No. 660,605.

Patented Oct. 30, 1900.

F. E. VANDERCOOK.

SHEET METAL CHAIN.

(Application filed Mar. 14, 1900.)

(No Model.)

Fig. 1.

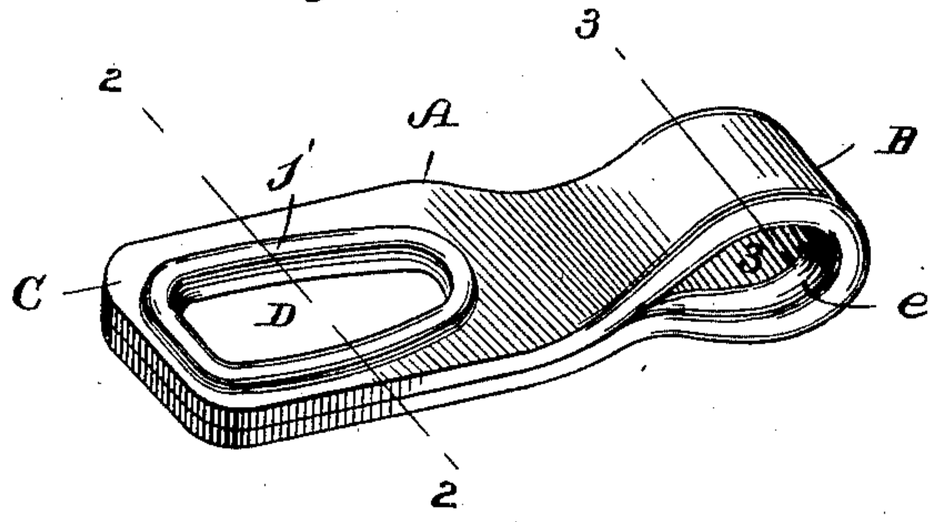


Fig. 2.

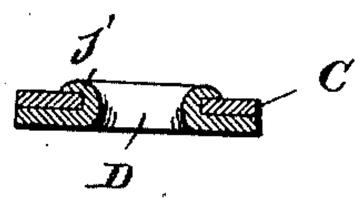


Fig. 3.

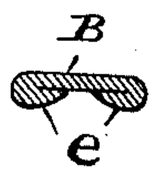


Fig. 4.

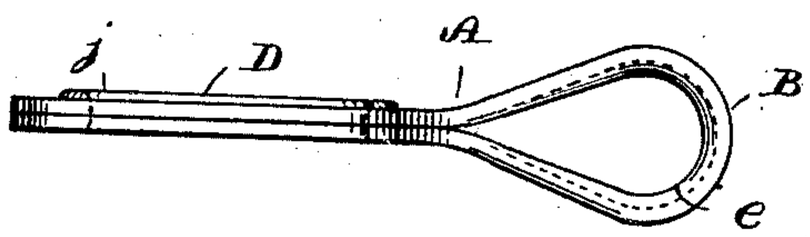


Fig. 5.

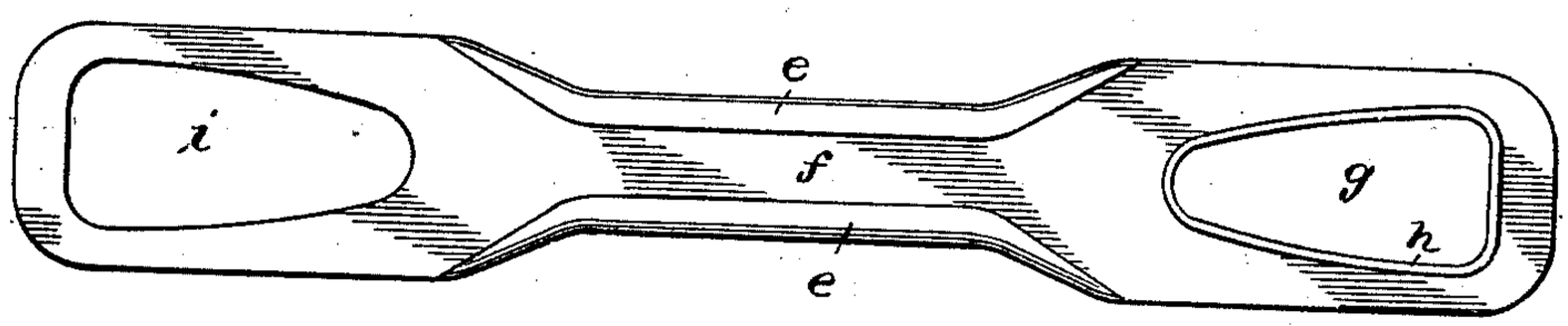
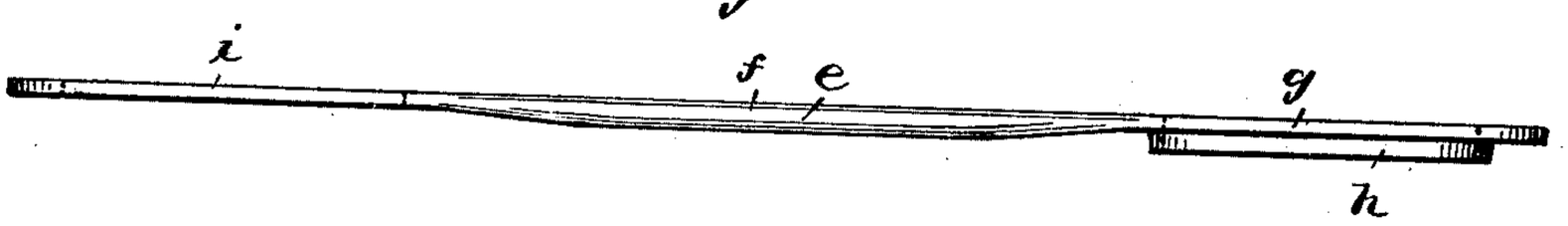


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRANK E. VANDERCOOK, OF WATERBURY, CONNECTICUT, ASSIGNOR OF ONE-HALF TO GEORGE E. JUDD, OF SAME PLACE.

