H. EDWARDS & M. F. SADLER.

WIRE STRETCHING MACHINE.

APPLICATION FILED MAY 11, 1908.

915,753.

Patented Mar. 23, 1909.

2 SHEETS—SHEET 1.

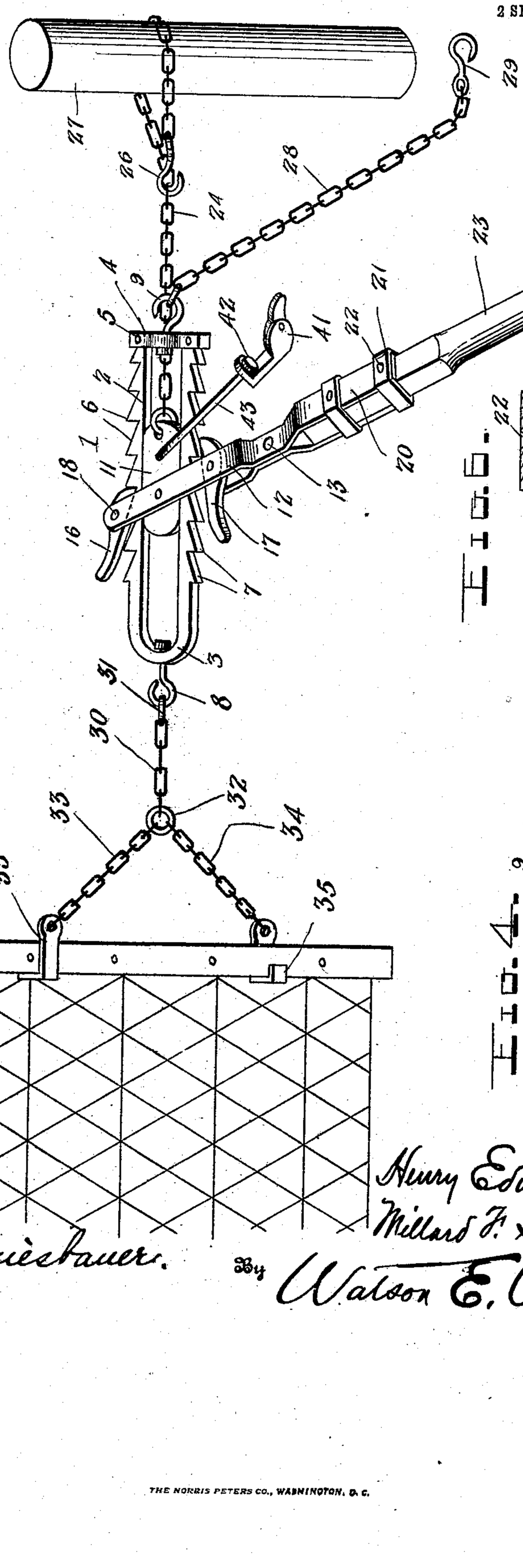

FIG. 1.

