

(No Model.)

T. R. HYDE, Jr. & J. LINES.
METHOD OF FORMING STOCKING SUPPORTERS.

No. 469,476.

Patented Feb. 23, 1892.

Fig. 1

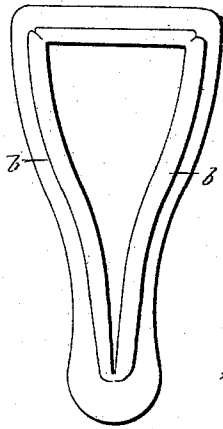


Fig. 2

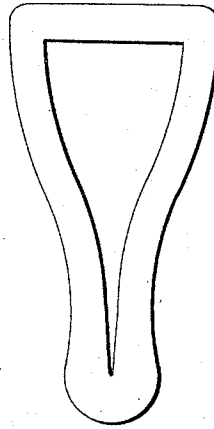


Fig. 3

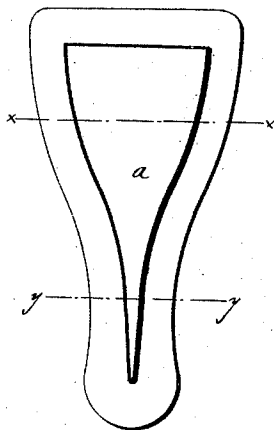


Fig. 4

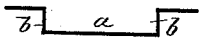


Fig. 6



Fig. 5



Fig. 8



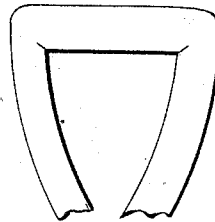
Fig. 7



Fig. 9



Fig. 10



Witnesses.
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UNITED STATES PATENT OFFICE.

THEOPHILUS R. HYDE, JR., AND JOHN LINES, OF WATERBURY, CONNECTICUT,
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METHOD OF FORMING STOCKING-SUPPORTERS.

SPECIFICATION forming part of Letters Patent No. 469,476, dated February 23, 1892.

Application filed August 3, 1891. Serial No. 401,524. (No model.)

To all whom it may concern:

Be it known that we, THEOPHILUS R. HYDE, Jr., and JOHN LINES, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Methods of Making Stocking-Supporters; and we do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a face view of the loop complete; 15 Fig. 2, a reverse side of the same. Figs. 3, 4, 5, 6, 7, 8, and 9 illustrate the method of completing the article; Fig. 10, a modification.

This invention relates to an improvement in the method of manufacturing that class of devices which consist of a V-shaped metallic loop attached to the end of a strap, and so that a portion of the stocking being drawn into the said V-shaped loop may be thereby engaged so as to support the stocking, the strap being attached to the waist above.

The loops above referred to have been stamped from sheet metal by means of dies, the dies leaving the loop in the required shape; but in such construction the inner edge of the loop is unavoidably rough or unfinished and liable to cut the stocking. To overcome this difficulty the loop has been first cut out at the narrower portion of a width greater than that required for the finished loop, then the edge inclosed within a double strip of metal, which produces a rounded edge upon the inside of the loop; but in such construction a very considerable addition of metal is required for the production of the article and a comparatively large expense for labor is also required in the production of the bushing and its application, there being in many cases several operations necessary to complete the article. This construction is therefore expensive.

Our invention relates, particularly, to the construction of that class of stocking-supporters in which the inner edge is rounded or finished by thickening the metal at the edge, 50 the invention having for its object to avoid

the necessity of the greater width of metal, and also the operation required to contract the narrower portion of the loop after the metal has been turned over.

To this end the invention consists in drawing the metal from the inside of the loop, producing an opening of no greater width or different in shape from that required for the finished articles, such drawing producing a flange projecting from the reverse side, and then that flange closed over onto the surface, so as to produce a rounded edge of double metal, and as more fully hereinafter described.

A blank is cut from sheet metal and cupped, the outline of which corresponds to the shape required for the finished article, and the inside also corresponds to the outline of the interior required for the finished article, this shape being shown in Figs. 3, 4, and 5. The metal being punched from one surface, produces the bottom *a* of the cup and the surrounding sides *b*, these sides being of a depth corresponding to the width of the flange required to be turned over, and the outline of the cup corresponds to the opening required for the completed loop. The bottom *a* of the cup is removed, leaving the sides *b* projecting as flanges on that surface of the blank, as seen in Figs. 6 and 7. Then the flanges are turned over onto the surface from which they project, as seen in Figs. 8 and 9. By thus drawing or striking the blank into cup-shape the flanges are drawn out from the metal and without the necessity of making any change in the shape of the opening through the loop in the completion of the loop, that shape being the same in the cup itself as in the finished article. By this process of manufacture we are enabled to cut the blank of the shape and outline of the complete loop, and so that the loss of metal required in making the blank wider than the finished loop is avoided, as also the operation of compressing the loop laterally to bring it to the required width is avoided.

We have described the operations in the manufacture as distinct steps; but it will be understood by those familiar with the manufacture of sheet-metal articles that the blanking out, the drawing up, and the punching 100

out of the bottom, as well as the return of the flange, may be made in a single machine, so as to be practically one operation.

5 It is not essential to this method of manufacture that the bottom shall be left in the blank for the purpose of drawing the flanged sides, although that is preferable, as it gives a more perfect uniformity to the width of the sides than could otherwise be done. The bot-
10 tom may be omitted, an opening being cut through the blank so much less than the completed opening as to afford metal for the drawing up of the flange, as seen in Fig 10, and so that the drawing out will force the
15 metal through and project it in the form of a flange on the reverse side. The invention is not to be understood, therefore, as limited to any particular steps in the process of manufacture.

20 We claim—

The herein-described method of making V-shaped loops for stocking-supporters, consisting in drawing the metal into cup shape from the inside of the loop, thereby forming a recess, the outline of which is the same shape
25 and size as the opening in the complete article, removing the bottom of the said recess, thereby leaving the sides of the cup as flanges around the opening, and turning the said flanges over onto the surrounding surface,
30 substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

THEOPHILUS R. HYDE, JR.
JOHN LINES.

Witnesses:

C. M. DE MOTT,
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