

June 30, 1953

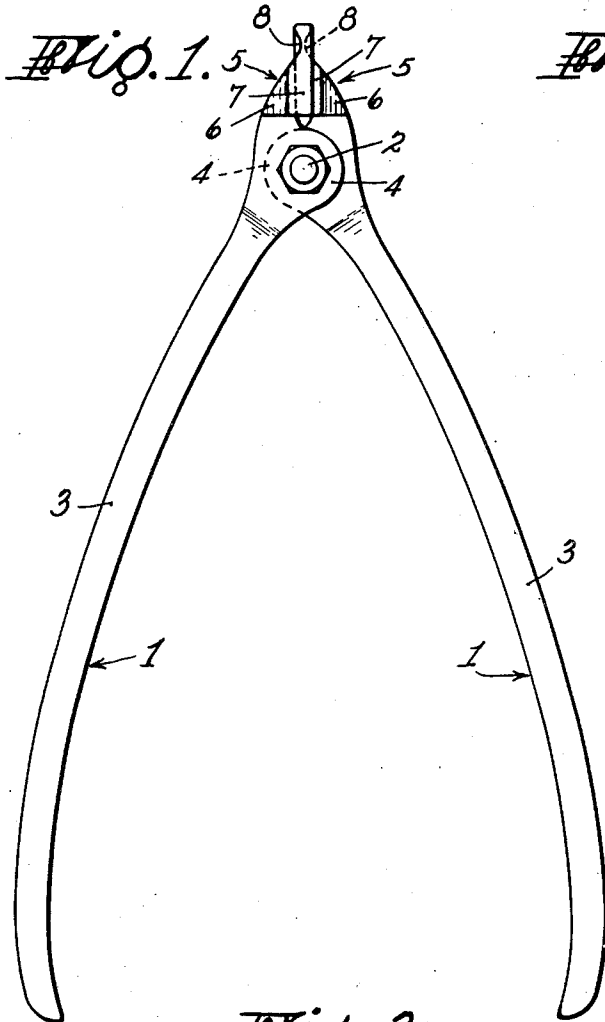
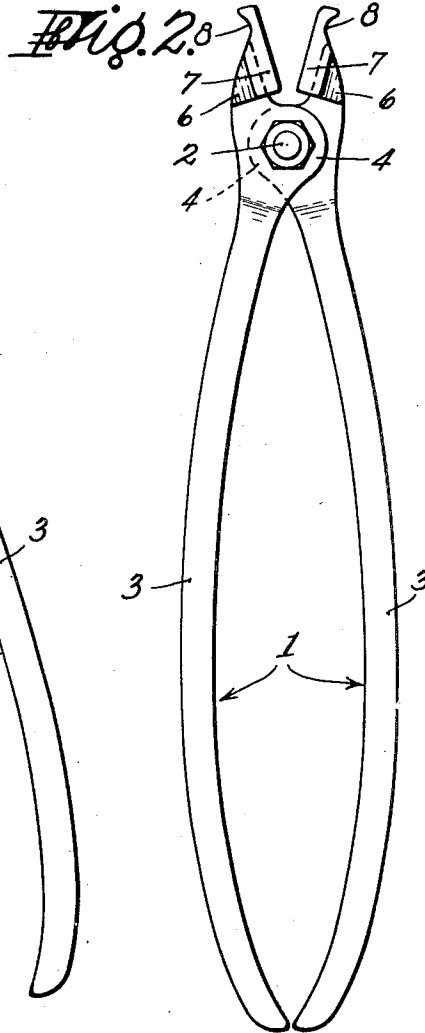
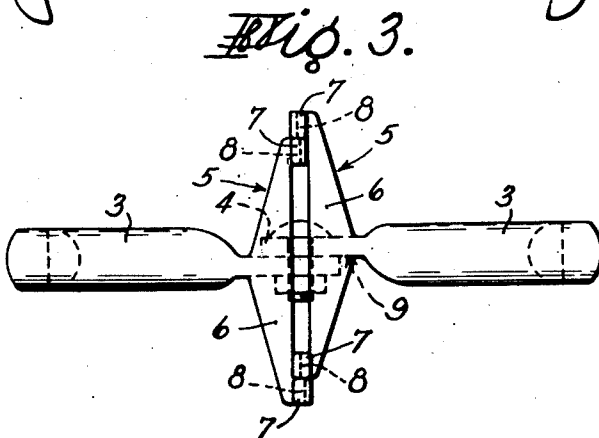
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2,643,565