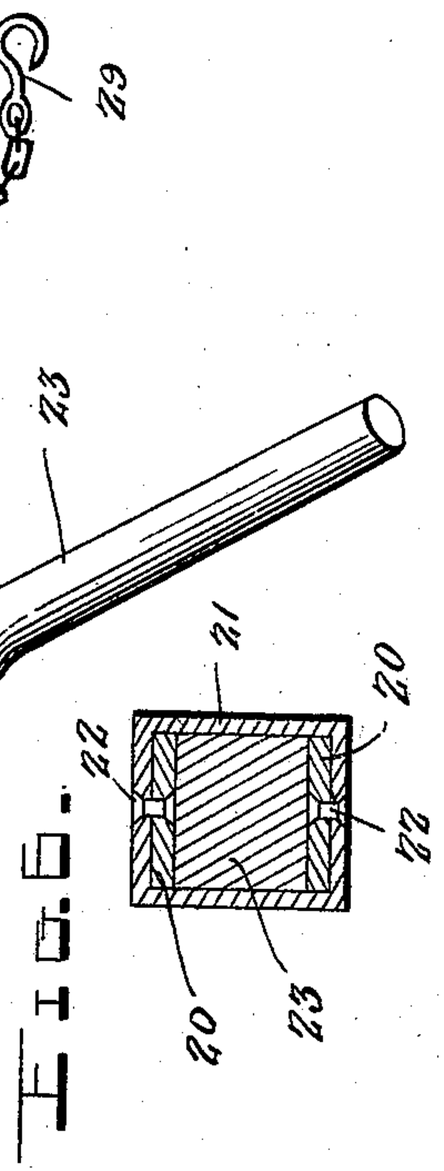

FIG. 3.

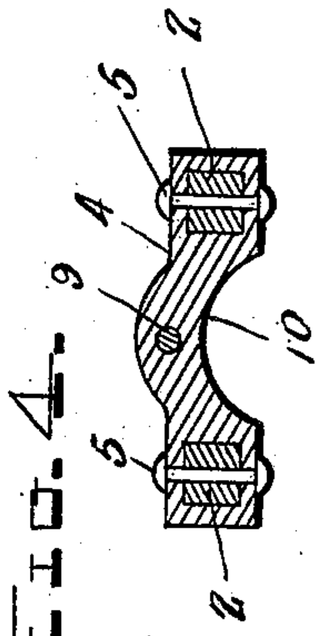

FIG. 4.

Witnesses

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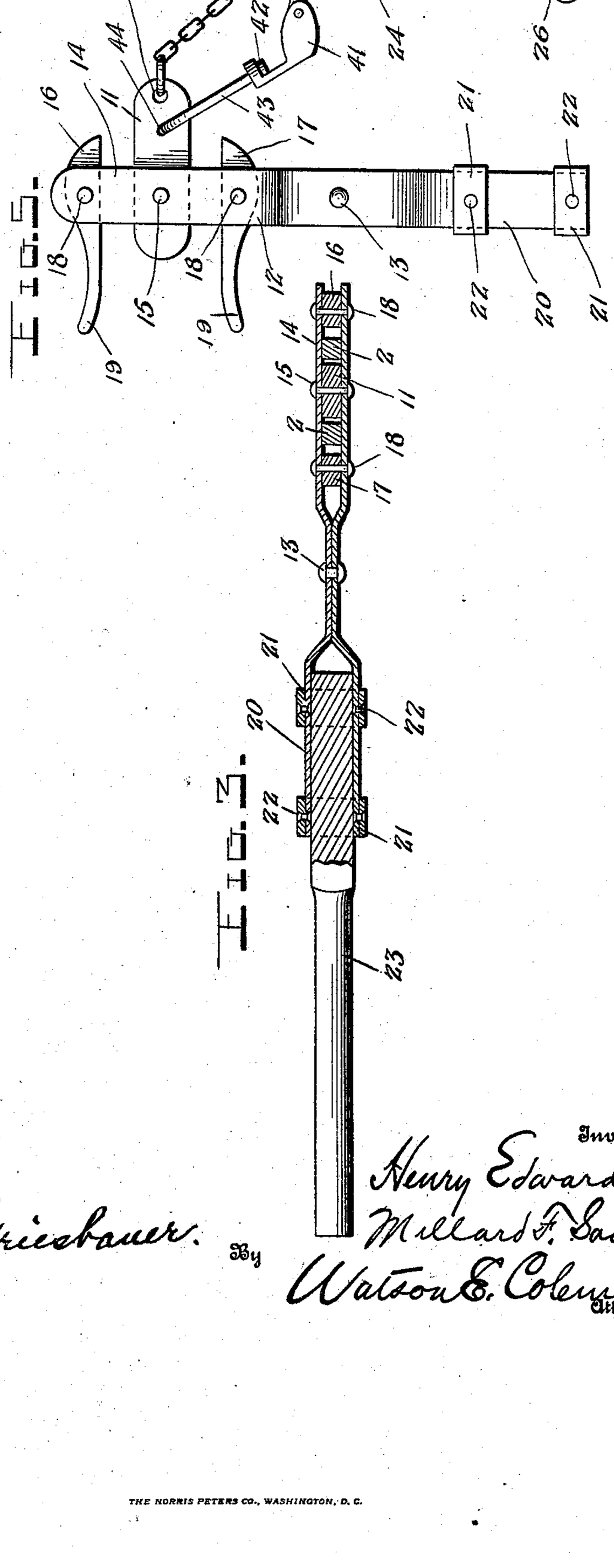

