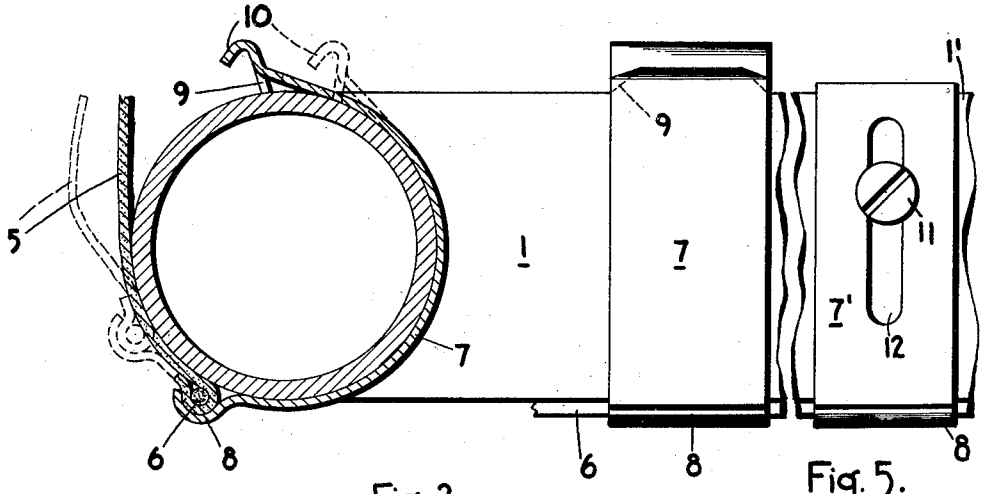

Fig. 2.

Fig. 5.

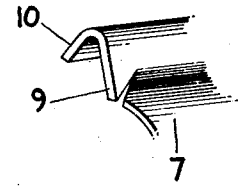

Fig. 4.

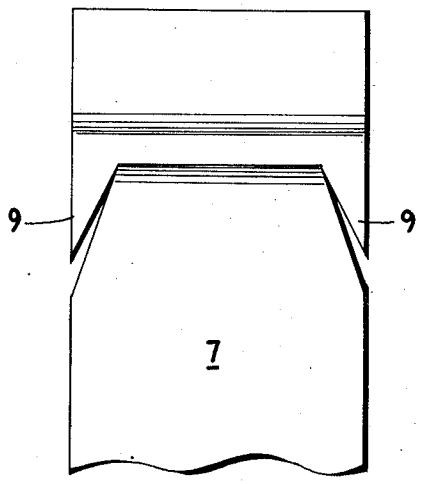

Fig. 3

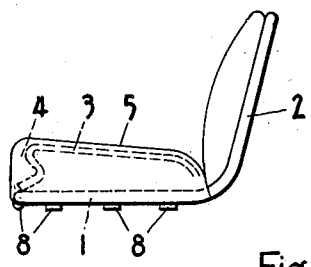

Fig. 1.

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Patented Mar. 28, 1950 2,501,934

UNITED STATES PATENT OFFICE

2,501,934

FABRIC SECURING MEANS FOR UPHOLSTERED SEATS

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Application September 6, 1944, Serial No. 552,886

9 Claims. (Cl. 155—180)

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This invention relates to the seat art and particularly to the manner of attaching the seat trim or cover material and to the fastener for so attaching such trim in place.

It has heretofore been proposed to place this flexible trim material over a spring cushion unit and lace it to the seat frame, such as in the automotive field, but this operation has been tedious and time consuming while the result has been unsatisfactory.

The primary object of this invention is to provide a seat in which the trim material is secured in a practical manner for the better service of the latter and the efficient functioning of the cushion unit.

An equally important aim of the present invention is to provide a novel fastener which, while subject to wider application, is particularly adapted for firmly anchoring the trim material to a metallic seat frame in a most effective manner and provide for adjustment of the trim for the purpose of removing wrinkles and likewise give proper tension to the upholstery.

