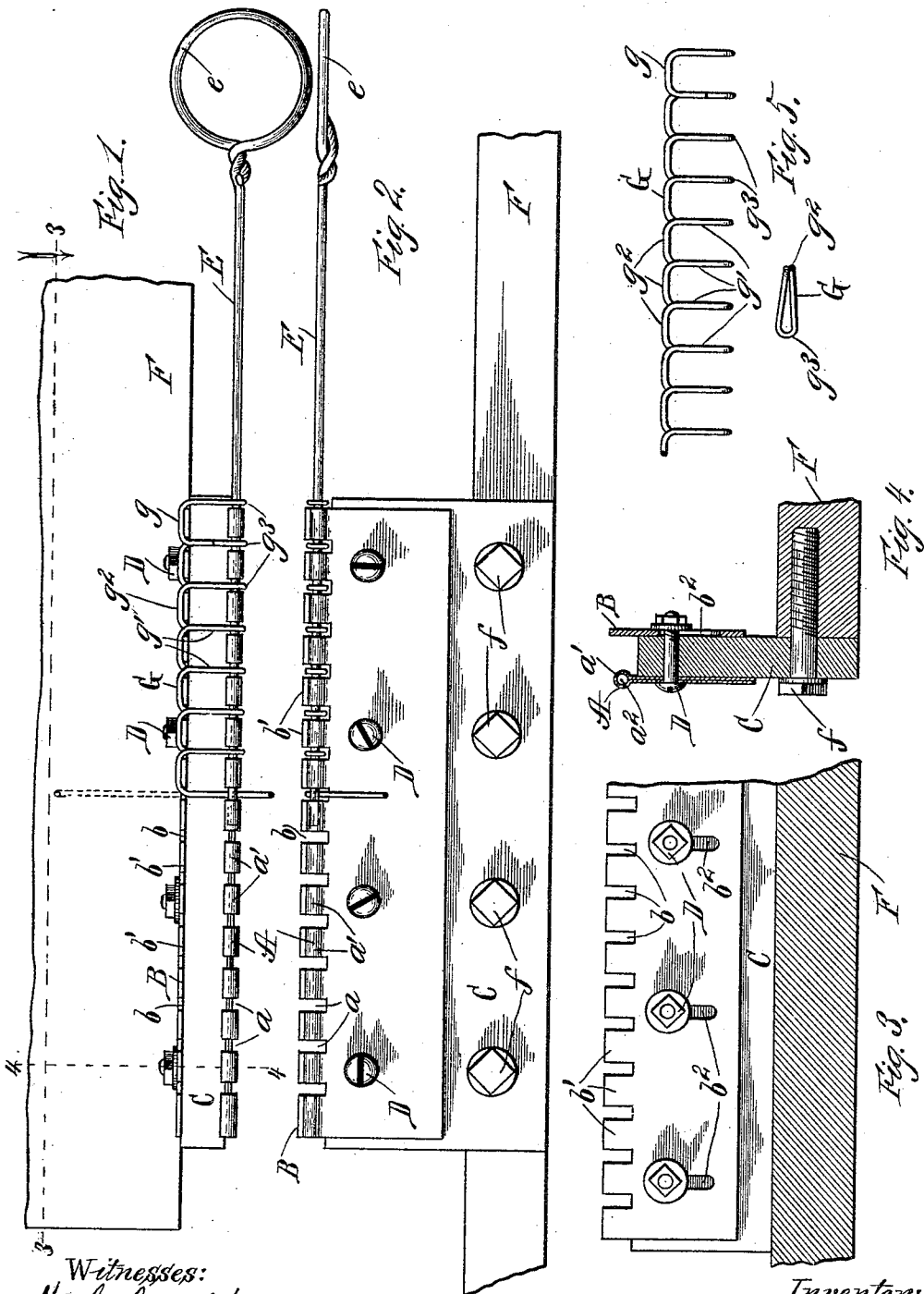


(No Model.)

E. PARO.
DEVICE FOR CRIMPING WIRE LACING.

No. 529,303.

Patented Nov. 13, 1894.



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UNITED STATES PATENT OFFICE.

EDWARD PARO, OF CHICAGO, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO CARL C. KNAPSTEIN AND WILLIAM L. NIEHORSTER, OF SAME PLACE.

DEVICE FOR CRIMPING WIRE LACING.