FIG. 1.

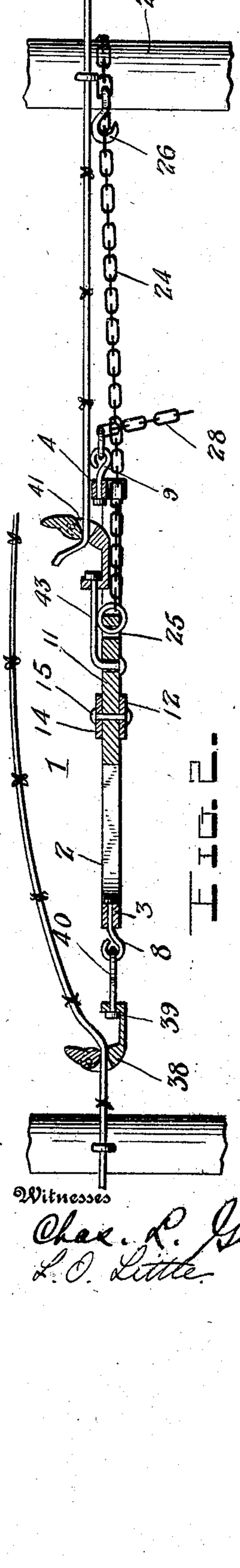

FIG. 2.

FIG. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY EDWARDS AND MILLARD F. SADLER, OF TROUP, TEXAS.

WIRE-STRETCHING MACHINE.

No. 915,753. Specification of Letters Patent. Patented March 23, 1909.

Application filed May 11, 1908. Serial No. 432,180.

To all whom it may concern:

Be it known that we, HENRY EDWARDS and MILLARD F. SADLER, citizens of the United States, residing at Troup, in the county of Smith and State of Texas, have invented certain new and useful Improvements in Wire-Stretching Machines, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to improvements in machines or devices for stretching wire and for analogous purposes; and it consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed.

The object of the invention is to improve and simplify the construction and operation of machines of this character and to provide one which is simple and practical in construction, powerful and effective in operation, convenient and easy to adjust and manipulate and adapted for a variety of uses.

The above and other objects of the invention are attained in its preferred embodiment illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view illustrating the use of our invention in stretching a wire fence or wire netting; Fig. 2 is a longitudinal sectional view through the stretcher showing it adapted for drawing together the ends of two wires which are to be united; Fig. 3 is a transverse section on the plane of the operating lever; Fig. 4 is a detail transverse section through the end piece 4 of the body or frame of the device; Fig. 5 is a detail view of the lever and the parts attached to it; and Fig. 6 is a detail transverse section through the lever.

Our improved wire stretcher comprises a body or frame 1 in the form of a substantially rectangular loop composed of a U-shaped member having side bars 2 united at one end by a curved integral portion 3 and at their opposite ends by a removable cross piece or bar 4 which is formed at its ends with openings to receive the side bars 2 and which is secured by transverse bolts or similar fastenings 5. The side bars 2 of the frame or body have smooth inner edges but their outer edges are formed with notches which provide ratchet teeth 6, 7. In the curved or closed end 3 of the body 1 is formed a centrally disposed, longitudinally extending opening in which is swiveled a hook 8, and a similar hook 9 is swiveled in an opening formed in the center of the cross piece or bar 4. The latter has its central part recessed upon one side, as shown at 10, for a purpose presently explained.

