

955,129.

I. A. BROWN.
WIRE CHAIN.
APPLICATION FILED JULY 22, 1909.

Patented Apr. 19, 1910.

Fig. 1

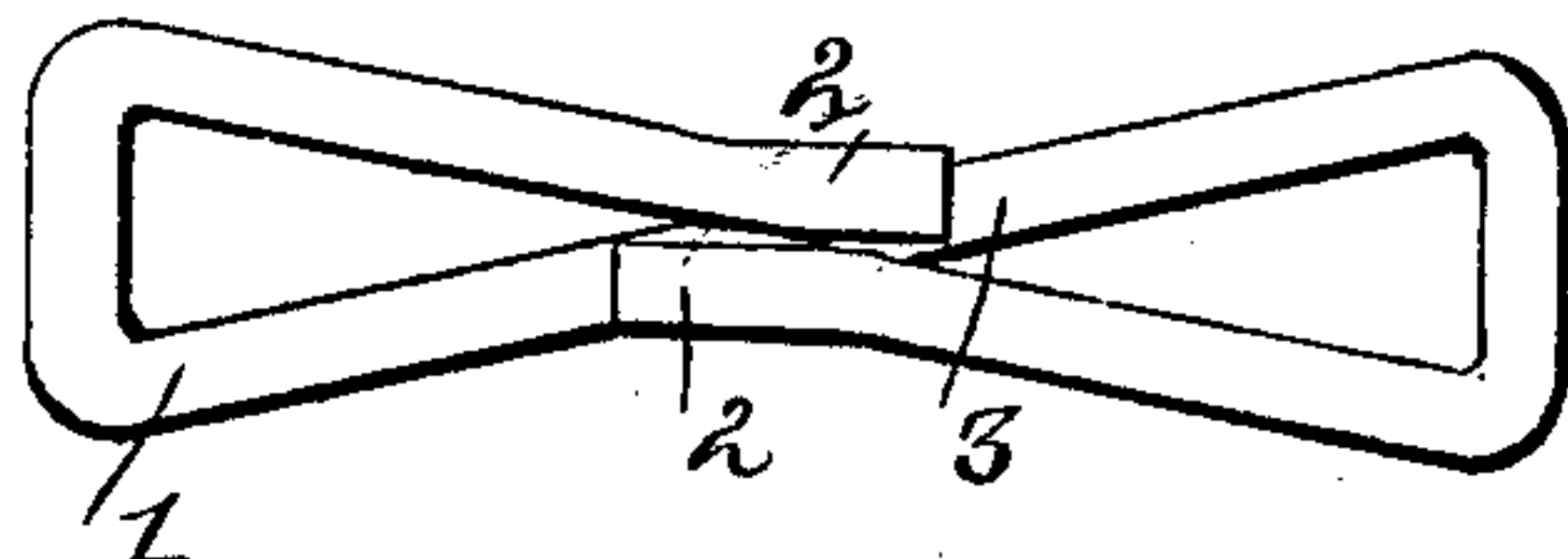


Fig. 2

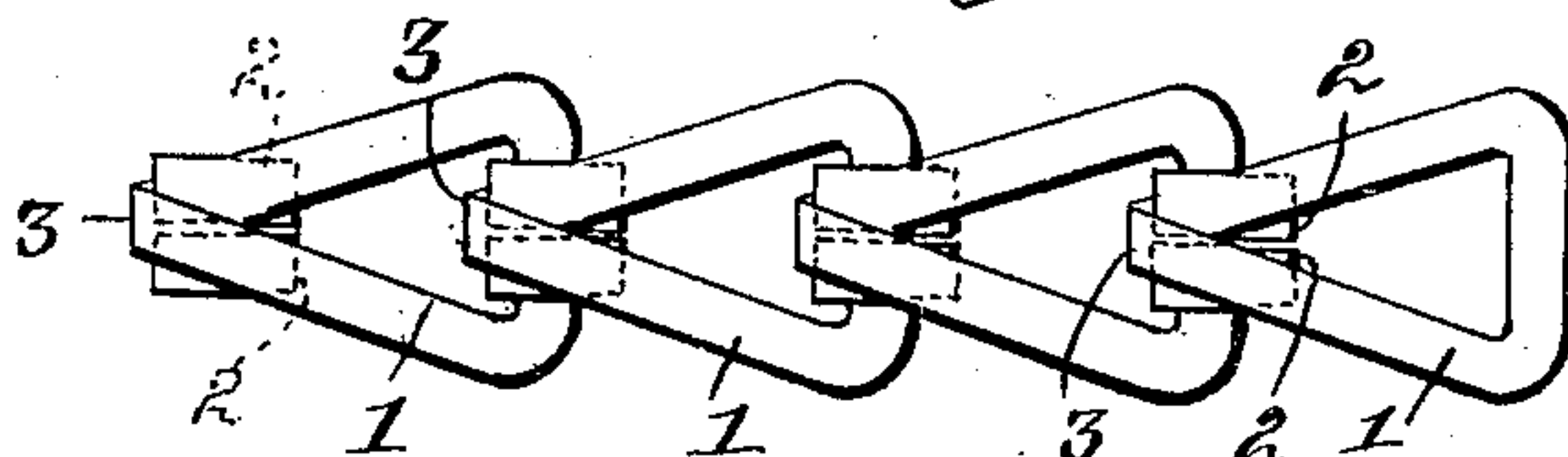


Fig. 3

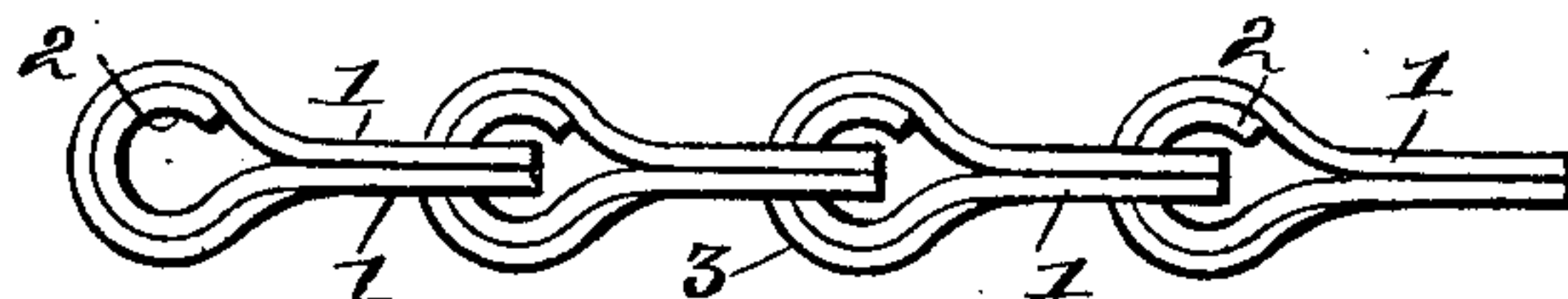


Fig. 4

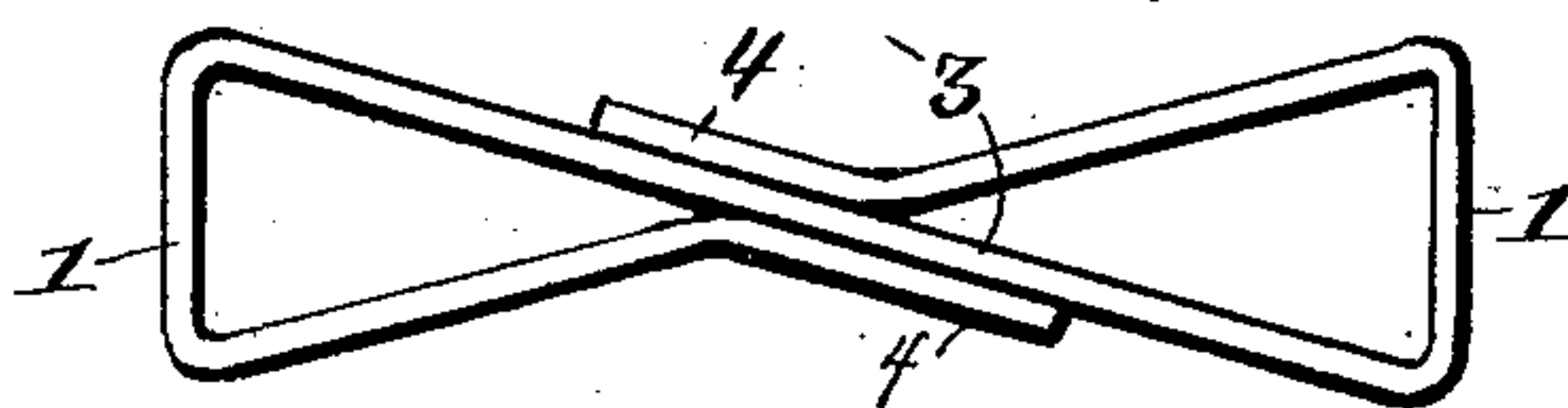


Fig. 5

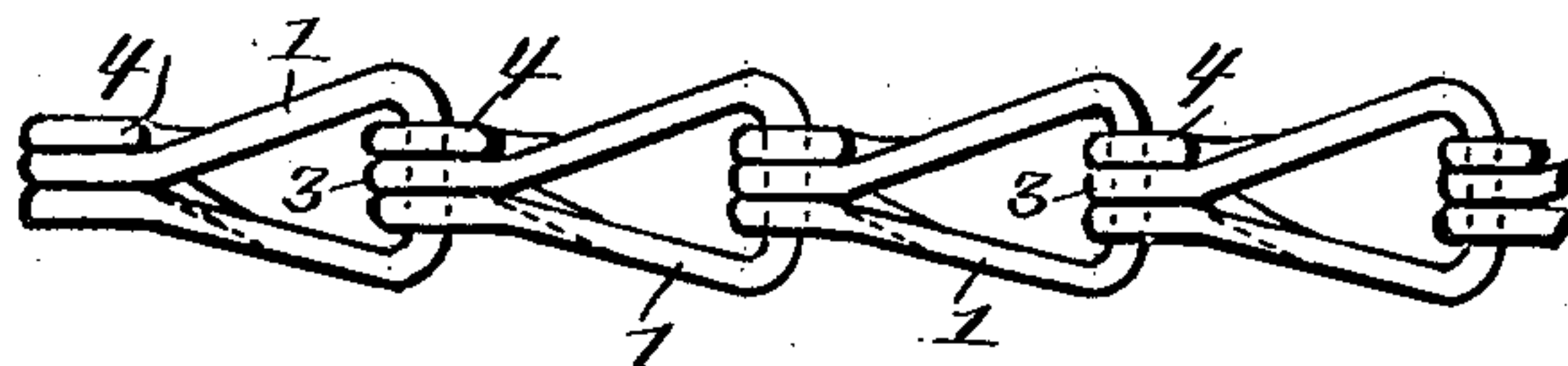


Fig. 6

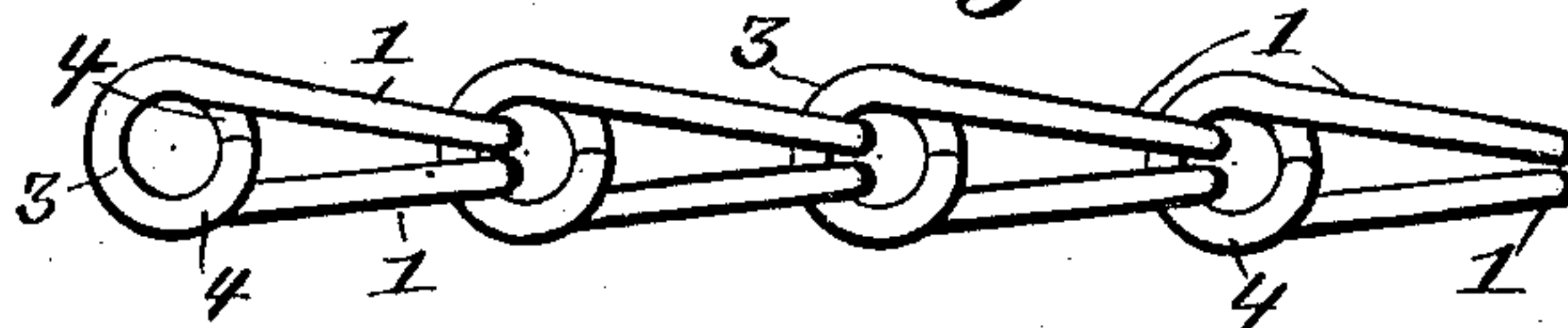
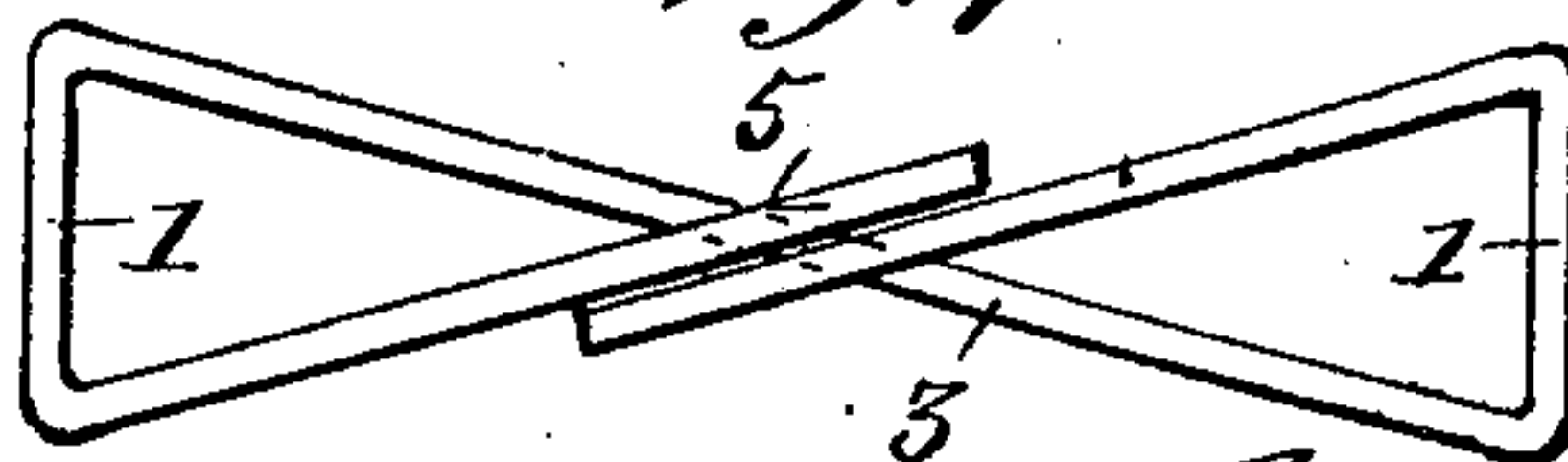


Fig. 7



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UNITED STATES PATENT OFFICE.

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WIRE CHAIN.

955,129.

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To all whom it may concern:

Be it known that I, IRVING A. BROWN, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Wire Chain, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The present invention is proposed as a substitute for the sheet metal chain extensively used for suspending window-weights and the like, and characterized by having its links formed from blanks of sheet metal with eyes at each end, each blank being thereupon doubled upon itself, so that the eyes thereof are brought into line with each other.

The object of the present invention is to construct the blanks, whereof such links are made, out of sections of wire instead of sheet metal, which latter involves considerable waste of material and obviously does not utilize such material to the best advantage in the production of a strong link.

To the accomplishment of this and related ends said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but several of the various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—Figure 1 illustrates a blank for a link of the kind in hand constructed out of a section of wire in accordance with my invention; Fig. 2 is a plan view of a series of such links completed and joined into a chain; Fig. 3 is a side elevation of such series; Fig. 4 is a view of a modified construction of link; Figs. 5 and 6 are respectively, a plan view and side elevation of a series of such modified links, completed and joined into a chain; and Fig. 7 illustrates yet another modified form of link.

