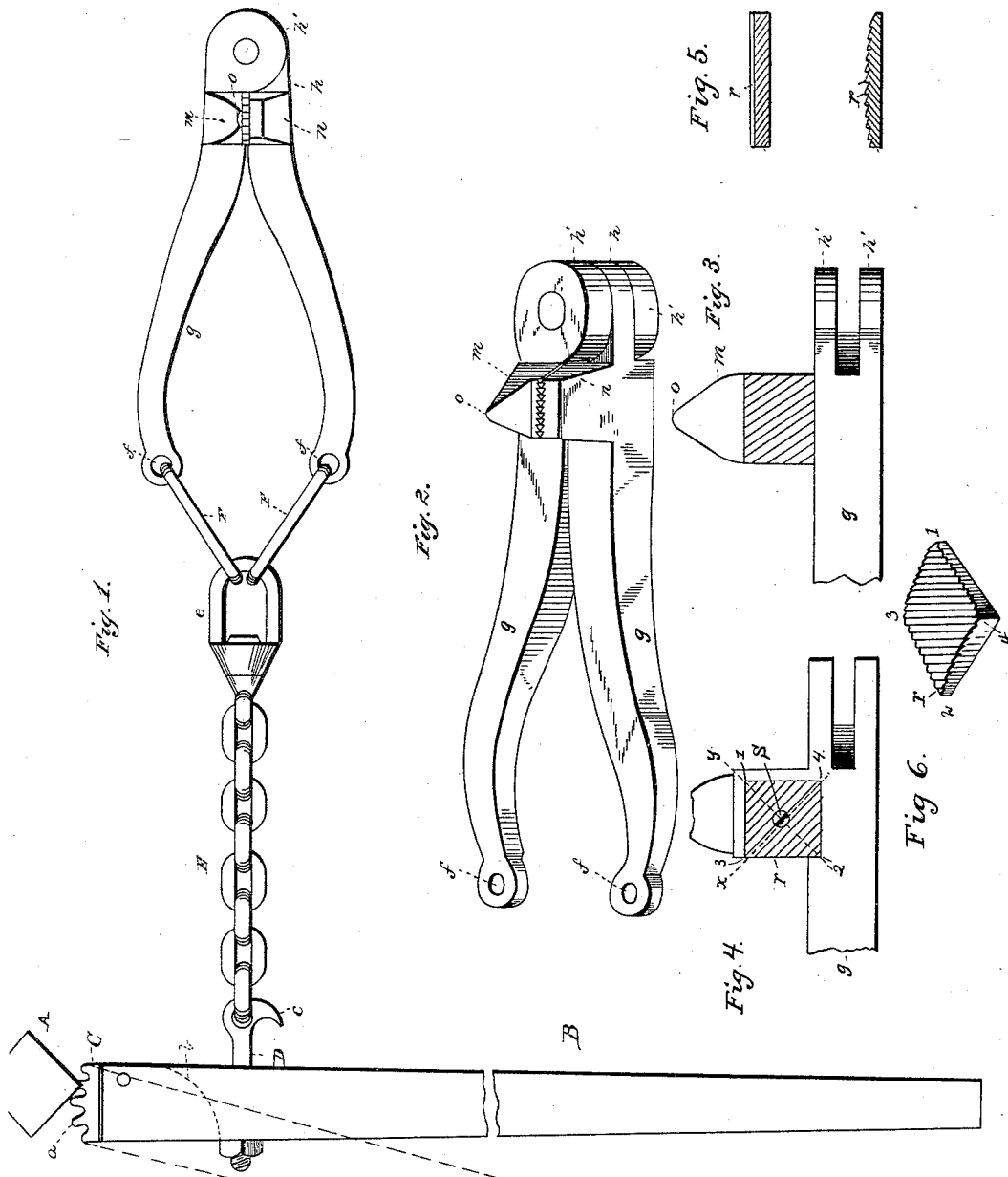


(No Model.)

F. J. TOWNSEND.
WIRE STRETCHER.

No. 398,759.

Patented Feb. 26, 1889.



