E. E. SWARM.

WIRE STRETCHER.

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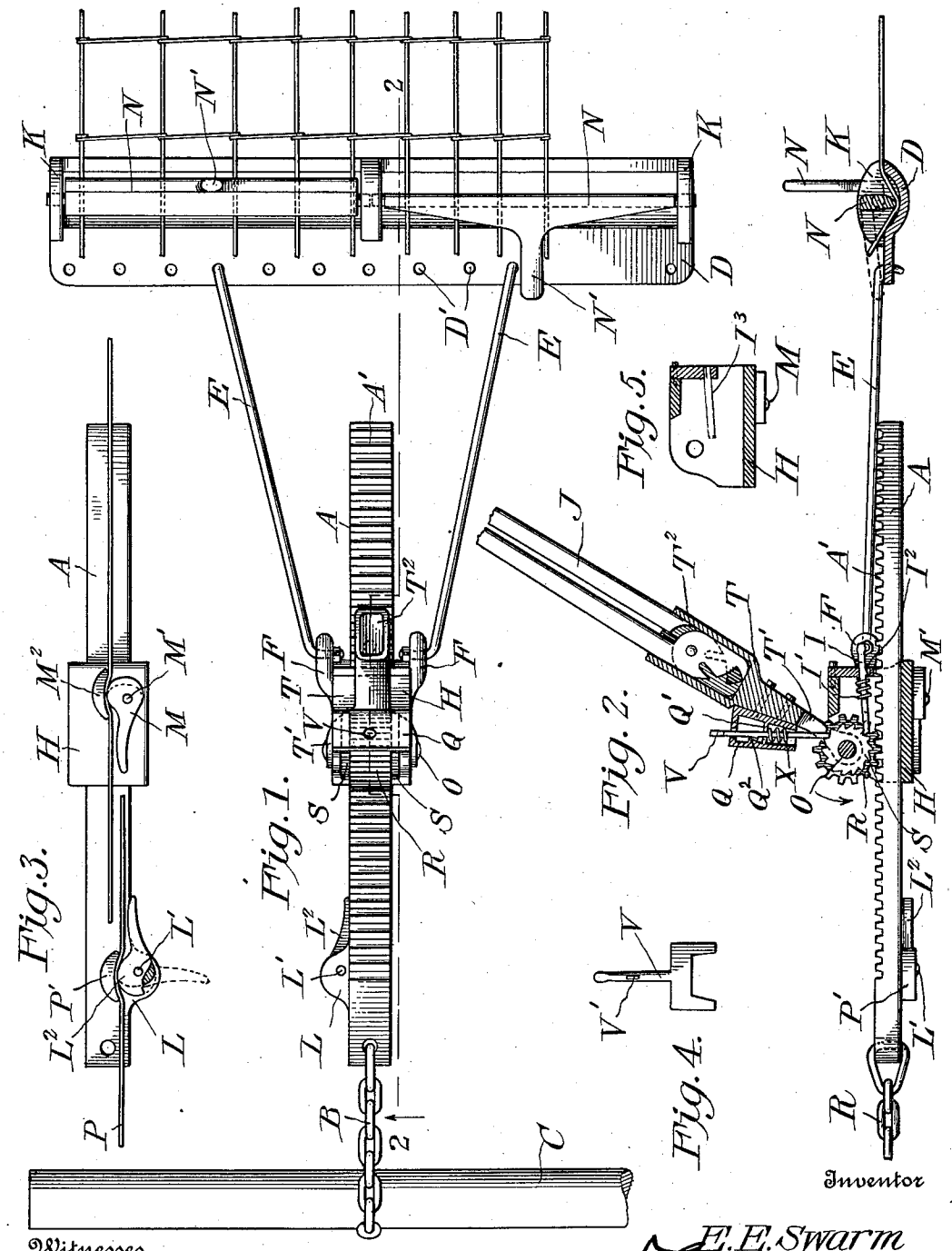
1,023,400. Patented Apr. 16, 1912.



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WIRE-STRETCHER.

1,023,400. Specification of Letters Patent. Patented Apr. 16, 1912.

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To all whom it may concern:

Be it known that I, EMERY E. SWARM, citizen of the United States, residing at Hampton, in the county of Rock Island and State of Illinois, 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in apparatus for stretching either woven or single strand wires for fencing, etc., and comprises a simple and efficient device of this nature having various details of construction and combinations and arrangements of parts which will be hereinafter fully described, shown in the accompanying drawings and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a top plan view showing the application of my invention for stretching a woven wire fence. Fig. 2 is a sectional view on line 2—2 of Fig. 1, looking in the direction of the arrow. Fig. 3 is a side elevation of a portion of Fig. 1, illustrating means for clamping the ends of single wires. Fig. 4 is a detail view of a pawl, and Fig. 5 is a detail sectional view.

