

No. 658,149.

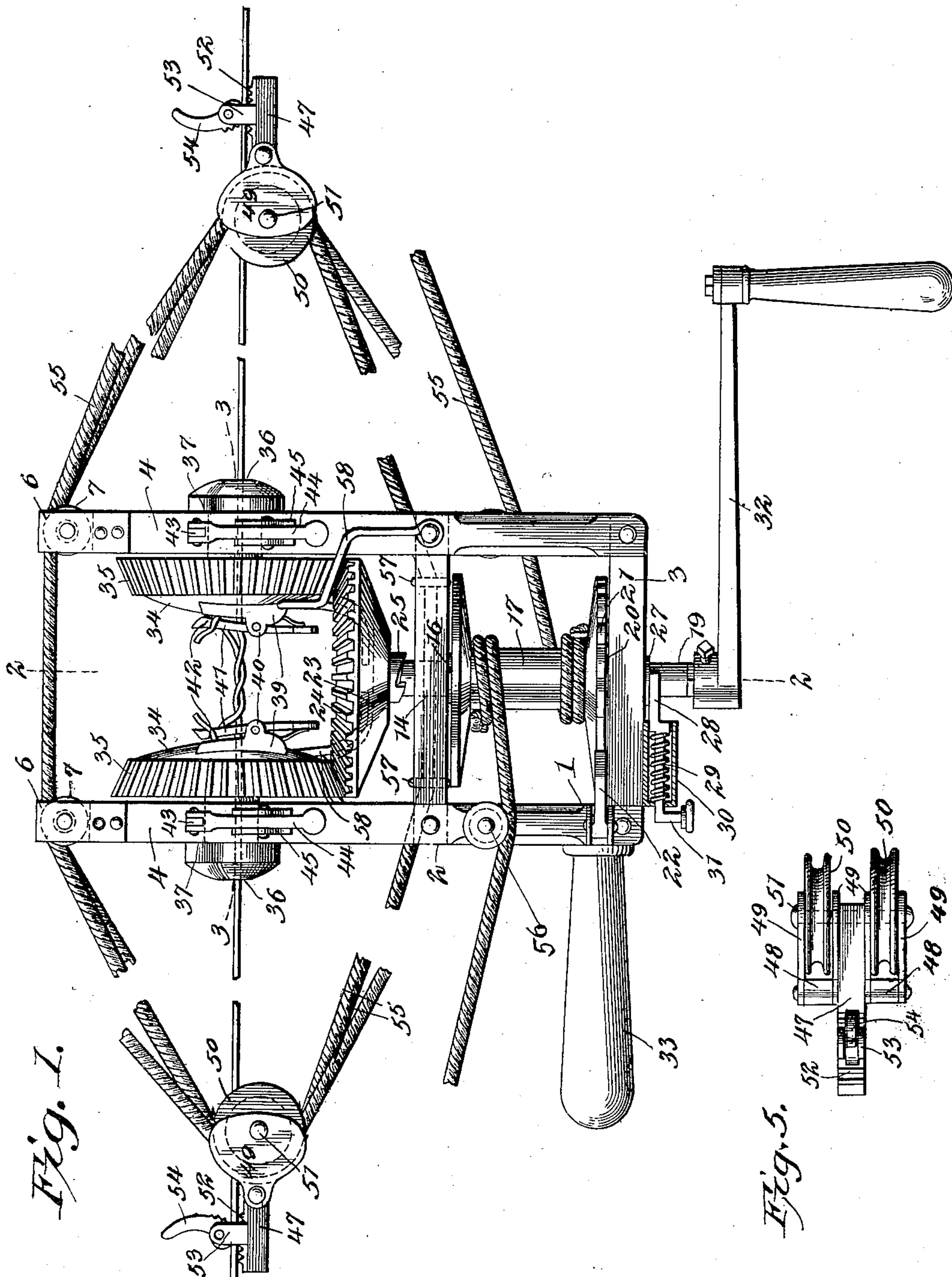
Patented Sept. 18, 1900.

