

E. E. JOHNSON.
METHOD OF MAKING TURNBUCKLES.
APPLICATION FILED MAR. 26, 1900

935,660.

Patented Oct. 5, 1909.

Fig. 1.

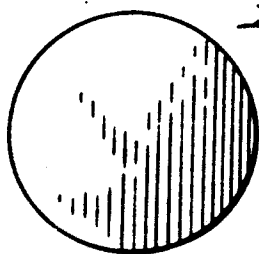


Fig. 3.

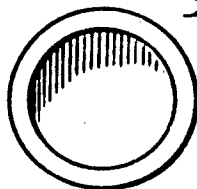


Fig. 5.



Fig. 7.



Fig. 9.



Fig. 11.



Fig. 2.



Fig. 4.



Fig. 6.

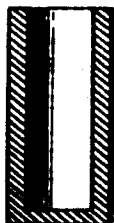


Fig. 8.



Fig. 10.



Fig. 12.



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METHOD OF MAKING TURNBUCKLES.

935,630.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed March 25, 1908. Serial No. 423,240.

To all whom it may concern:

Be it known that I, EDWARD E. JOHNSON, a citizen of the United States of America, and a resident of St. Paul, county of Ramsey, State of Minnesota, have invented certain new and useful Improvements in Methods of Making Turnbuckles, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figures 1 and 2, respectively, a plan and a transverse section of the blank from which the buckle is constructed; Figs. 3 and 4, respectively, a plan and a cross-section showing the appearance of the blank after the first operation; Figs. 5 and 6 similar views of the device after the second operation; Figs. 7 and 8 similar views of the product after the next operation; Figs. 9 and 10 similar views of the article after the next operation; Figs. 11 and 12 similar views of the completed article.

The object of this invention is to provide a simple and inexpensive method of manufacturing light and strong rod-couplings of the turn-buckle type, that is a tubular coupling such as shown in Fig. 12, consisting of a central enlarged portion, polygonal in cross section to adapt it to receive a tool, and reduced end portions internally threaded for connection to the externally threaded adjacent ends of the rod sections. In carrying out this method I take a circular flat disk of sheet metal and draw or stamp it to a cup form such as shown in Figs. 3 and 4; and then I draw this cup still deeper to the form shown in Figs. 5 and 6. I then, by suitable dies draw this cup down to the peculiar shape shown in Figs. 7 and 8, that is with its main or upper part polygonal in cross section and its lower portion narrowed down to form one of the necks at the ends of the coupling. I then, by a still further drawing operation, elongate this ferrule-like cup and then open the lower end of the cup by cutting it off or otherwise, as shown in Fig. 10. I then place the coupling in a suit-

able die and neck or narrow down by compression the upper end of the tube, any suitable die arrangement being used for this purpose, such, for instance, as the die shown in Fig. 4 of my co-pending application Serial No. 423,239. The neck portions of the coupling are then threaded internally to complete the coupling. In this manner a strong light coupling can be made at a minimum expense for large quantities. By drawing the coupling in the manner set forth the coupling will be made of a single homogeneous compacted piece of steel.

It will be observed that by my method I avoid weakening the tubular blank by radial expansion or stretching but on the contrary greatly strengthen the reduced end-ports by bodily compressing the metal inwardly and thus putting it under radial compression. There will not even be any stretching or bulging of the blank at the vertical corners of the mandrel *c* as the distance between these corners and the internal wall of the die is equal to the thickness of the wall of the blank.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

The method herein described of making turn-buckle rod-couplings from a sheet metal cup having a closed bottom, consisting in drawing down the cup to the desired depth and simultaneously compressing and narrowing the lower end of the cup to a cylindrical form and the upper portion into a hexagonal shape in cross-section throughout its length, then opening the lower closed end of the cup, and then reducing the upper end by compression to a narrow cylindrical shape, for the purpose set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 6th day of March 1908.

EDWARD E. JOHNSON.

Witnesses:

G. M. ARPER,
E. C. GOODMAN.