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SPRING CLIP

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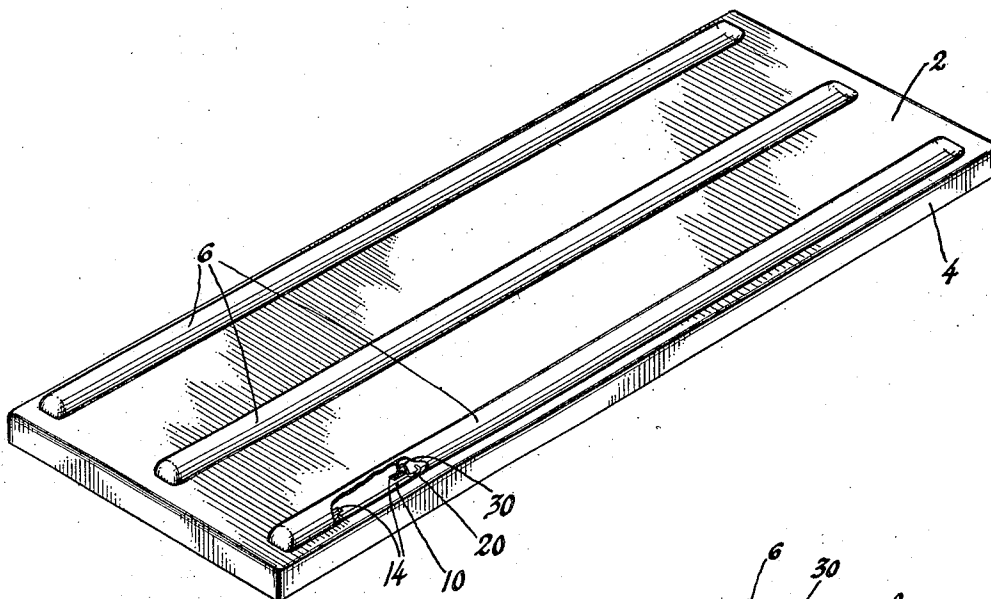


Fig. 1

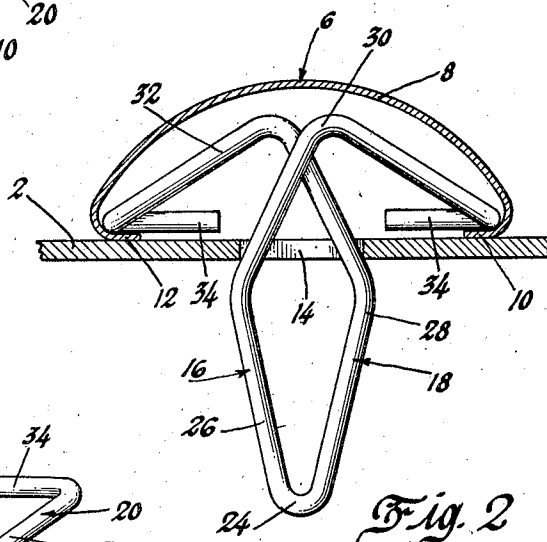


Fig. 2

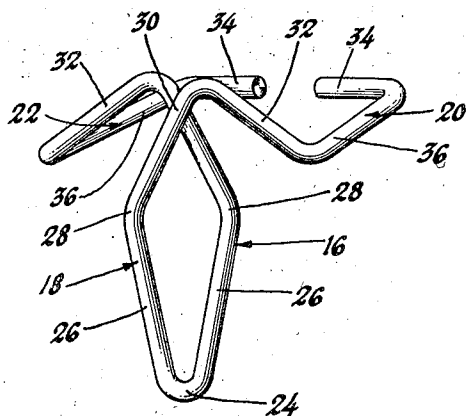


Fig. 3

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SPRING CLIP

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4 Claims. (Cl. 24-215)

This invention relates to metal clips used to retain a bar or strip, and particularly the metal strip of the trunk platform of automotive vehicles.

Some automotive vehicles are equipped with a platform at the rear of the body, the purpose of the platform being to mount a trunk. In order that the platform will not be scratched or marred, there are secured thereto a plurality of rounded bars or of flat strips upon which the trunk rests. In order that these strips may be quickly applied or removed as desired, the clip of the invention is used.

The clip is made of metal, preferably of spring wire, bent at its middle to form a loop. The two ends of the metal are suitably bent to form wings which extend substantially at right angles to the loop portion. Each side of the loop has a bend intermediate its ends to form the open structure of the loop. The wire of the clip is crossed immediately beyond the loop and the wire of the wing at the loop side forms a V with the loop side. The loop has considerable resiliency and constantly urges the wing portions apart.

On the drawing

Figure 1 is a perspective view of a trunk platform, with parts broken away, showing the bars applied thereto and secured in position by the clips of the invention.

Figure 2 is a section through a portion of the running board and bar showing the clip in operative position.

Figure 3 is a perspective view of the clip.

