





# UNITED STATES PATENT OFFICE.

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## WIRE-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 770,908, dated September 27, 1904.

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*To all whom it may concern:*

Be it known that I, WARNER C. JULIAN, a citizen of the United States, residing at Enid, in the county of Garfield, Oklahoma Territory, have invented certain new and useful Improvements in Wire-Tighteners, of which the following is a specification.

This invention has relation to tools for use in the construction of wire fences, the implement being of the variety designed for drawing the fence or runner wires about opposite sides of the post preliminary to binding or otherwise securing the fence-wire.

An essential feature of the invention is the provision of a tool of the type aforesaid in which the draft-bars will normally occupy a position for engagement with the runner-wire when the operating-lever is turned to a starting position, thereby greatly facilitating the work and reducing the annoyance and inconvenience of manipulation to the smallest amount possible.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a wire fence, showing the application of the invention. Fig. 2 is a perspective view of the tool on a larger scale. Fig. 3 is a plan view of the crank-shaft and draft-bars, the end portion of one of the draft-bars being broken away and the fulcrum-arch and operating-lever being in section. Fig. 4 is a detail perspective view of an end portion of the crank-shaft and draft-bar on a larger scale. Fig. 5 is a perspective view of the parts shown in Fig. 4, illustrating their normal position.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The tool or implement comprises the ful-

crum-arch 1, which consists, essentially, of a longitudinally-curved piece having its end portions of tapering form and its central portion transversely apertured and shaped to approximate a hub in which the crank-shaft 2 is journaled. By having the end portions of the fulcrum-arch tapered the tool is adapted to tilt readily upon the points to conform to and equalize the strain upon opposite draft-bars.

The crank-shaft 2 is journaled midway of its ends to the fulcrum-arch 1, and its end portions are reduced, as shown at 3, to form journals, upon which are pivotally mounted the draft-bars 4. The shoulder 5, formed at the inner end of each journal 3, constitutes a stop to limit the inward movement of the draft-bars. A pin or lug 6 projects from each end portion of the crank-shaft adjacent the shoulder 5 and constitutes a stop to properly position the draft-bars with reference to the crank-shaft, so as to insure said draft-bars occupying an approximately horizontal position when the operating-lever is turned upward, as indicated in Fig. 2, which is the starting or normal position thereof. The distance of the center of the journals 3 from the axis of the crank-shaft determines the throw of the draft-bar and may vary in different tools according to the nature of the work.

Each draft-bar 4 is provided with a series of notches 7, which are inclined so as to retain the fence-wire in place and prevent accidental displacement. The notched edges or sides of the draft-bars preferably face upward, so as to facilitate the engagement of the draft-bars with the fence-wires in the operation of the tool. A pin or lug 8 projects laterally from the inner side of each draft-bar adjacent to the opening therein for reception of the journal 3 and constitutes a stop to engage with the corresponding stop 6, so as to limit the movement of the draft-bar and hold it in an approximately horizontal position when the operating-lever is in a normal or starting position. A coil-spring 9 is mounted upon each journal 3, and one end is connected with the draft-bar and the other end with the journal, and these springs are normally under tension and serve to hold the



stops 8 in contact with the stops 6. By preference opposite end portions of the springs 9 are passed through openings in the respective journals and draft-bars, as indicated most clearly in Figs. 4 and 5.

The operating-lever 10 is bifurcated or forked at its inner end, as shown at 11, so as to receive and embrace opposite sides of the fulcrum-arch 1. The forked members terminate in eyes 12, which receive the crank-shaft 2 and are secured thereto by means of set-screws 13, whereby the operating-lever and crank-shaft turn as one part, while at the same time longitudinal displacement of the crank-shaft in the fulcrum-arch is prevented. A pin 14 extends across the space formed between the forked members and serves to limit the movement of the operating-lever with reference to the fulcrum-arch.

When the component parts of the tool are assembled substantially as illustrated, the plane of the crank-shaft is approximately at a right angle to the operating-lever, and when the latter is turned upward and occupies a vertical position the crank-arms or portions of the crank-shaft project inward toward the plane of the fence, whereby when the fence-wire 15 is engaged with corresponding notches of the draft-bars and the operating-lever is turned downward into a pendent position, as shown in Fig. 1, said crank-arms or portions of the crank-shaft extend away from the plane of the fence, and the fence-wire 15 is drawn around opposite sides of the post 16, as indicated most clearly in Fig. 1. When the parts are in the position shown in Fig. 1, the journals 3, axis of the crank-shaft, and the points of engagement of the draft-bars with the fence-wire 15 are approximately in the same straight plane, so as to form a dead-center, thereby obviating the necessity of providing means for holding the operating-lever 10 in the pendent position during the fastening or binding of the fence-wire. When turning the operating-lever from the upright to a pendent position, the crank-shaft receives a half-revolution and the springs 9 are partly wound, the stops 6 moving away from the stops 8. After the fence-wire has been bound or fastened and the draft-bars are disengaged therefrom the springs 9 regaining themselves return the draft-bars to

a normal position, which is determined by the stops 8 coming in contact with the stops 6, and upon moving the operating-lever from a pendent into an upright position the tool is again set for a repetition of the operation just described, thereby obviating the necessity of manipulating the draft-bars to bring them into position to receive the fence-wire in subsequent operations.

Having thus described the invention, what is claimed as new is—

1. In a wire-fence tool of the character described, the combination of a fulcrum-arch, a crank-shaft journaled thereto, an operating-lever connected to the crank-shaft, draft-bars pivotally connected with the crank portions of said crank-shaft, and springs between the draft-bars and crank-shaft to hold the draft-bars in a given relative position, substantially as described.

2. In a wire-fence tool of the character described, the combination of a fulcrum-arch, a crank-shaft journaled thereto, an operating-lever connected to the crank-shaft, draft-bars pivotally connected with the crank portions of said crank-shaft, springs between the draft-bars and crank-shaft to hold the draft-bars in a given relative position, and coöperating stops between the draft-bars and crank-shaft to limit the draft-bars in their movement in one direction, substantially as specified.

3. In a wire-fence tool of the character described, the combination of a fulcrum-arch, a crank-shaft journaled thereto and having journals at its ends and shoulders at the inner ends of said journals, an operating-lever connected with the crank-shaft for operation therewith, draft-bars mounted upon the journals at the ends of the crank-shaft and having stops to engage with the stops near the extremities of said crank-shaft, and coil-springs mounted upon the journals and secured at one end to said journals and at the opposite end to the draft-bars, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WARNER C. JULIAN. [L. s.]

Witnesses:

J. W. CLEVINGER,  
P. S. ROBBINS.