

D. BOURQUE.
 TOOL FOR SETTING FASTENER PARTS.
 APPLICATION FILED FEB. 16, 1921.

1,438,692.

Patented Dec. 12, 1922.

Fig. 1.

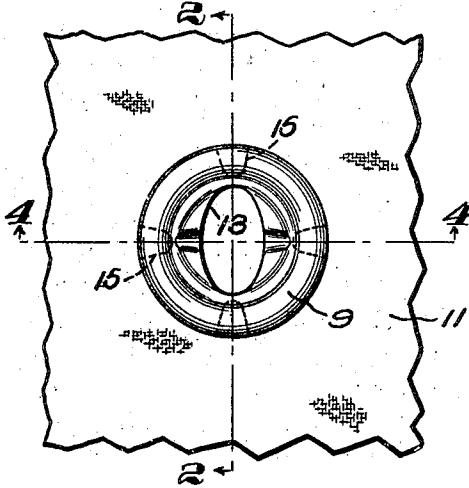


Fig. 2.

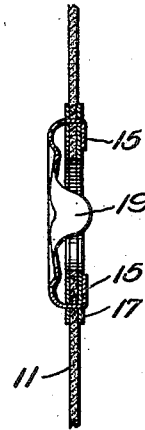


Fig. 3.

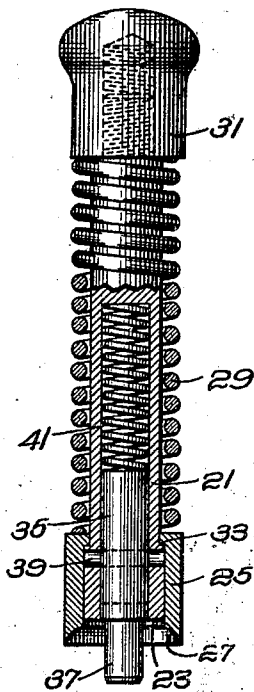


Fig. 4.

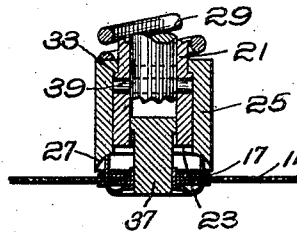
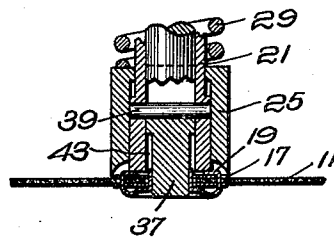


Fig. 5.



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UNITED STATES PATENT OFFICE.

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TOOL FOR SETTING FASTENER PARTS.

Application filed February 16, 1921. Serial No. 445,354.

To all whom it may concern:

Be it known that I, DAVID BOURQUE, a citizen of the United States, and a resident of Amesbury, county of Essex and State of Massachusetts, have invented an Improvement in Tools for Setting Fastener Parts, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has to do with a tool particularly designed for securing elements of separable fasteners to vehicle curtains or other parts to which it is desired to attach them. Herein I have shown a tool particularly designed for securing the eyelet of a turnbutton fastener, such eyelet being of the type shown in my application Serial No. 349,749, filed Jan. 6, 1920.

My invention will best be understood by reference to the following description of the form thereof which I have shown by way of example in the accompanying drawings, wherein:

Fig. 1 is a plan view of an eyelet member for a turnbutton fastener for use with which the tool shown is particularly designed;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a partial elevation, partial section of a tool embodying my invention;

Fig. 4 is a fragmentary section showing the eyelet about to be set by the tool, the section of the eyelet being substantially on the line 4—4 of Fig. 1; and

Fig. 5 is a similar view showing the setting operation completed.

Referring to the drawings, I have there shown an eyelet member 9 of a turnbutton fastener attached to a curtain 11, such eyelet in the form shown having a generally circular contour but being provided with an elliptical opening 13. The eyelet is secured to the curtain by means of prongs 15 extending rearwardly from the outer margin thereof and adapted to extend through the curtain 11 and be clinched over a washer 17. In the form of eyelet shown the margin of the opening 13 is provided with rearwardly extending ear members 19 which project through the opening in the curtain which aligns with the opening 13 and are adapted to make contact with the supporting surface of the turnbutton member

proper as described in my application above referred to.

In securing an eyelet of this nature there is danger of an uneven clinching of the prongs 15 which will result in an uneven setting and in fact one of these prongs may be so turned over as to extend to the opening of the eyelet and possibly obstruct the same. A more serious difficulty is the possible deformation of the eyelet itself by the clinching blows and particularly a bending of one of the ears 19 which may cause the same to bind on the male member of the fastener. My invention provides a tool whereby eyelets may be rapidly and accurately set without any such troubles as are here referred to.