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FREDERICK J. TOWNSEND, OF PAINTED POST, NEW YORK.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 398,759, dated February 26, 1889.

Application filed May 15, 1888. Serial No. 274,013. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. TOWNSEND, a citizen of the United States, residing at Painted Post, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Wire-Stretchers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of implements known as "wire-stretchers," which are employed in constructing wire fences and in stretching wire for other purposes, and it has for its object to provide a simple, durable, and inexpensive device of this nature, which may be easily and readily operated by one man, which will not bend the wire, and which increases its grip on the same in proportion as the strain is increased, thus obviating liability of slipping; and it consists of the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view showing the device in operative position; Fig. 2, a perspective view of the gripping-tongs; Fig. 3, a plan view of one of the jaws; Fig. 4, a detail view showing the method of securing the corrugated plate to the jaw; Fig. 5, two sectional views of the corrugated plate, taken on the lines *x* and *y*, Fig. 4; and Fig. 6, a perspective view of the corrugated plate.

Similar letters refer to similar parts throughout all the views.

A represents the top of a fence-post, and B a lever, in one end of which a metal plate, C, is inserted, (which will be hereinafter denominated a "nose-iron,") having one end curved on the arc of a circle and formed with teeth *a*, and its other end, *b*, also curved or formed on the arc of a circle, but from a different center or axis, as shown in dotted lines, Fig. 1, the end of the lever being slotted by a circular saw, so as to leave the bottom of the slot rounded to correspond with the end of the nose-iron C. By this construction the nose-iron may be held firmly in place against great strain by a rivet or bolt passed through the

lever and iron at the short side of the slot, owing to the fact that most of the strain will come against the curved bottom of the slot and the curved end of the nose-iron, the device being always used in the position shown, with the gripping-tongs attached on that side of the lever on which the slot is shortest. I do not desire, however, to be limited to this exact construction, as it is evident that substantially the same result will be accomplished if the end of the nose-iron is inclined or cut off diagonally from side to side and the bottom of the slot formed as above described, and it may be necessary to use more than one bolt or rivet. The object of providing the nose-iron is to prevent the wear of the lever, and by forming the teeth on said iron it is prevented from slipping on the post.

At a suitable point in lever B, near the enlarged end of the same, so as to secure the proper purchase when in use, a bolt or staple, D, having a thread formed on one end, is passed through from side to side and firmly held in place by a nut run on the same. The other end of said staple is enlarged and perforated, forming an eye, *d*, and also has a hook, *c*, formed thereon.

E represents a chain, one end of which is connected with eye *d* and the other carries a swivel-link, *e*. To the swivel two elongated links, F, are attached, and also to the eyes *f*, formed in the ends of the handles *g* of the gripping-tongs, the links F being sufficiently large to permit the handles to be widely separated. The tongs are pivoted together by forming a tongue, *h*, on the end of one of them and inserting it between the cheeks *h'* formed on the end of the other, and then passing a pin through a perforation in cheeks and tongue, though I may, if found convenient or desirable, have but one cheek and tongue and pivot them together.

The grasping-jaws *m n* of the tongs are formed on the sides of the handles just back of their pivotal point and project laterally therefrom. The jaw *m* extends outwardly beyond the end of jaw *n* and tapers gradually from all sides to a blunt point, *o*, the taper on the front or face side commencing from the end of jaw *n*.

The meeting faces of the jaws are corrugated, the corrugations trending backward at an acute angle to the tongs, as shown in Figs. 3 and 4, so that they will hold the wire firmly and prevent its slipping from between them when the strain is increased. I find that when the corrugations are formed so as to trend forward at an acute angle, or when they are formed at right angles to the tongs, the wire will slip out of the grasp of the jaws as the strain is increased; but with them arranged as described the wire will slip deeper into the jaws with increase of strain instead of slipping out. The tongs in operation do not draw exactly straight, as the jaws are on the side of the same, and the tendency of the wire to slip out is greatly increased with the corrugations arranged to trend forward or at right angles.

