(No Model.)

J. C. SCHMIDT.

CHAIN LINK.

No. 546,713. Patented Sept. 24, 1895.

Fig. 1.

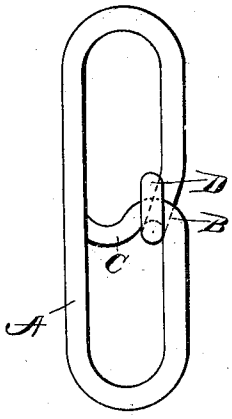


Fig 2.

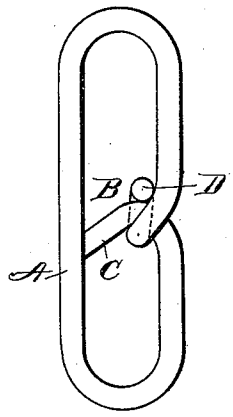


Fig. 3.

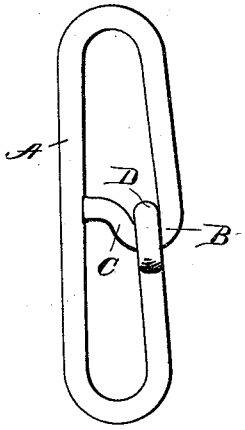
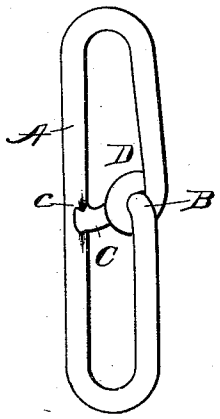


Fig. 4.



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CHAIN-LINK.

SPECIFICATION forming part of Letters Patent No. 546,713, dated September 24, 1895.

Application filed February 15, 1895. Serial No. 538,523. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. SCHMIDT, of York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Chain-Links; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in links for chains, and has for its object to provide an easily-constructed link, strongly braced against collapse under strain, whereby the quantity of metal employed for a chain of given strength may be reduced to the minimum.

A further object of the invention is to provide a link of such conformation as will permit of the same being formed easily and rapidly by simple machinery when so desired; and the invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of a link constructed in accordance with my invention, and of the preferred configuration. Fig. 2 is a corresponding view of a link in which the end forming the cross-bar is substantially straight, and Figs. 3 and 4 are views illustrating means for preventing any movement of the end of the cross-bar.

Like letters of reference in the several figures indicate the same parts.

In manufacturing links in accordance with my present invention I prefer to bend them up from rod or bar metal while in a substantially cold state; but this, it will be understood, is an inconsequential matter, and, if desired, the links may be formed by first heating the metal and subsequently giving it the desired conformation, and I have illustrated a form wherein the link is bent up while in a cold state as a mere matter of convenience.

In forming a link in the preferred manner and as illustrated in Fig. 1 the ends of the bar of metal A from which the link is formed are brought together about midway of the link on one side, and one of said ends is bent into a hook-like portion B, while the extreme end C extends across the link and abuts against the opposite or straight side. The opposite end of the bar encircles the hook-like portion B, being formed into an eye D, which tightly embraces the portion B, and preferably has its extreme end lapped under or on the inner side of the side bar of the link. The eye D thus formed is preferably given a slight bend inward, thereby tending to hold the parts more rigidly when subject to strain. The end C extends across the link and constitutes a substantial cross-bar, the tendency of which is to prevent the center of the link from collapsing, and by referring to Fig. 1 it will be noted that this cross-bar has a general inclination back toward the end of the link or the end of the link formed by that end of the bar. The cross-bar in the preferred construction is somewhat in the shape of a letter **S**. By this formation several advantages are attained. First, the eye is prevented from slipping down on the cross-bar, and, secondly, inasmuch as the tendency of the cross-bar when the link is under strain is to unbend and slide through the eye it will be caused to strike the opposite or straight side of the link, and the latter will effectually arrest its movement, this being more especially the case, as strain on the link, in addition to having a tendency to unwind or unbend the ends, also has a tendency to cause the link to collapse, as it were—*i. e.*, to cause the two side portions at the center of the link to approach each other, and so destroy the strength and symmetry of the link, rendering it liable to crack and break at these points.

To overcome the tendency of the eye to unwrap and disengage itself from the cross-bar end, the end of that portion of the metal which is formed into the eye is brought around inside of the link beneath the side piece, forming somewhat more than a complete wrap, and, in addition, the eye itself is preferably bent down at a slight angle, as shown clearly in said Fig. 1, which construction, it is found, insures ample strength of the eye portion and does not add materially to the cost or difficulty of making the same.

It is obvious that it is not essential that the

cross-bar should be curved in the manner described, but, if desired, it may be left straight. Preferably, however, in every instance it is inclined backward, as shown in Fig. 2, wherein the cross-bar end C is straight and extends across the link at a slight angle to the opposite or straight side, against which it abuts. So, too, if desired, the end of the cross-bar C may be so united to the opposite side as to prevent any movement. This latter feature is shown in Fig. 3, wherein a recess or flattened place is formed in the side bar of the link and the end of the cross-bar seats in the recess so formed, or, if desired, the end of the cross-bar may be simply driven into the side piece and so seat itself. So, too, as shown in Fig. 4, the end of the cross-bar may be notched in addition to being seated in the side piece, whereby the cross-bar is held with greater security.

Having thus described my invention, what I claim as new is—

1. A link for chains constructed of rod or bar metal, one of the ends of the bar or rod being bent into a hook and extended back across the link in an inclined position to form an inclined cross bar and the opposite end of the bar or rod being united to the base of the hook or cross bar by an eye which encircles the latter, substantially as described.

2. A link for chains formed of rod or bar metal, one of the ends of the rod or bar being bent into substantially **S**-shape and extended across the link and abutted against the opposite side, the other end of the rod or bar being formed into an eye encircling the base of the **S**-shaped cross bar, said eye being given an inward inclination; substantially as described.

3. A link for chains formed of rod or bar metal, one of the ends of the rod or bar being bent into a hook and extended across the link and abutted against the opposite or straight side, the other end being formed into an eye which encircles the base of the hook or cross bar portion, the end of the cross bar being seated in the side piece against which it abuts, substantially as described.

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