EXPANDING JAW PLIERS FOR REMOVING CLIPS FROM
COIL SPRING ASSEMBLIES AND THE LIKE

Filed Nov. 30, 1950

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 4.

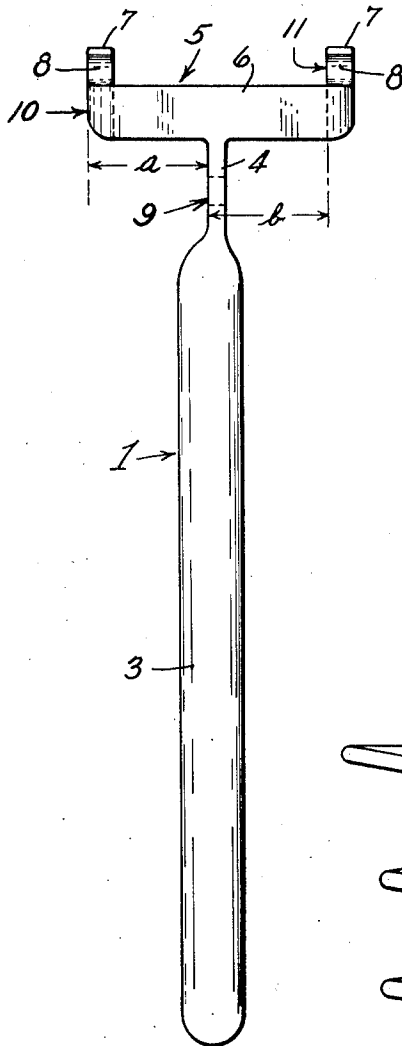


Fig. 5.

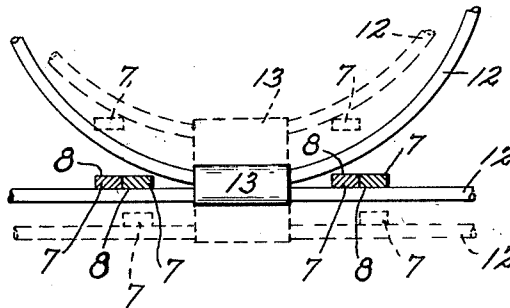
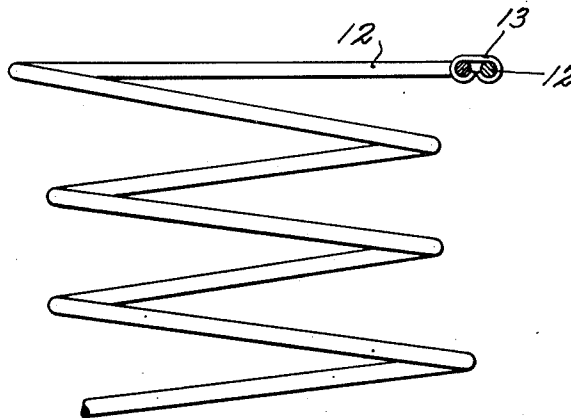


Fig. 6.



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EXPANDING JAW PLIERS FOR REMOVING CLIPS FROM COIL SPRING ASSEMBLIES AND THE LIKE

George W. Mount, Greenfield, Mass.

Application November 30, 1950, Serial No. 198,369

2 Claims. (Cl. 81-48)

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This invention relates to a novel device for removing a clip holding adjacent, generally parallel wires together in coil spring assemblies and the like.