SHEET-METAL CHAIN.

SPECIFICATION forming part of Letters Patent No. 660,605, dated October 30, 1900.

Application filed March 14, 1900. Serial No. 8,646. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. VANDERCOOK, a citizen of the United States, and a resident of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Sheet-Metal Chains, of which the following is a specification.

This invention relates to new and useful improvements in chain-links, and refers especially to that class formed from sheet metal by a series of operations which are automatically performed, including the threading of said links into a continuous chain.

The objects of my invention are to improve upon chain-links of the above class by constructing them in a manner to permit of their being produced from a single strip of sheet metal of uniform width and thickness and also to reduce the amount of scrap and employ the surplus metal to reinforce the wearing parts; further, to produce a chain of a uniform tensile capacity which will be lighter than those now upon the market, and, finally, to accomplish these objects in a manner which will permit of the links being produced and united into a continuous chain by automatic machinery in the customary manner.

With the above objects in view my invention resides and consists in the novel construction illustrated upon the accompanying sheet of drawings, forming a part of this specification, upon which similar characters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 illustrates a perspective view of a single link embodying my improvement. Figs. 2 and 3 indicate cross-sections of Fig. 1, taken on line 2 2 and 3 3, respectively. Fig. 4 illustrates a side elevation of the link shown in Fig. 1. Figs. 5 and 6 show a plan and edge elevation, respectively, of the blank for the above link as it appears before being folded and secured together.

Heretofore in the production of chain-links of this class it has been customary to stamp out the blank from sheet metal, which operation necessitated considerable waste of stock, by reason of the removal of the material from the two sides of the blank, as well as the stock from the eyes and the ends of the links. In my present invention, as will later be apparent, I preserve the greater portion of this metal and reinforce the weak parts of the links therewith, thus lessening the amount of waste in scrap and likewise, as before stated, increasing the efficiency of the chain.

Referring in detail to the characters of reference marked upon the drawings, A indicates the link as a whole, which, as will be apparent, is formed from a sheet-metal blank of improved design by folding the same at the middle, thus forming a loop portion B, and uniting the flat extremities into a tang C, which contains an eye D. The special outline or shape of my link is immaterial and forms no part of the invention, since my improvement resides solely in the special construction of the loop and eye, as will be apparent.

My improved link is produced by first stamping out a blank from a strip of sheet metal and then operating upon said blank to turn in and swage down the central opposite edges of the stock, as shown at *e e* in Figs. 5 and 6, thus narrowing and reinforcing the central portion *f* of said blank. Simultaneously with the above operation I also turn outward the inner edge of the orifice *g*, which in part forms the eye D, thus producing a continuous deflected flange *h*, as clearly appears at the right in Figs. 5 and 6. The orifice *i* at the opposite end of the blank is just enough larger to receive the flange *h* when the blank is folded and the two faces are brought together to form the tang, as shown in Figs. 1 and 4. This flange will project through the orifice *i* when the link is folded, and it is then turned over upon the face of the adjoining end, as at *j*, in a manner to eyelet them together, as will be clearly understood from Fig. 2. It will thus be apparent that when the link is folded and completed, as shown in Figs. 1 and 4, both the loop B and the eye D contain a reinforcing-rib, which is produced by turning in the surplus stock, and consequently the wearing qualities of the complete chain are greatly enhanced, and, furthermore, a much more rigid link is produced.

In the drawings the reinforcement of the loop appears upon the inside. This of course is preferable; but I do not wish to confine

myself to the particular location of the reinforcement, since my invention is broad enough to cover an external reinforcement, if desired. The same is also true with regard to the reinforcement of the eye in the tang. If preferred, the above reinforcements can be turned in farther than that shown in the drawings, particularly in the construction of the loop, when in some instances it might be desirable to reinforce the entire width of the loop instead of just the edges, as shown.

While I have shown and described herein a link containing a reinforcement of both its eye and loop, I do not wish to be confined in my patent to such a construction, since it will be quite apparent to those skilled in the art to which it appertains that if for any reason it may be desirable one of said parts can be reinforced without the other, as the construction of one is in no way dependent upon that of the other and neither is their operation.

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

1. A chain-link produced from a blank of sheet metal and comprising a loop of uniform width and thickness, a tang portion formed by the two adjoining ends of said blank, having an interior reinforcement formed by turning in the two parallel edges of the blank, an eye through said tang the edge of which is reinforced by passing the deflected edge of the eye of one end through that of the adjoining orifice and turning said deflected edge over in a manner to unite them together.

2. A chain-link produced from a sheet-metal strip of uniform width and thickness and consisting of a tang and loop portion, an eye in said tang which is reinforced by passing the deflected edge of the eye of one end through that of the other and turning said edge over, said loop being formed by the central bend in the blank, internal reinforcements of said loop portion produced by swaging inward the two central parallel edges of the blank, substantially as described.

3. A blank for a chain-link, produced from a strip of sheet metal of uniform width and thickness, a reinforcement in the central portion of said blank produced by turning in the central portion of the two straight parallel edges, eyes in the two ends of the blank, one of which is provided with a deflected edge to engage and overlap that of the other eye, substantially as described.

Signed at Waterbury, New Haven county, Connecticut, this 7th day of March, A. D. 1900.

FRANK E. VANDERCOOK.

Witnesses:
J. H. SOMERS,
GEO. E. JUDD.