

UNITED STATES PATENT OFFICE.

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WIRE-STRETCHER.

No. 803,052.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed August 13, 1904. Serial No. 220,617.

To all whom it may concern:

Be it known that I, HENRY L. FERRIS, a citizen of the United States of America, residing at Harvard, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Wire-Stretchers, of which the following is a specification.

My invention relates to certain improvements in wire-stretchers designed to produce a compact, cheap, and efficient device of this sort, having certain advantages in operation which will appear in the description thereof and the essential features of which will be pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a plan of my improved wire-stretcher shown as attached to a piece of wire at each end. Fig. 2 is a side elevation, the view being taken from the side of the device which is at the top of Fig. 1. Fig. 3 is a transverse section in the plane 3 3 of Fig. 1 looking from right to left and omitting the wire-clamping dog. Fig. 4 is a similar section in the plane 4 4 of the same figure, and Fig. 5 is a vertical section in the plane 5 5 of Fig. 1 looking from left to right.

Referring to the drawings, A is a guide-rod, having an open eye a at one end to be hooked over the wire, and a collar a' , provided with opposite hooks a^2 a^3 , by means of which it is secured to a chain B, provided with a wire-clamp C. At d a lever D is pivoted between its ends to the guide-rod, and this lever carries upon opposite sides of said pivot the pivoted ends e e' of two links E E'. The opposite ends e^2 e^3 are pivoted, respectively, to the outer ends f f' of the wire-clamping dogs F F'. These dogs are pivoted between their ends at f^2 f^3 to slides G G', running on the guide-rod A. The slides are provided with laterally-extending jaws g g' , opposed to which are the movable jaws f^4 f^5 upon the free ends of the dogs. The slides are also provided with guiding-arms g^2 g^3 , extending through the lever D and running in collars H H', pivoted in the lever. On the guide-arms between the collars and the slides are coiled springs I I'. The coiled spring I' bears directly upon the slide G'; but the spring I bears upon a collar or shoulder g^4 . The tension of these springs is such as to crowd the slides away from the lever, the result of which is to close the jaws of the clamp upon the wire.

Each of the slides also has a handle g^5 , by means of which it may be crowded toward the lever to open the jaws of the clamp.

In operation the stretcher is placed upon the wire, as shown in Fig. 1, and the handle moved back and forth, drawing the wire alternately through the two jaws in the ordinary manner. It should be noticed that inasmuch as the guiding-collars for the guide-arms of the slide are nearer the central pivot of the lever than the points where the links are pivoted the motion of the lever in the direction which causes either one of the clamps to draw the wire along causes the guide-arm upon that slide to slide through the collar and shorten the spring, increasing the tension of the latter at the time when tension is most needed. On the other hand, the movement of the lever which slides either dog along the wire also relieves the tension upon the coiled spring controlling that dog and makes the sliding operation that much easier. Thus, looking at Fig. 1 and considering the lower dog, it will be seen that the movement of the handle at the bottom toward the right will draw the dog and slide along at the rate at which the pivot end e' of the link E' is moving. The pivoted collar H', through which the guide-arm g^3 runs, being nearer the center of movement, moves less rapidly, causing the guiding-arm to slide through the collar toward the right and shorten the spring. The reverse movement evidently has the opposite effect, and the same is true of the parts upon the other side of the guide-rod A, except that relative movements of the parts are in the opposite direction.

Certain of the specific features herein shown are claimed in my application for patent on wire-stretchers filed July 11, 1904, Serial No. 165,037, and by the absence of claims in this case I do not intend to disclaim the same.

I recognize the fact that my invention is more or less independent of the specific details shown and described, and hence I do not limit myself to the latter.

I claim as new and desire to secure by Letters Patent—

1. The combination with a guide-rod and a lever pivoted thereto, of a pair of slides running on the guide-rod, arms on the slides guided in the lever, dogs pivoted to the slides and adapted to coöperate therewith to grasp

the wire, and links pivoted respectively at one end to the dogs and at the other end to the lever.

2. The combination with a guide-rod, of a lever pivoted between its ends to said rod, slides running on the guide-rod and having arms guided in the lever upon opposite sides thereof, dogs pivoted to the slides, and links connecting the dog with the lever beyond the guides for the guide-arms.

3. The combination with a guide-rod, of a lever pivoted between its ends thereto, slides running on the guide-rod having arms guided longitudinally in the lever, springs on said arms crowding the slides away from the lever, dogs pivoted on the slides and links connecting the dogs with the lever outside of the arm-guides.

4. The combination with a guide-rod, of a lever pivoted between its ends thereto, collars pivoted to the lever upon opposite sides of its central pivot, slides running on the guide-rod having arms longitudinally guided

in the collars, springs on said arms bearing against said collars, dogs pivoted to the slides and links connecting the dogs with the lever outside of said arms.

5. The combination with a guide-rod, of a lever pivoted between its ends to said rod, collars pivoted to said lever upon opposite sides of the pivot to the guide-rod, slides running on the guide-rod having laterally-projecting handles and longitudinally-extending arms guided in said collars, springs on the arms bearing against said collars, dogs pivoted to the slides, and links connecting the dogs with the lever outside of said collars.

In witness whereof I have signed the above application for Letters Patent at Harvard, in the county of McHenry and State of Illinois, this 3d day of August, A. D, 1904.

HENRY L. FERRIS.

Witnesses:

BLAKE B. BELL,
W. S. DODGE.