In the drawing which illustrates the preferred embodiment of the invention:

Fig. 1 is an elevation of a seat constructed in accordance with the present invention;

Fig. 2 is an enlarged fragmentary view of the seat with parts in section to more clearly depict the trim anchoring fastener;

Fig. 3 is a fragmentary elevation of that end of the fastener which carries the frame biting teeth;

Fig. 4 is a detailed perspective view of the toothed end of the fastener; and

Fig. 5 is a modification showing another form of adjustment securing means for the fastener.

Referring more particularly to the drawing, the seat has an open frame preferably of metal tubing or other bar stock and shaped to provide a seat part 1 and a back part 2 integrally united. Suitably mounted on the seat frame member 1 is a spring cushion unit which may be formed of metallic sinuous springs generally indicated at 3, or their equivalents, such as coiled springs, sponge rubber, and the like. Overlying the spring body may be the padding 4, usual in cushioned upholstery, and placed over the cushion unit is the trim or covering layer 5 which is shown as being bordered by a welt 6.

The trim anchoring fastener is herein depicted as a metal spring clip 7 constructed from strip stock and shaped on the arc of a circle to assume a generally C-shape. Normally the spring clip is of smaller radius than the tubular frame member and is adapted to be sprung over the latter and frictionally embrace the same for the greater part of its periphery. For carrying out its function the clip is formed with an outwardly spaced terminal seat 8 to receive the

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welt 6 and hold it firmly against the frame member 1. In applying the clip, the welt is first engaged in its seat 8 and the clip is thereafter sprung over the frame member. Should the trim material bulge or develop any slack, as illustrated by the broken lines in Fig. 2, the clip may then be adjusted about the frame member in a counter-clock direction and stretch the material taut.

For maintaining the flexible trim material or fabric taut the clip is secured in its adjusted position by suitable means. For this purpose the clip may be provided with barbs or teeth 9 for biting into the frame member against clockwise movement thereabout. These teeth may be located at any desired point on the clip body although it has been found practical to place them adjacent the opposite end from the welt seat 8. By striking the teeth from the metal body of the clip and displacing them short of a true radial position they will be given the desired angular position to resist successfully any trim imparted force in a clockwise direction. The teeth may be disposed within the body lines of the fastener or along the margin thereof.

As shown in Fig. 4, the teeth 9 extend straight from a lifting lip 10 beneath which latter a tool may be inserted to pry or lift the teeth from biting contact with the frame member when it is desired to remove the spring clip for replacement of the trim fabric.

In lieu of the adjustment securing tooth or teeth 9 the clip 7', Fig. 5 may be clamped in position by means of a set screw 11 suitably threaded in a hole provided in the frame member 1'. By tightening the screw down upon the clip the latter will be firmly held against slipping from its position. If desired the clip may be provided with a slot 12 to receive the screw.

In use, the clip is applied to the seat frame after first engaging the welt in its seat. It is intended that the seat be shaped to firmly grip the particular fabric whether it has a welt or not. After springing the clip over the frame the former is rotatably adjusted about the latter to draw the trim layer taut against the resiliency of the spring cushion unit, as suggested in the full line position of Fig. 2 where it will be automatically held, as by the teeth 9, or manually secured, as by the screw 11. The rearward slant of the teeth will readily permit this tightening adjustment, while for the manual adjustment the screw will be manipulated.

As many clips may be used as necessary to properly anchor the trim layer, and when they are properly positioned it will be noted that they act against the tension of the spring cushion unit to hold the fabric taut. This tautness may be regulated or determined for the greatest comfort to the user and may be decreased by simply lifting on the lip 10 or regulating the screw 11.

The fabric may constitute the sole element of the seat suspended in the frame independently of a cushion unit, or the cushion unit may comprise padding alone. The circular cross section of the frame member will comprise polygonal and other shapes to which the clip may conform. The clip may be used as a practical means for securing sheet or flexible material to open frames other than seat frames.