I am aware that it has heretofore been proposed to manufacture chain, of the general character above referred to, out of wire instead of out of sheet metal blanks, but so far as I am advised no successful form of

chain has thus far been devised, the links of such chain either requiring to be reinforced by metal clips or the like, or else being exposed to the liability of pulling apart, which of course, is a very serious objection. The present improvements, hence, are directed more particularly to such an arrangement or conformation of the wire section entering into the construction of the link, as will dispose the material in the best possible fashion to resist tensile strain, and at the same time securely lock the ends of the section whereof the link is formed, without requiring the use of extraneous means of any kind, the application of such means being too difficult and expensive to render this mode of construction practicable.

Since the blank whereof the link is formed most clearly reveals the improvements in question, attention is directed first to Figs. 1 and 4, from reference to which it will be seen that the section of wire whereof the link is formed is doubled over to form two loops 1, 1 lying in the same plane, the ends 2, 2 of the section overlapping intermediately of such loops, and the portion 3 of the section that connects such loops crossing from one side of the one loop to the other side of the other. In the form illustrated in the first figure just named, a flat or angular strand of wire is shown as being utilized, and the overlapping ends 2, 2 of the section extend past each other, side by side; while in the second form a round wire is employed, and such ends here designated 4, 4 lie one on each side of the connecting portion 3 that crosses, as stated, from one side of one loop to the other side of the other. In forming the complete link, the blank of either form is simply doubled over, so as to superpose the two loops 1, 1 and form an eye of the intermediate portion of the blank. In the case of the first form of blank, such eye, Figs. 2 and 3 will be seen to comprise the ends of the section which, lying side by side, are now bent to form the inner bearing surface of the eye, while passing around outside of such ends, and at the same time across from one side to the other, is the aforesaid intermediate portion of the wire section in the completed chain. It will thus be seen that all the wear in the case of such eye is sustained by the two bent ends of the section, which latter are securely held against displacement or stretching by the intermediate portion which passes around the same. In

the case of the modified construction of blank of Fig. 4, the terminals 4, 4 of the section do not lie within such intermediate connecting portion of the wire section, but
 5 one on each side thereof, being bent, however, in the same fashion as before, to conform with the curvature of the eye. They are thus adapted to receive a considerable burden of the wear imposed upon such eye
 10 in the completed chain, while at the same time, the intermediate section functions as before, to prevent any undue strain pulling out the eye entirely.

The modification shown in the construction of the link blank of Fig. 7, lies in the
 15 disposition of the ends 5 of the constituent wire section, of round cross-section here as in the form preceding; such ends, instead of lying one on each side of the connecting portion 3, extend past each other but in a relative position the reverse of that of Fig. 1.
 20 The completed link, when made of a blank of this form will obviously possess all the advantages of the preceding forms.

25 Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated
 30 means be employed.

I therefore particularly point out and distinctly claim as my invention:—

35 1. A chain link blank comprising a section of wire doubled over to form two loops lying in the same plane, the ends of said section overlapping intermediately of said loops.

40 2. A chain link blank comprising a section of wire doubled over to form two loops lying in the same plane, the ends of said

section overlapping intermediately of such loops, and the portion of said section that connects such loops crossing from one side of one loop to the other side of the other, 45 substantially as described.

3. A chain link blank comprising a section of wire doubled over to form two loops lying in the same plane, the ends of said section extending past each other side by side 50 intermediately of such loops, and the portion of said section that connects such loops crossing from one side of one loop to the opposite side of the other, substantially as described.

4. A link for wire chain comprising a section of wire doubled over and bent to form adjacent twin loops at one end of said link, the ends of said section overlapping and being bent to form an eye at the other end 60 of said link and the portion of said section that connects such loops crossing from one side of one loop to the opposite side of the other in passing around such eye, substantially as described.

5. A link for wire chain comprising a section of wire doubled over and bent to form adjacent twin loops at one end of said link, the ends of said section extending past each other and lying side by side, such ends being 70 bent to form an eye at the other end of said link, and the portion of said section that connects such loops passing around the outside of such ends and crossing from one side of one loop to the opposite side of the other, 75 substantially as described.

Signed by me this 19th day of July, 1909.

IRVING A. BROWN.

Attested by—

ANNA L. GILL,
 JNO. F. OBERLIN.