Mounted for sliding movement within the frame is a pawl and lever carrying member 11 which is in the form of a substantially rectangular plate or block adapted to slide freely between the straight inner edges of the side bars 2. This slide or block 11 is retained in the frame by a lever 12 consisting, preferably, of two similar metal strips or plates having their central portions engaged with each other and united by one or more rivets 13 and their inner end portions 14 spaced apart and engaged with the opposite faces of the bars 2 and block 11, to which latter they are pivoted by a rivet, bolt, or the like 15. The pivot 15 serves as a fulcrum for the lever, which when oscillated, causes two dogs or pawls 16, 17 to travel along the ratchet or rack teeth 6, 7. These dogs are pivoted intermediate their ends at 18 between the spaced inner ends 14 of the lever plates or members and they are disposed upon the outer sides of the bars 2, 2 so as to engage the ratchets upon the latter. Each of said pawls has a flat inner edge, a tapered portion or pawl proper at one end and a finger piece 19 at its other end. The outer ends 20 of the plates or members of the lever are spaced apart and surrounded by bands 21 secured by rivets or the like 22. The parts 20, 21 form a socket for a removable handle 23 which may be used when it is desired to lengthen the lever 12 to obtain greater leverage.

When the machine is to be used for stretching a wire, wire fencing, for moving heavy objects, or for analogous purposes, either the body or frame 1 by means of swivel 9 or the block 11 by means of device 41 may be secured to a post or other stationary object, but we preferably fix the block 11 by means of a chain or similar flexible element 24 which has one of its ends secured in an opening 25 in the block 11 and its other end provided with a hook 26 which may be engaged with any of the links of said chain after the latter has been passed around a post 27 or any other stationary object.

It will be noted upon reference to Fig. 2 that by providing the recess 10 in the cross bar 4 the chain 24 is permitted to extend in a straight line from the post 27 to the block

11 so that the line of strain or draft will be straight.

It will be understood that the machine may be otherwise anchored by any suitable means.

A chain 28 similar to the chain 24 is provided for temporarily anchoring the body or frame 1 after the dogs have traveled from one end of the ratchets to the other and it is desired to have the dogs take a further grip upon the latter to continue the stretching operation. This chain 28 has one of its ends provided with a hook 29 and its other end engaged with the swiveled hook 9. It will be noted that this hook 9 has its mouth almost closed so that there will be little likelihood of the chain 28 becoming disconnected.

30 denotes a connection for use when it is desired to stretch wire fencing, as shown in Fig. 1. This device 30 consists of a chain having at one end a loop 31 to detachably engage the swiveled hook 8 and at its other end a ring 32 to which are connected two branch chains 33, 34 which have upon their free ends hooks 35. The latter are adapted to be engaged with a clamp 36 of any suitable form and construction arranged upon the end of the wire fencing 37 that is to be stretched. As shown, this clamp 36 consists of two strips of wood engaged with the opposite faces of the wire fencing 37 and secured thereto by nails, bolts, or other fastenings. The hooks 35, which are rectangular in form, are passed around the opposite side faces of said clamping strips at points suitably distant from their center, as clearly shown in Fig. 1.

When a single fence wire or the like is to be stretched, we preferably employ a wire clamp 38 which is swiveled at 39 upon a loop 40 which is adapted to be engaged with the swiveled hook 8 in place of the loop 31 of the device 30. The clamp 38 may be of any suitable form and construction, but as illustrated, it comprises a body shaped to provide a stationary clamp jaw and a pivoted cam or eccentric which forms the movable clamp jaw.