H. JACOBS.
WIRE STRETCHER.

(Application filed Mar. 9, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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Henry Jacobs, Inventor,
By his Attorneys,
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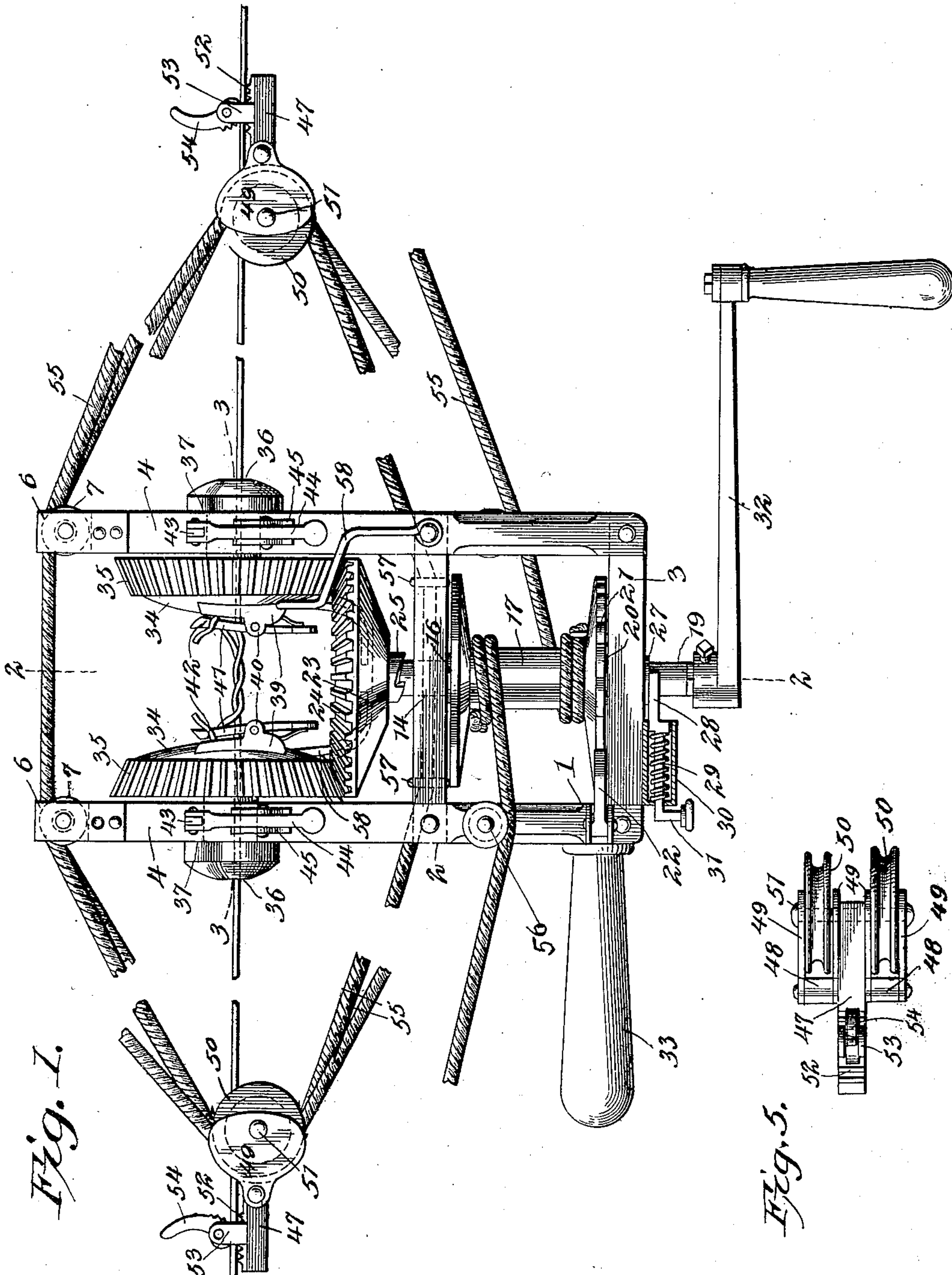
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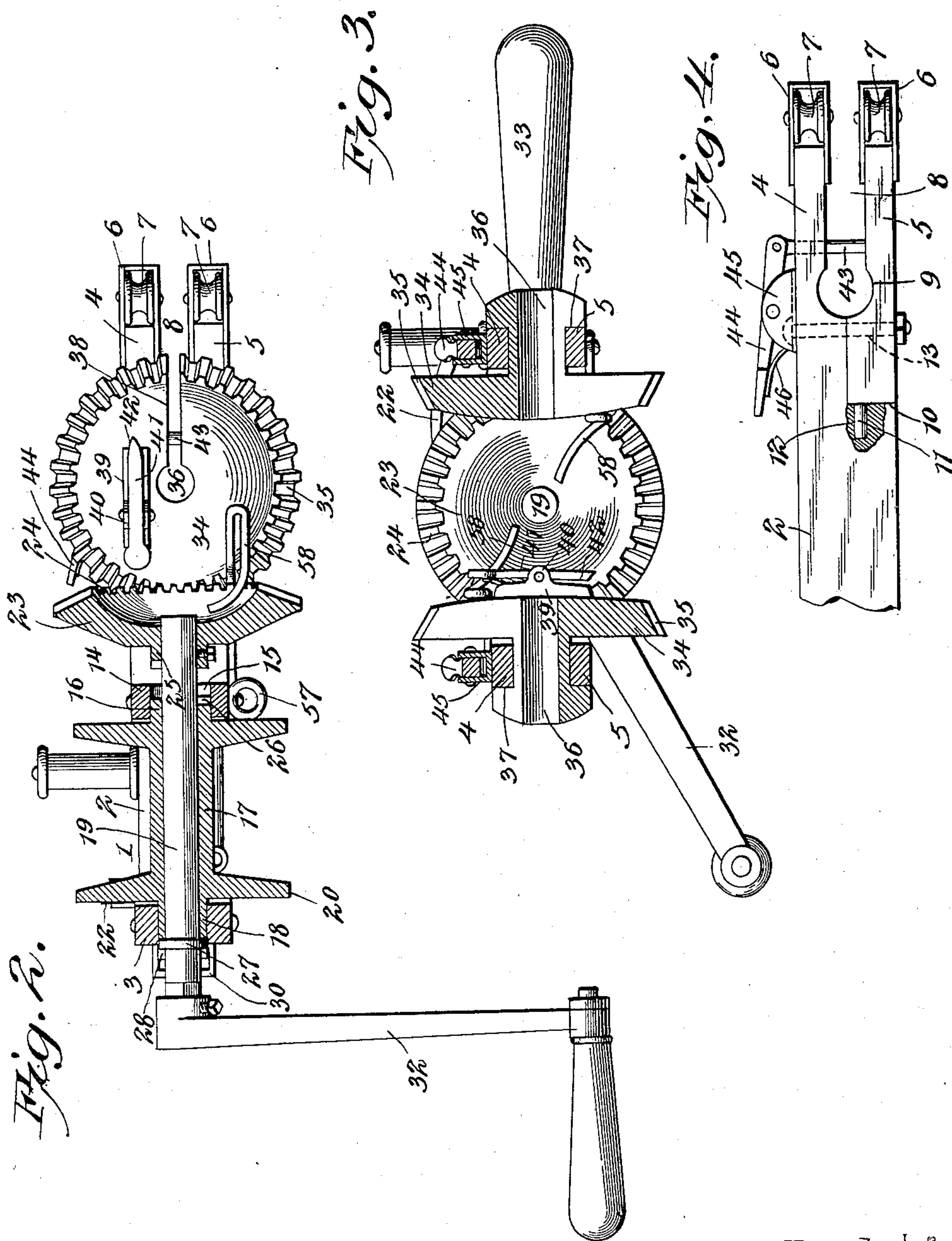
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UNITED STATES PATENT OFFICE.