The object in forming the jaw *m* as described is to enable the implement to be readily used with one hand, the blunt point *o* of the jaw being easily inserted beneath the wire after the same is strung out to pick it off the ground and permit it to drop between the corrugated faces. In Fig. 3 the corrugations are shown as formed on the jaw itself; but they may be formed on a separate plate, *r*, as shown in Figs. 4 and 5, and secured in a recess formed in the jaw by a set-screw, *s*, passing through a countersunk opening formed in the plate and into the jaw.

The recess, as clearly shown in Fig. 4, extends into the handles of the tongs a slight distance, and has walls on all of its sides except the rear side, so that the plate, which stands slightly above the face of the jaw, will have ample support where it is needed when the device is in use, and be just as firm as though forming a part of the jaw itself. The advantage of having the plates separate from the jaw is that in case of wear or breakage they may be removed and others substituted with small expense as compared to the cost of an entire new tongs.

The upper surfaces of the plates, or the jaws if the plates are not used, are crowning or formed on a slight arc from corner to corner, as shown best in Fig. 6, in which it will be seen that the plate "crowns" or curves from one corner to the corner diagonally opposite, as from 1 to 2, so that the plate is thickest on a line drawn from 3 to 4 and slightly tapers from this line to the corners 1 and 2. By using a plate made separate from the jaws, which are cast with the handles, said handles may be made of malleable iron and the plate of steel, thus reducing the cost of manufacture and providing a tool practically as durable as if the entire tool were of steel, while the peculiar shape of the plate adds greatly to its strength, as the bearings of the wire, when the tool is in use, will be in the center of the plate, thus reducing its liability to break to the minimum and greatly increasing the grasping power of the device. The purpose of hook *c* is to shorten the chain, when desired, by

hooking one of its links over said hook, especially at the end posts, where the wire should be stretched across the post and fastened. By shortening the chain the tongs may be drawn past the post out of the way, so that the wire may be fastened to the post. The swivel *e* relieves the twist in the wire and allows the same to become straight.

To operate the device, the lever is taken up in one hand and the tongs in the other, the elongated jaw *m* being inserted beneath the wire, thereby bringing the wire between the corrugated jaws. The nose-iron in the end of the lever is placed against one of the fence-posts or a tree or other immovable object, its teeth preventing its slipping, and the lever is moved in the direction shown by the dotted lines, Fig. 1, the farther it is moved the greater being the strain on the wire and the tighter the grasp on the wire between the jaws, the latter owing to the fact that the two handles are drawn together by the links *F*, they tending to straighten or to a horizontal line when the lever is moved.

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

1. The hereinbefore-described wire-stretcher, consisting of the lever having the curved bottom slot formed in one end, the nose-iron having teeth on one end and its other end curved or rounded, the staple provided with the hook and eye, the chain provided with a swivel-link, the elongated links connected with said swivel-link, the tongs having its handles connected with said elongated links, and the corrugated jaws projecting laterally from said handles, one of said jaws extending beyond the other and tapering to a blunt point, as set forth.

2. The combination, in a wire-stretcher, of the lever, the tongs having laterally-projecting jaws, one of which extends beyond the other and tapers to a blunt point, and a chain for connecting said lever and tongs, substantially as described.

3. The combination, in a wire-stretcher, of the lever, the tongs having laterally-projecting jaws, one of which projects beyond the other, and each of which is recessed on its inner face, the corrugated plates having the countersunk perforations adapted to fit said recesses, screws for securing said plates in the recesses, and a chain connecting said lever and the handles of the tongs, substantially as described.

4. The combination, in a wire-stretcher, of the tongs having the corrugated jaws projecting laterally therefrom, the faces of said corrugated jaws curving diagonally from corner to corner, and the corrugations trending backward at an acute angle to the body of the tongs, substantially as described.

5. The hereinbefore-described tongs for a wire-stretcher, consisting of the handles pivotally secured together at one end, and having the laterally-projecting jaws, said jaws

having recesses formed in their contiguous faces, the plates adapted to fit said recesses and curving diagonally from corner to corner on their upper surfaces and having corrugations formed on said curved faces, said corrugations trending at acute angles rearwardly from the handles of the tongs, substantially as described.

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

FREDERICK J. TOWNSEND.

Witnesses:

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