When the machine is to be used for drawing together the ends of two wires which are to be united, we employ the clamp 38 for use upon one of the wires and a similar clamp 41 for use upon the other wire, as clearly shown in Fig. 2. The clamp 41 is swiveled at 42 upon the outer end of a rod 43, which latter has its other end swiveled in an opening 44 in the block 11 by bending said other end at right angles, passing it through the opening 44, and heading or upsetting said end, as clearly shown in the drawings.

In operation, assuming the parts to be in the position shown in Fig. 1, when the lever is moved in one direction, one of the dogs will engage one of the teeth of its ratchet so that the body 1 and the block or slide 11 will move longitudinally in opposite directions while the other dog will slip backward upon its ratchet to engage the next tooth. When the lever is oscillated in the opposite direction, the last mentioned dog will be stationary while the first mentioned one will move backward upon its ratchet to engage the next tooth thereof. By thus oscillating the lever, the body or frame 1 and the block or slide 11 will be caused to move along each other. After the dogs have moved from one end of their ratchets to the other and the block 11 is at the closed end 3 of the body 1, the chain 28 which is attached to the hook 9 on the body is passed around the post 27 and its hook 29 engaged with one of its links so as to anchor the body 1. The handles 19 of the dogs are then pressed inwardly to disengage them from their ratchets so that the block 11 may be moved to the other end of the body 1. When the latter is done the chain 24 is tightened and the above described operation repeated. When a fence wire is to be stretched the wire clamp 38 is substituted for the connection 30 and when the ends of two wires are to be brought together and united one wire is connected to the clamp 38 and the other wire to the clamp 41.

While we have mentioned a few of the uses of the machine it will be understood that it may be used in various other ways, for example, for moving heavy machinery through short distances, for pulling iron safes and other heavy loads up inclined planes, as into wagons, etc., for erecting and putting into position heavy timbers in buildings, bridges, etc., for erecting smoke stacks, for straightening up storm shaken telephone poles, etc.

Having thus described our invention what we claim is:

1. A wire stretcher comprising a U-shaped body having a closed end and spaced side bars, the latter being provided with ratchet teeth, a cross bar having openings at its ends to receive the side bars of the body, its intermediate portion having in one side an offset and a central opening, a chain connection swiveled in the last mentioned opening, transverse fastenings uniting the ends of the cross bar to the side bars of the body, a block slidable between the side bars of the body, a chain connected to said block and adapted to extend through the offset in the cross bar, a lever having at its inner end spaced plates to receive said block and the side bars of the body between them, said plates being pivoted intermediate their ends to the block, whereby the latter will be retained in the body and the lever will be fulcrumed, and pawls pivoted between the spaced plates of the lever and adapted to engage the ratchet teeth on said side bars.

2. The herein described wire stretcher comprising an open body formed by bending a bar upon itself to provide a closed end and two side members, the latter having their outer edges notched to provide ratchet teeth and the closed end having a central opening, a hook having a shank passed through the latter and its inner end upset to provide a swiveled connection, a cross bar formed at its ends with openings to receive the ends of the side members of the body, the intermediate portion of said cross bar having an offset portion in one side and a central opening, transverse fastenings passing through the ends of the cross bar and the body bar, a hook having a shank passed through the central opening in the cross bar and its end upset to provide a swiveled connection, a block slidable between the smooth inner edges of the side members of the body, said block being formed with an opening, a wire clamp, a rod having a swiveled connection with the latter at one end and its other end bent at right angles and passed through the opening in said block, the extremity of said bent end of the rod being upset to provide a swiveled connection, a chain attached to said block and adapted to extend through the offset intermediate portion of said cross bar, an operating lever having at its inner end two spaced plates to receive said block and the ratchet members of the body between them, said plates being pivoted intermediate their ends to the block, whereby the latter will be retained in the body and the lever will be fulcrumed, and pawls pivoted between said spaced plates and adapted to engage the ratchet teeth upon the body, substantially as set forth.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

HENRY EDWARDS.
MILLARD F. SADLER.

Witnesses:
JNO. WALTON PACLY,
J. A. HARRIS.