Coil spring assemblies such as those found in automobile seats, couches, and the like, are constructed with rebent metal clips holding the topmost adjacent wires of adjacent coil springs together; and the top wires of the outermost springs of the assembly are likewise clipped to a support wire surrounding the assembly, so that all the coil springs stand upright and are linked together to more efficiently support a weight which is not evenly distributed over the entire area of the assembly. When it has been necessary to remove a coil spring from the assembly it has in the past been a relatively difficult job to remove the clips linking the springs, and it is an object of this invention to provide an inexpensive device with which such clips may be removed by a simple, quick and efficient operation.

This and other objects and advantages of the invention will be more clearly pointed out and explained in the following description, the accompanying drawings, and in the claims.

In the drawings, which illustrate one embodiment of the invention,

Fig. 1 is an elevation of the device in closed position;

Fig. 2 is a similar view with the device in open position;

Fig. 3 is a top plan view;

Fig. 4 is a side view of one lever of the device;

Fig. 5 is a top plan detail on a reduced scale of part of a coil spring assembly to show the operation of the device; and

Fig. 6 is a detail, partly in section, of part of a coil spring assembly.

As shown by the drawings, the new clip removing device is a spreader tool consisting of two identical uncrossed levers 1 of the first class (i. e., in which the fulcrum is between the weight and the power), fulcrumed together by a pivot pin at 2. The levers 1 are identical and each comprises an elongated handle member 3, a fulcrum lug 4, and a bifurcated cross head generally indicated at 5 at the work-engaging end of each lever.

The cross head 5 includes a cross beam 6 extending at right angles to the plane of movement of the levers 1 and a pair of laterally spaced work engaging fingers 7 having aligned wire receiving recesses 8 in their outer faces. As best shown in Figs. 1 and 2, the fingers are angled outwardly from their respective handles 3 and away from the lugs 4. Further, the lugs 4 are laterally offset relative to the fingers 7 with the distances a and b equal, said distances measuring respectively the distances between the inner face 9 of the lug 4 and the outer side 10 of one finger 7, and between the same face 9 of the lug and the inner side 11 of the other

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finger 7. By this arrangement of the parts, when the levers are placed together with lug faces 9 in face to face relation, and the tool is closed as in Figs. 1 and 3 with the handle ends 3 thereof separated, the fingers 7 of opposite levers will be aligned across the top of the tool.

Referring now to Figs. 5 and 6 for an understanding of one operation of the device, the tool is closed (as in Figs. 1 and 3) and the aligned fingers 7 are inserted, for example, between adjacent, generally parallel top wires 12 of adjacent coil springs, the fingers straddling the rebent metal spring clip 13, which is to be removed, with the wires 12 lying in recesses 8. When the handles 3 are forced together the heads 5 are forced apart, the fingers 7 forcibly separating the wires 12 to thereby straighten out and free the clip 13 as shown in dotted line in Fig. 5.

What is claimed is:

1. A spreader tool for removing holding clips from coiled spring assemblies comprising two identical levers each having a handle portion at one end and a cross head at the other with two parallel free ended work-engaging fingers extending one from each end of the cross head at an obtuse angle to the handle, said fingers being spaced one from the other to straddle the clip to be removed, each lever having a fulcrum lug extending therefrom substantially at the apex of the reflex angle formed by the fingers and handle, one side face of the lug being equidistant from the outer side of one finger and the inner side of the other finger, said levers being connected together with said side face of one lug in face to face engagement with the corresponding face of the other lug, whereby when the handle portions of the levers are spread apart the fingers of one cross head may be brought into lateral contiguous interdigital alignment with the fingers of the other cross head at opposite ends of the clip.

2. A spreading tool as in claim 1 in which the faces of said fingers on the side opposite the fulcrum lugs are provided with aligning work-engaging grooves.

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