It will be understood that the disclosure herein is merely illustrative of the inventive principles involved, which may be applied to other physical embodiments without departing from the scope and spirit of the invention claimed.

What is claimed is:

1. A seat having a frame with a part substantially circular in cross section, a spring cushion unit supported by the frame, a cover overlying the unit, and means attaching the margins of the cover to the frame comprising a spring clip sprung over such frame part for rotatable adjustment thereabout, one end of the clip having a seat receiving a welt on the cover to draw the cover taut upon rotative adjustment of the clip in one direction, and a tooth struck from the clip body and having biting engagement with the frame part, the biting tooth extending from the frame part at an angle to its radius in a manner to resist opposite rotative movement of the clip.

2. A seat having a frame of bar stock, a spring cushion unit supported thereby, a cover overlying the unit, and means attaching the margins of the cover to the frame comprising a spring clip sprung over a circular part of the frame for angular displacement thereabout, means for attaching the cover to the clip for being drawn taut by such angular adjustment of the clip, and means on the frame adjustably engaging the clip to fix the latter against displacement for holding the cover taut.

3. A frame having a part substantially circular in cross section, a flexible cover for the frame having a marginal welt, and a spring clip sprung over said frame part for angular displacement thereabout, one end of the clip having a seat receiving a welt on the cover for tensioning the latter when the clip is so displaced in one direction about the frame part, the opposite end carrying a tooth having biting engagement with the frame part and designed to increase its bite under the urge of the tensioned cover to hold the clip against cover loosening adjustment in the opposite direction.

4. A seat having a frame with a part substantially circular in cross section, a spring cushion unit supported thereby, a cover overlying the unit and having a marginal welt, and a spring clip sprung over said frame part with a frictional grip for rotative adjustment thereabout, one end of the clip having a seat receiving a welt on the cover for pulling the latter taut when the clip is so adjusted, the opposite end carrying a tooth having biting engagement with the frame against the tension of the cover to hold the clip in its adjusted position on the frame, and means at said opposite end of the clip for receiving a lifting force to disengage the tooth and thereby enable loosening adjustment.

5. A seat having a frame with a part substantially circular in cross section, a spring cushion unit supported thereby, a cover overlying the unit, and a spring clip sprung over said frame substantially circular part in frictional but rotatably adjustable embrace therewith, said clip having a part holding the cover to the frame, one end of the clip body carrying a tooth having biting contact with the frame part to hold the clip against loosening adjustment in one direction while permitting tightening adjustment of the cover in the opposite direction, and a lifting lip on the tooth portion of the clip by which the tooth may be disengaged from said frame part.

6. A spring clip of slightly greater than semicircular shape adapted to be sprung over a supporting member in spring embrace therewith and having an inwardly facing seat at one end for receiving an article, and an inwardly extending pointed tooth at the opposite end for biting engagement with such a member to withstand turning thereon.

7. A spring clip of slightly greater than semicircular shape adapted to be sprung over a supporting member in spring embrace therewith and having an inwardly facing seat at one end for receiving an article, an inwardly extending pointed tooth at the opposite end for biting engagement with such a member to withstand turning thereon, and a lift lip arranged adjacent said tooth for lifting the same from biting engagement with the member to enable the clip being turned about such member.

8. A circular spring clip open at one side for being sprung over a round member in rotative adjustment, said clip being provided on one end portion with an inwardly extending barb to bite upon such member and an adjacent overhanging lip on such end portion by which the barb may be lifted from the member.

9. A spring clip of slightly greater than semicircular shape adapted to be sprung over a supporting member in spring embrace therewith and having means at one end for engaging an article for adjustably securing the same to such supporting member, and an inwardly extending pointed tooth at the opposite end for biting engagement with such a member to withstand turning thereon.

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