SPECIFICATION forming part of Letters Patent No. 529,303, dated November 13, 1894.

Application filed April 7, 1894. Serial No. 506,718. (No model.)

To all whom it may concern:

Be it known that I, EDWARD PARO, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Devices for Crimping Wire Lacing, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a plan view of a crimping device embodying my invention, attached to a suitable support; Fig. 2, a front elevation of the same; Fig. 3, a rear elevation of a portion of the same with the support in section
15 on the line 3. 3 of Fig. 1; Fig. 4, a vertical cross-section on the line 4. 4 of Fig. 1; and Fig. 5, a plan view and cross-section of a piece of finished wire lacing.

My invention relates to means for crimping
20 wire lacing, which is a well known article of manufacture intended for use in securing heavy belts of leather, rubber, or other suitable thick, heavy material, and for other like purposes in fastening together sections of
25 thick, heavy fabrics.

The invention consists in crimping plates provided with notched edges, one of which
30 edges is also looped to form apertures in the sections, and a rod adapted to be inserted in and passed through this series of apertures.

I will describe in detail the construction of a device in which I have embodied my invention in a practical way and also the mode of operation in forming a wire lacing thereon,
35 and will then point out more definitely in claims the particular improvements which I believe to be new and wish to secure by Letters Patent.

In the drawings, A, represents what may be
40 called the front plate, and B, the rear or back plate of the crimper. These plates are of some suitable sheet metal and of a length equal to the longest wire lacing which it is customary to make. The front plate, A, has
45 one edge notched, a series of shallow notches, a , being cut therein at regular intervals, corresponding substantially with the distance
50 desired between the bent loops of the lacing. The edge sections, a' , between these notches

edges, so as to form a circular aperture, a^2 , running through each, and as these sections stand in line with each other these apertures will form a sectional opening or aperture extending the length of the plate. These apertures along the sectional edge of this plate may be formed by simply bending or turning a slight portion of each section, or in any other suitable way. In the drawings I have shown a construction for readily making this form which I prefer, though it is not an essential feature of the invention.

The construction referred to is illustrated in Fig. 4 of the drawings, in which it will be seen that the plate, A, is composed of two leaves or thicknesses, formed by doubling the blank first cut out upon itself, and making the aperture along the line of the bend, which may be effected by bending and forming the blank over a pattern rod of suitable size and shape, or forcing such a pattern rod in between the plates at the bend, which would produce the same result.

The plate, B, is preferably somewhat wider than the plate, A, and is a single plate—that is, there is but one layer or thickness. This plate at one edge is provided with a series of shallow notches b , which are similar to and corresponding with the notches a in the plate A, this plate B being called, for convenience in distinction, the back plate. The edge of this plate, B, is, therefore, divided into a series of sections, b' , corresponding to the sections, a' , of the front plate, but these sections have no bend or aperture formed therein but terminate in a perfectly straight edge, as seen in Figs. 3 and 4.

A thick, strong, block or strip of wood, C, is provided, of a little greater length than the two plates mentioned above and considerably greater in width. This block forms the base or body of the crimper, and the plates, A and B, are secured to the opposite sides thereof by means of bolts, D, passing through the block and suitable apertures in the respective plates, and secured in place by nuts or other suitable fastening device, as seen in Fig. 4. The bolt holes in the front plate are circular and simply large enough to permit the bolt to readily pass through. The cor-

responding apertures in the back plate may also be of the same construction, in which case the two plates will be secured to the body in a fixed or unadjustable position; but for a purpose hereinafter described, I prefer to make the bolt holes in the back plate elongated openings or slots, b^2 , running transversely of the plate, as seen in Figs. 3 and 4, which construction provides for the vertical adjustment of the plate, B, upon the block and with reference to the front plate, A, the object of which will be stated presently. The thickness of the block or body is to be a little less than the length of the loop sections of wire lacing of the lowest or smallest size—that is with the smallest loops, so that loops of the desired length will be formed by bending around the sections of the notched plates, as will hereinafter be described; and when the back plate is made adjustable, as explained above, this is the relation of the plate edges intended when said back plate is fixed at its lowest position. A rod, E, is provided of such size as to pass readily through the apertures in the upper edge of the front plate, A, so that this rod may be inserted at one end and thrust from one edge section to another entirely through the length of the plate. For convenience in working this rod is provided at one end with a loop or handle, e

The crimper for work must be securely fastened to or held in some suitable support. In the drawings the crimper is shown fastened to the edge of a bed or table, F, by means of screw bolts, f , passing through the lower edge of the block below the plates thereon into the edge of the table, as seen in Fig. 4. When thus secured to such a support, obviously the crimper will be held firmly in a fixed position. The same result may be obtained in any other suitable way—for instance, the crimper may be placed in a vise and secured therein in the usual manner. In any case it is desirable to have the crimper detachable from its support, so that it may be removed and laid away when not in use.

