

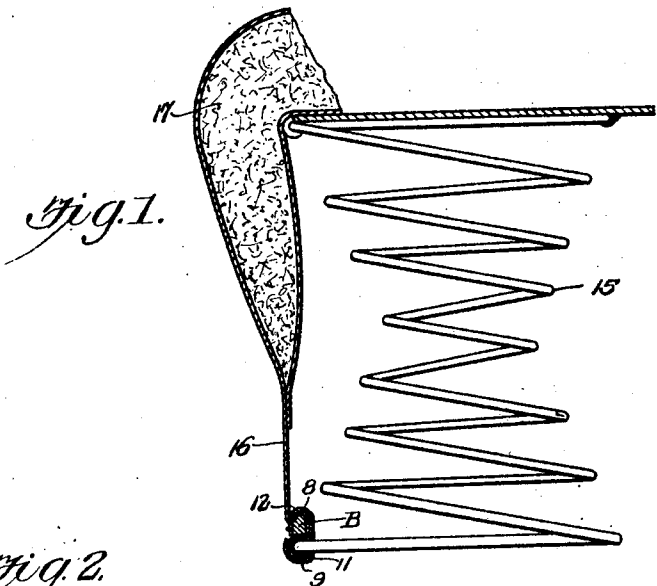
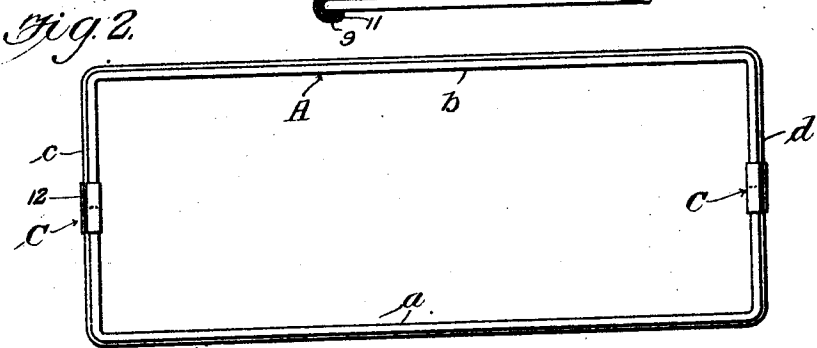
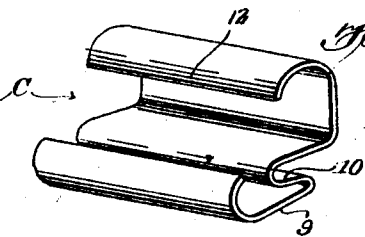
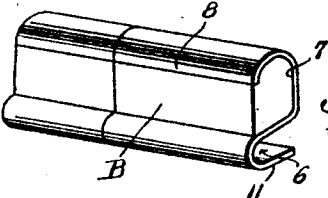
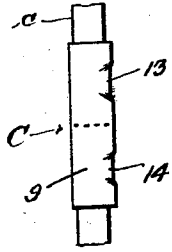
Nov. 22, 1927.

1,650,294

H. A. PALMER

BASE FRAME FOR SPRING STRUCTURES

Filed July 28, 1926



Inventor
Harry A. Palmer
Attorney
[Signature]

UNITED STATES PATENT OFFICE.

HARRY A. PALMER, OF JACKSON, MICHIGAN, ASSIGNOR TO REYNOLDS SPRING COMPANY, OF JACKSON, MICHIGAN.

BASE FRAME FOR SPRING STRUCTURES.

Application filed July 28, 1926. Serial No. 125,411.

This invention relates to base frames for spring structures.

In the present practice in the art of sheet metal base frames for spring structures wherein there is provided a wood or fibrous insert employed for tacking the upholstery covering to the base frame, it has been the custom to roll the sheet metal frame to the desired cross-sectional shape, forming a complete metal part of the frame from one continuous piece frame stock, locking the ends together, and then rolling or otherwise inserting the wood or fibre tacking strip. This is difficult due to length of metal strip, and also, there is the additional step required for the insertion of the wood or fibre tacking strip after the metal part of the frame is formed into the desired shape.

It has been discovered that the metal and fibrous insert frame members can be formed complete in a single rolling operation. In other words, in the present instance the separate step of inserting the tacking strip is obviated by the operation of rolling in the tacking strip when the sheet metal strip is formed, resulting in saving of time and consequent economy in the construction of the base frame.

Base frames for spring structures when composed of sheet metal and fibrous inserts require the formation of a joint or connection between abutting or overlapping ends of a one-piece or sectional frame member and these joints or connections are unsatisfactory being weak and resulting in unsightly appearance. In some instances, the abutting ends of the frames have been fastened to one of the border springs and this connection of the ends of the frame or frame sections being all that holds the frame ends or sections from separation, the connection has been weak and ineffective. Another method has been to overlap or telescope the abutting ends of one piece of sectional frame member and this results in the use of more base material than is necessary, an item in the production, and results in an unsightly joint which does not hold well and which presents other difficulties in the

pinching of flanges of the grooves of the sheet metal strip at the joints.

It is, therefore, another object of the present invention to provide an effective, rigid, neat, well appearing, joint or joints in the base frame as distinguished from the heretofore ineffective, weak and unsightly joint and through the instrumentality of a peculiarly shaped ferrule I have found it possible to make the frame complete with the fibre included in one or a single operation in a rolling machine. The frame can be made of two sections held together by a ferrule at each end, thereby simplifying the operations in forming the contour of the frame and all in all economize in time and material in the building of the base frame structure.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—

Figure 1 is a fragmentary sectional view of the invention, showing the lower edge of the upholstery apron secured by tacking to the fibrous insert located in the outer groove of the sheet metal base frame strip.