Referring to Fig. 3 I have there shown a tool embodying my invention and including a stock 21 having an end face 23 which may serve as a clinching shoulder for flattening down the prongs of the eyelet in the manner shown in Fig. 5, the outer diameter of this face, however, preferably being such as not to extend to the roots of the prongs 15 where they pass through the washer 17. To upset or turn over the prongs 15 from the position shown in Fig. 4 I may provide a sleeve 25 embracing the stock and having its edge formed with an inwardly sloping or curving, annular upsetting shoulder 27. The sleeve is supported on the stock by a strong spring 29 interposed between the upper end of the sleeve and a head 31 on the end of the stock, which spring normally thrusts the sleeve forward against a stop provided by an enlargement 33 at the end of the stock and into the position shown in Fig. 3 where the upsetting shoulder 27 is in advance of the end face 23 of the stock. Referring to Fig. 3 it will thus be seen that if the tool is properly positioned over the assembled parts of the eyelet, as shown in Fig. 4, preferably by means hereafter described, and the tool pressed downwardly as by the blow of a mallet, the stock 21 and sleeve 25 are moved downwardly as a unit and the shoulder 27 embracing the several prongs 15 will simultaneously and uniformly upset them and turn them inwardly. In this action they will be carried inwardly under the face 23 of the stock proper. When by encountering a suitable resistance the sleeve 25 is brought to rest, the stock 21 will still descend, compressing

the spring 29 to the position shown in Fig. 5 and the face 23 will flatten down and firmly clinch the prongs 15.

Suitable means are provided for positioning the tool and herein for the further purpose of supporting the parts forming the inner wall of the eyelet opening 13 and preventing them from being deformed in the setting operation. For this purpose there is mounted in the end of the stock a pilot member 35 having an end 37 formed to fit the opening 13 and to support the walls thereof, such as the ears 19 in the setting operation. Herein this pilot member 35 telescopes within the stock 21, being supported therein by a cross pin 39 which plays in a suitable slot in the pilot and being normally supported in its outward position beyond the setting face of the sleeve 25, as shown in Fig. 3, by a relatively light spring 41.

To accommodate the ears 19 and prevent them from being damaged by the setting face 23 of the stock, the body portion of the pilot is made larger than the end 37 which fits the opening in the eyelet and thus when the pilot is depressed within the stock, as shown in Fig. 5, a clearance 43 is provided for, into which the ears 19 may project, this clearance being located inwardly of the setting face 23 and surrounding the end 37 of the pilot, against which the ears 19 lie. Thus the ears 19 are not only supported and held in their position by the end 37 of the pilot but provision is made whereby the setting face 23 will not come in contact with them but can pass beyond them firmly to clinch the attaching prongs 15.

Having thus described in detail the particular form of tool shown by way of example in the accompanying drawings, the principles exemplified thereby which I claim as new and desire to secure by Letters Patent I shall express in the following claims:

1. A tool for setting eyelets of separable fasteners which have a central opening and a set of prongs around the margin of the eyelet comprising a pilot to fit and support the walls of the eyelet opening and an up-

setting shoulder radially remote therefrom to oppose the prongs of the eyelet.

2. A tool for setting eyelets of separable fasteners comprising a stock having a pilot to fit and support the walls of the eyelet opening, a sleeve carried by the stock having an upsetting shoulder facing the prongs of the eyelet and a spring supporting the sleeve.

3. A tool for setting eyelets of separable fasteners which have a central opening and a set of prongs around the margin of the eyelet having an annular setting shoulder for simultaneously turning inwardly and clinching the eyelet prongs and a yieldably mounted pilot inward of the annular shoulder and spaced therefrom and formed to fit the eyelet opening whereby to position the tool.

4. A tool for setting eyelets of separable fasteners comprising a stock having an end face forming a clinching surface, a pilot yieldably mounted in the stock, a sleeve embracing the stock having an incurved edge forming an upsetting shoulder and a spring normally holding the edge of said sleeve beyond the end face of the stock.

5. A tool for setting eyelets of separable fasteners comprising a stock having a clinching face, a pilot having a reduced end adapted to fit and support the walls of the eyelet opening, said pilot being yieldably mounted in said stock and providing a space between said reduced end and clinching face to receive portions of the eyelet.

6. A tool for setting eyelets of separable fasteners comprising a stock, a sleeve surrounding the stock and having an edge forming an upsetting shoulder normally yieldably supported beyond the end of the stock and a pilot yieldably held in the stock having a reduced end shaped to fit and support the walls of the eyelet opening, said end being normally supported beyond the edge of said sleeve.

In testimony whereof, I have signed my name to this specification.

DAVID BOURQUE.