In operation the crimper is secured in a fixed position to some suitable support, as suggested above, and with the plate, A, standing in front, as seen in Figs. 1 and 2. A wire, G, of the size desired for the lacing is then taken by the operator or attendant, who places one end, g , of the wire in the first notch of the back plate at one end thereof, as seen in Fig. 1, in which the right-hand end is selected. The wire is then carried around outside of the first section in said plate, as seen in Fig. 1, and then bent inward and carried across the block, outside of the plate ends, and just beyond the front plate. The rod, E, is then inserted in the first section of the front plate, being passed over the wire, and the latter is then bent back over the rod and across the block to the rear side thereof, and then again around the first section of the back plate, the direction of the wire in this course being par-

allel to the path first described, but in the opposite direction. The wire is then bent at right angles again and carried through the first notch in the back plate, across the block to and through the first notch in the front plate, when the rod, E, is pushed forward a step, passing over the wire into the aperture in the second section of the front plate, when the wire is again bent up over the rod and carried back again to the first notch in the back plate, and then bent around outside of the second section of the back plate into the second notch in the latter, and thence across the block to the corresponding notch in the front plate, where the same operation of the rod is performed and the same backward bend made; and so on until the opposite end of the crimping plates is reached, or so much thereof has been used as required for the length of wire lacing desired. There will thus be formed a lacing of ordinary form in the crimper, consisting of a series of loops, g' , connected at one end by the continuous wire sections, g^2 , but with an open space between the other or loop ends, these ends being formed into a series of bends or eyes, g^3 , around the sliding pattern rod, E, as seen in Figs. 1 and 2. The rod is then drawn out from the front plate when, of course, the lacing is no longer secured to the crimper and may be removed for use.

Now, when the two crimping plates are both secured to the block in one unchangeable position, obviously a lacing can be made with only one length of loop; but for different purposes different lengths of loop are desired. In order to adapt the crimper to the making of lacing with different lengths of loop the back plate is made adjustable vertically, as already described. It is evident that, if the back plate is raised vertically from its position shown in Figs. 3 and 4, it will increase the distance between the notches and edge sections thereon and the corresponding parts of the front plate, and so the result in practical use would be a lengthening of cross-loops of the lacing, to the limit provided by the lower end of the slots in said back plate. This is the only object of making the back plate adjustable as described, and if it is desired to use the crimper for one size only, there is no occasion for providing the plate with slots.

In details of mechanical construction, obviously changes may be made without departing from the general plan of my improvement, and I wish to be understood as contemplating such mechanical changes in practice.

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

1. In a wire-lacing crimper, a front plate provided with a series of notches in its upper edge and a series of apertures on the edge sections thus produced, in combination with a back plate provided with a series of notches in one edge corresponding to those in the

front plate, and a pattern rod adapted to be thrust through the said apertures in the front plate, substantially as described.

2. In a wire-lacing crimper, a block or strip C, in combination with a front plate A provided with a series of notches a and circular apertures a^2 at the upper edge thereof and secured to one side of the block, a back plate B provided with a series of corresponding notches b at its upper edge and secured to the opposite side of said block, and a pattern rod E adapted to slide back and forth in the said apertures in the front plate, substantially as described.

3. In a wire-lacing crimper, a block or strip C, in combination with a front plate A secured to one side thereof, notched at its upper edge, and with the sections of said edge bent to

form circular apertures a^2 , a back plate B provided with edge notches b , and a sliding pattern rod E, substantially as described.

4. In a wire-lacing crimper, a supporting block or strip, in combination with a front plate secured to one side thereof and provided at its upper edge with a series of notches and a series of apertures, and a back plate B provided with a corresponding series of edge notches and with transverse slots b^2 , whereby said plate may be secured to the opposite side of the support in different vertical positions, substantially as described.

EDWARD PARO.

Witnesses:

LE OTIE LEIB,
W. C. CORLIES.