HENRY JACOBS, OF LEXINGTON, ILLINOIS.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 658,149, dated September 18, 1900.

Application filed March 9, 1900. Serial No. 8,029. No model.

To all whom it may concern:

Be it known that I, HENRY JACOBS, a citizen of the United States, residing at Lexington, in the county of McLean and State of Illinois, have invented a new and useful Wire-Stretcher, of which the following is a specification.

This invention relates to a machine for repairing wire fences of different types and to take up the slack in the wire runners; and the object of the same is to provide a simple and effective portable machine adapted to be manually operated and which can be easily and readily applied without disconnecting the wires and operated between two runner-supports or at any other point along the line of the fence, and it is also capable of use for general coupling operations.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of a machine embodying the features of the invention shown applied in operative position and partially broken through. Fig. 2 is a section on the line 2 2, Fig. 1, showing the pulley rope or cable removed. Fig. 3 is a transverse vertical section on the line 3 3, Fig. 1. Fig. 4 is a side elevation of a part of the machine shown broken away. Fig. 5 is a side elevation of one of the compound pulleys employed in connection with the machine.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates the frame of the machine, which comprises opposite sides 2 and an end-connecting strip 3. The free extremities of the sides 2 are each composed of a fixed jaw 4 and a removable jaw 5 in vertical alinement, brackets 6 extending outwardly from the ends of the said jaws and having guide sheaves or pulleys 7 horizontally disposed therein. A throat 8 is formed between the jaws 4 and 5 and is continuous, with an open space between the inner opposing sides of the brackets 6, the rear part of the throat merging into or being continuous with an enlarged seat aperture or opening 9, formed in part in each jaw. The jaw 4 is

provided by cutting out the removable jaw 5 or separating a portion of the side 2 in each instance from the remaining part, or the side 2 may be constructed in the first instance with the angular seat 10 to receive the rear end of the jaw 5. The said rear end of each jaw 5 has a dowel-pin 11 thereon to fit in a socket 12 in the lower portion of each side 2, and to firmly hold the jaw 5 in contact with the side 2 and in proper relation to the jaw 4 a bolt 13 is employed and is removable at will. The said bolt 13 extends vertically through the jaw 4 and the jaw 5, and by means of this separable construction of the jaw 5 on each side of the machine the mechanism which will be hereinafter described can be conveniently mounted in operative position or at any time removed for repair or other purposes.

At a suitable distance from the end strip 3 and secured to the sides 2 is a transverse bearing-strip 14, having an opening 15 through the central portion thereof in which one hub 16 of a winding spool or reel 17 is loosely mounted, the opposite hub 18 of the said spool or reel having loose bearings in the end strip 3. An operating-shaft 19 extends through the hubs 16 and 18 and the intermediate body portion of the spool or reel, the latter being loose on the shaft and having one of its flanges formed with ratchet-teeth 21, which are engaged by a gravity-pawl 22, attached to the rear portion of one of the sides 2 and operating to prevent the reel or spool from rotating or having backward movement during a particular operation which will be presently set forth. The forward end of the shaft 19 has a face-gear 23 fast thereon, which is provided with a central outer concave recess 24 and a hub 25, which is formed to provide a clutch member, as clearly shown in Fig. 1. The clutch member 25 operates and coincides with a corresponding clutch formation 26 on the free end of the hub 16 or the spool or reel. The shaft 19 is freely movable through the spool or reel and has a circumferential flange 27 on its rear portion to coact with the adjacent bifurcated end 28 of a latch 29, which is spring-actuated and mounted in a casing 30, as shown by Fig. 1, the outer end of the latch being angularly projected and headed, as at 31, for convenience in operating the same. When the shaft 19 is moved forward in the

