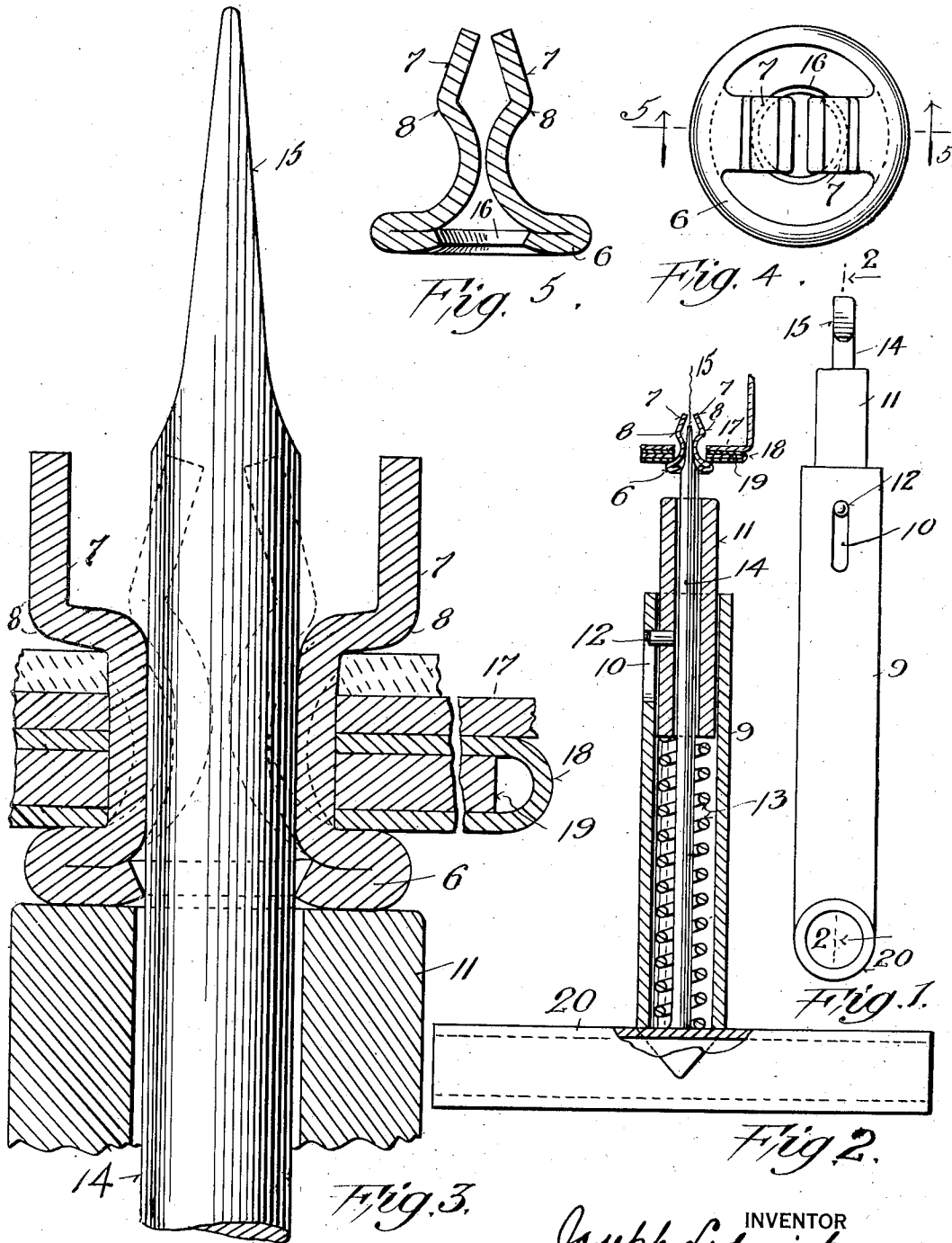


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 TOOL FOR APPLYING UPHOLSTERY CLENCH RIVETS.
 APPLICATION FILED FEB. 27, 1919.

1,361,340.

Patented Dec. 7, 1920.



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TOOL FOR APPLYING UPHOLSTERY CLENCH-RIVETS.

1,361,340.

Specification of Letters Patent.

Patented Dec. 7, 1920.

Application filed February 27, 1919. Serial No. 279,594.

To all whom it may concern:

Be it known that I, JOSEPH LEDWINKA, a citizen of the United States, residing at Philadelphia, county of Philadelphia, State of Pennsylvania, have made a certain new and useful Invention in Tools for Applying Upholstery Clench-Rivets, of which the following is a specification.

This invention relates to tools for applying clench rivets, and particularly such rivets employed to fasten upholstery to automobile body and door panels.

The object of the invention is to provide a tool of the character referred to which is simple in structure, inexpensive to manufacture, and efficient in use.

Other objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawing, and finally pointed out in the appended claims.

Referring to the drawing and to the various views and reference signs appearing thereon,—

Figure 1 is a view in elevation of a tool embodying the principles of my invention.

Fig. 2 is a view in longitudinal section of the same on the line 2, 2, Fig. 1, and showing the tool in position ready to apply a clench rivet.

Fig. 3 is a broken view similar to Fig. 2, but on a larger scale, showing the relative position of the parts at the completion of the operation for applying a clench rivet and before withdrawing the tool.

Fig. 4 is a view in plan of one form of clench rivet to the application of which the tool is adapted.

Fig. 5 is a view in section on the line 5, 5, Fig. 4.