Reference now being had to the details of the drawings by letter, A designates a rack bar which has teeth A′ upon one face thereof, and a chain B is fastened to one end of said bar and its other end adapted to be fastened to a post C or other stationary object. A plate D is provided with apertures D′ therein for engagement with the hooked ends of the bars E which are adjustably held therein and said rods also passing through apertures in the arms F upon the boxing H. Said plate D is provided with laterally projecting lugs K in which the pintle ends of the jaws N are journaled, each of which is provided with a handle N′.

Upon reference to Fig. 2 of the drawings, it will be noted that the plate is concaved upon its upper surface and that the jaw has a cam action and frictionally holds the wire intermediate the same and said concaved surface, thus securely gripping the wire. Said boxing has journaled in the walls thereof a shaft O to which is fixed a gear wheel R in mesh with the teeth of the rack bar A and upon either side of said gear wheel is a circular series of ratchet teeth S. A forked member T is provided with arms T′, each of which is journaled upon the shaft O and has a hollow socket portion T^2 in which a handle J of any kind may be inserted for the purpose of rocking said member T.

In the drawings I have illustrated a tool comprising a handle made up of two jaws pivoted together and which tool, while utilized as a handle, may serve other purposes for convenient use in fence construction, cutting wires, etc. Fixed to said member T is a hollow casing Q having an apertured partition Q′ therein and a lug Q^2 projects from the inner wall of said casing, as shown clearly in Fig. 2 of the drawings. A pawl V passes through the apertured top and partition within said casing and a coiled spring X is mounted upon the pawl intermediate said partition and the shoulder upon the pawl and serves to normally hold the pawl at its lowest throw. Upon reference to Fig. 4 of the drawings, it will be noted that said pawl has a forked end so that an arm upon each will engage a series of ratchet teeth, one upon either side of the gear wheel.

Upon the shank portion of the pawl is a projection V′ which may engage over the projection Q^2 upon the wall of the casing, should it be desired to hold the pawl out of the path of the ratchet teeth. A second pawl, designated by letter I, slides within a groove I^3 in the side wall of said boxing H and is held at its farthest inner throw by means of a coiled spring I′, the inner end of the pawl I being adapted to engage the series of ratchet teeth S and normally hold the same from rotation in one direction. A projection I^2 upon the pawl I is adapted to engage over the marginal edge of the opening in the end of the boxing should it be desired for any purpose to hold said pawl I out of the path of the teeth of the gear wheel.

Upon one face of the rack bar is a lug L carrying a pin L′ and upon which a cam lever L^2 is mounted, which is adapted to grip a single wire P intermediate the same and the fixed jaw P′, as shown clearly in Fig. 3 of the drawings. A similar cam lever

M is mounted upon a pin M′ projecting from said boxing H and serves to clamp the end of the wire intermediate the same and a fixed jaw M^2, thus affording means whereby two ends of wires clamped as shown may be drawn together as the casing is fed forward upon the rack bar by the swinging movement of the handle.

By the provision of a wire stretching device as shown and described, it will be noted that a simple and efficient means is afforded whereby either woven wire fabric or a single wire may be drawn taut by swinging the member T backward and forward, the pawls causing the boxing to be fed forward and with it the clamping mechanism, causing the wire to be drawn taut and held by the ratchet wheels.

What I claim to be new is:—

1. A wire stretching apparatus comprising a rack bar adapted to be anchored to a stationary object, a boxing movable upon the rack bar, a rotatable shaft mounted in the boxing, a wheel fixed to said shaft and having gear and ratchet teeth thereon, a socket member having a forked end which is pivotally connected to said shaft, a hollow casing secured to said socket member, a spring-pressed pawl movable within the casing and having a projection upon the shank portion thereof adapted to engage a projection upon the wall of the casing, the forked end of the pawl engaging the two series of ratchet teeth, a spring-pressed pawl carried by the boxing and adapted to engage the ratchet teeth, a clamping member, and rod connections between the same and said boxing, as set forth.

2. A wire stretching apparatus comprising a rack bar adapted to be anchored to a stationary object, a boxing movable upon the rack bar, a rotatable shaft mounted in the boxing, a wheel fixed to said shaft and having gear and ratchet teeth thereon, a socket member having a forked end which is pivotally connected to said shaft, a hollow casing secured to said socket member, a spring-pressed pawl movable within the casing and having a projection upon the shank portion thereof adapted to engage a projection upon the wall of the casing, the forked end of the pawl engaging the two series of ratchet teeth, a spring-pressed pawl carried by the boxing and adapted to engage the ratchet teeth and having a projection upon its shank portion adapted to engage over the edge of an aperture of the casing through which it passes, a clamping member, and rod connections between the same and said boxing, as set forth.

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

EMERY ELLSWORTH SWARM.

Witnesses:

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LOUIS KLEINAN.