Fig. 2 is a top plan view of the base frame.

Fig. 3 is a fragmentary perspective view of the frame with the ferrule removed.

Fig. 4 is a perspective view of the ferrule which connects abutting ends of the frame together.

Fig. 5 is a fragmentary bottom view of the frame with the ferrule applied and pinched thereon.

Referring now more particularly to the accompanying drawings, the reference character A indicates a sheet metal base frame

strip folded longitudinally upon itself to form a continuous groove 6 and a continuous outer groove 7. The metal frame strip may be formed of a single piece of material or in sections, as may be desired. For instance, as shown in Fig. 2, the strip A may consist of a front section *a* and a rear section *b*, each having abutting side portions *c* and *d*, respectively. The meeting ends of these sections do not overlap or telescope one within the other but are placed end to end in abutting relation.

The character B indicates a wood or other fibrous strip of material adapted to fit in the outer groove 7 and held therein by the flange 8 of the outer groove 7. When the folded sheet metal strip A is a one continuous piece base frame, the insert B is preferably of a single piece of material and has its ends abutted adjacent the joint formed by the abutting ends of the sheet metal strip A and when the base strip A is formed of sections as noted above each section carries an insert B, the same length as the length of the metal strip, as shown in Fig. 2.

A ferrule C is adapted to connect the abutting ends of the sections together, the ferrules receiving the ends of the sections. Each ferrule is of a shape in cross section substantially the cross sectional shape of the base strip and at its lower portion it is bent back upon itself to provide upper and lower flanges 9 and 10, relatively close together, to snugly but freely receive between them the lower flanges 11 of the inner groove 6 of the sheet metal strip sections A. The upper flange 9 of each ferrule continues inwardly into the inner groove 6 and thence upwardly over and on the back wall of the outer groove 7 with its upper edge 12 bent downwardly to lie against the flange 8 of the strip A, exposing the fibrous tacking strip at the joint or ferrule so as not to interfere with the tacking of the marginal edge of the upholstery covering to the tacking strip. It will thus be seen that the lower flange 9 of the ferrule is provided on its inner side with a re-bent portion forming a substantially S-shaped flange defining a lower outwardly facing channel and a superposed inwardly facing channel.

When the base frame sections have thus been fitted in the ferrule C, each ferrule is pinched or indented at two or more points, as at 13 and 14, onto the lower flange 11 of the respective sections A on opposite sides of the joint formed by the abutting ends of the frame sections to effect a firm and rigid connection between the frame sections or ends. By this method of connecting the abutting ends of the base frame together, the outer groove is not expanded or contracted but is continuous, even and smooth throughout its length. Moreover, the abut-

ting ends are neither overlapped nor contracted nor expanded but are simply slipped into the ends of the ferrules. The result is a highly effective joint, the same being rigid and overcoming the rough and unsightly appearance heretofore given the outside of the metal portion of the frame when the metal is overlapped, expanded or contracted.

In the production of this sheet metal frame provided with the wood or other fibrous tacking strip, it will be noted here that the metal strip may be passed through a rolling or other process and folded onto the insert and the composite base frame with its insert formed in one continuous operation and the composite strips subsequently cut into desired lengths according to the size and character of base frames desired with the cut lengths having their ends connected by the ferrules C. This method overcomes first rolling the metal into desired form and shaping the frame into desired size and locking the ends together and subsequently insert a roll in the fibre insert; or in other words, the second operation or step of inserting the tacking strip B is obviated by the operation of rolling in the tacking strip when the sheet metal strip is formed, resulting in saving time and economy in the building of the base frame.

The base frame herein described provides the inner groove 6 to receive the base coils of the border springs 15 in which the base coils are received by pinching action of the inner groove onto the base coils. The fiber insert B provides a foundation for tacks whereby to secure the lower edge of the apron, skirt or facing 16 of the upholstery cover 17 to the base frame.

What is claimed is:

1. A ferrule, for joining the abutting ends of an S-shaped rim strip, having an inwardly facing lower groove and an outwardly facing upper groove containing a tacking strip, comprising a base portion including a lower horizontal flange terminating at one side in an upwardly extending rearwardly curved flange adapted to embrace the corresponding base portion of the rim strip, and being provided at its opposite side with a re-bent portion adapted to fit within the inwardly facing groove of said rim strip, said re-bent portion extending upwardly and forwardly to provide an outwardly facing channel member adapted to embrace the upper groove of said rim strip.

2. A ferrule of substantially S-shape adapted to connect two S-shaped frame members, each frame member defining an inwardly extending base flange and an inwardly and outwardly opening groove with a tacking strip in each outwardly opening groove, said ferrule including a base flange terminating at its outer side in an upstanding rearwardly curved flange adapted to re-

ceive the corresponding portion of the rim strip, said base flange at its inner side being re-bent to form a substantially S-shaped flange defining a lower outwardly facing channel and a superposed inwardly facing channel, the lower channel being adapted to receive the base flanges of the frame members, and the upper channel being adapted to fit within the inwardly opening groove of the frame members. 10

In testimony whereof I have hereunto set my hand.

HARRY A. PALMER.