In the manufacture of automobiles it is a common practice to secure the upholstery to the sheet steel panels of the tonneau, seat backs, and doors by means of screws which are screwed through the upholstery and into the panel.

This is not a wholly satisfactory method for the reason that it is expensive, requiring the screws to be turned and the threaded holes therefor to be tapped in the panels,

and consuming time in assembling and screwing in the holding screws, moreover, the panels are frequently too thin to be tapped with threaded holes to receive and efficiently retain the threads of the screws, thereby necessitating the employment of a thicker panel reinforcing strip in which the threaded screw holes are tapped, thereby adding to the expense.

To overcome these objections a clench rivet stamped up out of sheet steel is employed, said rivet having a head portion and integral legs or prongs bent up from opposite points of the edge of the head in angular relation to the plane of the head, and the legs or prongs being bent toward each other and then outwardly away from each other to form shoulders. In use the parts to be secured together by the clench rivets are punched through and the rivet legs or prongs are inserted through the hole thus formed. The legs or prongs are then spread apart from each other to cause the shoulders thereon to engage over the inner surface, adjacent the hole, of the inner member of the parts to be secured while the head of the rivet bears against the outer surface of the outer member of said parts.

The present invention relates particularly to the tool employed to spread apart the legs or prongs of a clench rivet of the character referred to after they have been inserted through a punched hole in the parts to be secured together, and the purpose of the invention is to provide a tool of the character and for the use referred to which is simple, inexpensive and efficient.

In Figs. 4 and 5 I have shown a clench rivet stamped up from sheet metal and having the body or head 6, from opposite points in the edge of which the legs or prongs 7 are bent up. These legs or prongs are integral with the body 6, and are first folded over toward each other and upon the body 7; partway across the body, and thence outwardly away from the plane of the body but inclined toward each other, and thence outwardly away from each other, to form shoulders 8, and finally toward each other at their free ends.

In Figs. 1, 2 and 3, I have shown a structure of tool embodying my invention. This consists of a tubular member 9, which is

slotted longitudinally as at 10. Extending partially into the tubular member 9 is a sleeve 11, having a pin 12 which is received in the slot 10. A spring 13 arranged within the tubular member 9 engages the sleeve 11 and normally exerts its tension thereon to press the sleeve 11 outwardly through the tubular member 9 to the limit permitted by the pin 12 in the slot 10.

Extending through the sleeve 11 and into the tubular member, and suitably fastened therein, if desired, is the shank 14 of a spreader bit. This spreader bit projects beyond the outer end of the sleeve 11, and is tapered as indicated at 15, to facilitate its entrance through the central opening 16 in the body 6 of clench rivet and between the oppositely disposed legs or prongs 7, as indicated in Fig. 2. Now, by forcing the tool endwise the spreader bit, or the inclined or beveled side surfaces thereof engage the opposed surfaces of the clench rivet legs or prongs and force the same apart to cause the laterally projecting shoulders 8 thereon to engage over the adjacent inner surface of the inner member of the parts to be secured together. In this operation the end of the sleeve 11 is brought up into abutment with the outer surface of the rivet body and thereafter yields endwise against the action of the spring to the limit permitted by the slot 10. This serves to steady the tool in the operation of applying a rivet. After the tool bit has accomplished its work, the tool is withdrawn, the spring 13 assisting in the withdrawal movement.

In Fig. 2 I have shown the tool partly inserted into a rivet applied to secure the parts 17, 18, 19 together; and in Fig. 3 I have shown the tool advanced to the desired extent to complete its work and ready to be withdrawn.

Any suitable or convenient handle may be provided for the tool. In the form shown a handle 20 of tubular form is employed to which the end of the tubular member 9 is secured.

I do not claim herein as my invention the form of clench rivet shown and described, as the same is not of my invention.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own

invention and desire to secure by Letters Patent is,—

1. In a tool for applying sheet metal clench rivets, a tubular member, a sleeve extending partially into and having limited endwise movement with reference to said tubular member, and a spreader bit extending into and having a tapering end projecting beyond said tubular member and sleeve.

2. In a tool for applying sheet metal clench rivets, a tubular member, a sleeve having limited endwise movement with reference to said tubular member, means to yieldingly resist said movement, and a spreader bit extending through said sleeve and into and fastened with relation to said tubular member and having a tapering end extending beyond said tubular member and sleeve.

3. In a tool for applying sheet metal clench rivets, a tubular member, a sleeve, a pin and slot connection between these parts, a spring engaging said sleeve, and a spreader bit having its shank extending through said sleeve and into said tubular member and a tapered end extending beyond said tubular member and sleeve.

4. In a tool for applying sheet metal clench rivets, a longitudinally slotted tubular member, a sleeve extending partially into said tubular member and having a pin extending into the slot of said tubular member, a spring arranged in said tubular member and bearing against the said sleeve, a spreader bit extending through said sleeve and into said tubular member and having a tapering end projecting beyond said tubular member and sleeve.

5. In a tool for applying sheet metal clench rivets, a longitudinally slotted tubular member, a sleeve extending partially into said tubular member and having a pin extending into the slot of said tubular member, a spring arranged in said tubular member and bearing against the said sleeve, a spreader bit extending through said sleeve and into said tubular member, and fastened to the latter and having a tapering end projecting beyond said tubular member and sleeve, and a handle secured to said tubular member.

In testimony whereof I have hereunto set my hand on this 24th day of February, A. D. 1919.

JOSEPH LEDWINKA.