Referring to the drawing, the numeral 2 indicates the conventional trunk platform of an automotive vehicle. The trunk platform is made of metal and has the peripheral flange 4. The platform is flat at its top and has removably secured thereto the three bars 6. The bars are rounded at their top as indicated at 8 in Figure 2 and have the interned lateral flanges 10 and 12. The bars 6 are open between the flanges 10 and 12. The trunk platform 2 is provided with a plurality of openings 14 along its length immediately under the bars 6.

In order to hold the bars 6 removably in place there is employed the clip 16 of the invention. The clip is made of spring wire and comprises the loop portion 18 and the wing portions 20 and 22. The loop portion 18 is formed by bending the metal upon itself at 24 substantially at its mid portion. The sides 26 of the loop are bent at 28 to give a more open head or structure to the loop. Beyond the bends 28 the sides 26 are crossed as indicated at 30 so that the left hand member (Figure 3) will be at the right to form

the right wing 20 and the right hand member will be at the left to form the left wing 22. The portions 32 of the wings immediately adjacent the loop 18 are inclined as shown in Figure 3 so that a substantially V shaped structure is formed with the side 26. The remaining portions of the wings 20 and 22 are in a plane at right angles to the loop so that substantially the entire wings are at right angles to the loop 18. The wing sides 36 extend at right angles to the portions 32 and to one side only of the loop, and said wing sides 36 extending in the same direction for a certain distance where the ends 34 are bent at right angles and toward each other. The ends or tips 34 of the wings extend toward each other but do not contact. The sides 36 and ends 34 form the main portions of the wings and lie in the same plane and at right angles to the loop. The structure and shape of the clip are best shown in Figure 3.

The application of the clip is best shown in Figure 2. The clip is manually inserted in the open portion of the bars 6 between the flanges 10 and 12 and manually turned through 90° to force the wings 20 and 22 toward each other to place the loop 18 under tension. Where the flanges 10 and 12 are wider and therefore leave a much narrower space therebetween, the clips 16 are inserted at the end of the bar 6 and slid along its length to their proper positions. The flanges at the bar ends are cut away a short distance to allow easy insertion of the clips. When placed in the bar 6 the clips will be under compression and retained in place because the wings are tightly pressed into the angles formed by the flanges 10 and 12 and the rounded portion 8.

As many of these clips 16 are used as there are openings 14 under each bar 6. By fixing the loop in the bars so that they mate with the openings, the bars may be secured in place by forcing the loops 18 through the openings 14 which are smaller than the widest part of the loops at the bends 28. In forcing the loops into the holes 14 the wings of the clip will be pushed toward each other and will expand again as soon as the wider portion of the loop at the bends 28 has passed through the opening 14. The clips will be held in place due to the fact that the widest portion of the loops are larger than the openings and take against or abut the under edge of the openings. The spring action of the loop 18 will force the wings 20 and 22 apart to force the wing sides 36 into the angle at the flanges 10 and 12 to retain the bars securely in position. When the bars are in secured posi-

tion the clips will firmly hold them against movement in any direction. If it is desired to remove the bars, a suitable pointed tool may be forced under the bar or between the bar and the platform 2 and the bar pried upwardly. The upward pressure will cause the loops to contract so that they may be withdrawn from the openings 14.

It is to be noted that the loop end at the bend at 24 is rounded so that all exposed parts are rounded and smooth, leaving no corners or edges. This absence of sharp edges or corners is of advantage when wiping the article to which the bars are applied. The rag used will not catch on the clips but will pass thereover easily to allow a cleaning of the article.

Prior clips with sharp edges or ends also scratched the article when the bar was being applied. With the rounded projecting parts of the invention this scratching is eliminated. The rounded edges at 24 also allows an easy application of the clip to its openings.

I claim:

1. In a metal clip, a spring loop formed by bending the metal upon itself at substantially its middle, the sides of said loop crossing and having a bend in each to give the open formation to the loop, and end portions extending away from each other and forming wings, said wings extending on one side only of the loop and having the main portions thereof substantially in

the same plane and substantially at right angles to the loop, each of said wings comprising three members bent substantially at right angles to each other.

2. In a metal clip, a spring loop formed by bending the metal upon itself at substantially its middle, end portions forming wings, said wings extending away from and on one side only of the loop and having the main portion thereof positioned substantially in the same plane and at substantially right angles to the loop, the ends of said wings being free and inwardly bent toward each other.

3. In a metal clip formed of wire, a spring loop formed by bending the wire upon itself substantially at its middle, the sides of the loop crossing each other, wings formed at the ends of the wire, said wings extending in the same direction substantially at right angles to and on one side only of the loop.

4. In a metal clip formed of wire, a spring loop formed by bending the wire upon itself substantially at its middle, the sides of the loop crossing each other, wings formed at the ends of the wire, said wings extending away from each other and having the main portions thereof in the same plane at substantially right angles to and on one side only of the loop, the portion of said wings nearest the loop being inclined relative to the main portion of the wings.

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