direction of the jaws 4 and 5, the bifurcated end of the catch will bear against the rear edge of the flange 27, and when said shaft is drawn to the rear the said end 28 will be permitted to bear on the shaft and the front edge of the said flange, and in this position the clutch member 25 of the gear 23 will be thrown into engagement with the clutch formation on the end of the hub 16 and the shaft 19 thus locked to the spool or reel 17, whereby a rotation of the shaft in one direction will cause the spool or reel to be similarly rotated. In operating the catch 29 as set forth it will be understood that the head or end 28 is cleared from the shaft 19 and flange 27 by pressing outwardly on the outer angular-headed extremity of said latch and against the action of the spring cooperating therewith. The shaft 19 is rotated by means of a crank-handle 32, secured to the rear end thereof, and to conveniently hold the machine during the operation which will be hereinafter explained it is provided with a grip or handle 33, secured to the rear portion of the side 2, near the catch 29 and in a plane at right angles to the said side, so that the operator may be enabled to hold the frame and machine entire with one hand and rotate the shaft 19 through the medium of the crank-handle 32 with the other hand.

In the seat apertures or openings 9 twisting-heads 34 are rotatably mounted, one on each side, and both being of the same construction only one will be particularly referred to. The twisting-head comprises an inner beveled gear 35, having a tubular hub 36, having a circumferential groove 37, in which the opposite portions of the jaws 4 and 5, forming the wall for the seat aperture or opening 9, are located, the hubs being sufficiently loose in the jaws in each instance or on opposite sides of the machine to permit the gears 35 to freely rotate. In mounting the twisting-heads 34 in position the lower jaw 5 on each side is disconnected, the hub of each head then placed in position, as explained, with the gears 35 innermost, and the said jaws 5 afterward reapplied, as shown in Fig. 4, and thereby hold the said heads in operative relation with the remaining parts of the machine. The bore of the hub of each head 34 continues through the center of the gear portion of the same, and communicating with the said continued bore is a radial slot 38, in like manner continued through the length of the hub.

On the inner face of the gear portion of each head 34 a wire-holder 39 is located and comprises a support 40, in which is pivotally mounted a spring-actuated holding-jaw 41, having a free end 42, between which and the adjacent part of the support 40 the ends of the wire operated upon may be introduced and firmly held while the twisting action hereinafter more fully referred to is being carried on.

From the construction thus far explained

it will be observed that the wire or ends of separated wire are introduced in the twisting-heads by moving it or them inwardly between the jaws 4 and 5 and through the radial slots 38 to the bore of the hub and gear of the twisting-head in each instance. To accomplish this, the twisting-heads are turned so that the radial slots 38 will be in line with the throat between the jaws 4 and 5 and as clearly shown by Fig. 2, and to close the said throat and to keep the wires or wire from working out the slots 38 closing-pins 43 are movably mounted in the jaws 4 and extend into close contact with the upper edges of the lower jaws 5, said pins having operating-levers 44 pivotally connected thereto and fulcrumed on a support 45, the rear portions of said levers being normally held in elevated position and the pins 43 depressed by means of springs 46. It will be understood that one of the pins 43 is located in operable relation to each pair of jaws 4 and 5 and that by depressing the rear extremity of the lever 44 said pin can be quickly elevated to clear the throat between the jaws for exit or entrance of the wire or wires from and to the twisting-head in each instance.

The gears 35 are adapted to mesh with the face-gear 23 when the shaft 19 is adjusted to its forward position, as clearly shown by Figs. 1 and 2, and in view of the relation of the said gears 35 to the gear 23 it will be observed that the twisting-heads will be turned in reverse directions. In connecting the ends of the broken-wire runner or any other two wire parts or extremities the ends or extremities are carried past each other a distance equal to that between the inner opposing portions of the twisting-heads, and the end on the left, for instance, will be carried through the head on the left and connected to the holder on the right head, and, conversely, the end of the wire on the right will be carried through the head on the right and attached to the holder on the left head, and by this means a thorough and practical jointure of the wire ends can be obtained. After the wires are thus connected the closing-pins 43 will be raised and the twisting-heads turned to bring the radial slots 38 thereof in line with the throats between the jaws 4 and 5, and thus permit withdrawal of the wire from the machine or the removal of the machine from the wire.

To render a machine of the character set forth complete in its service, it is necessary to make provision for drawing the wire ends together with sufficient tension to effect the jointure desired or to obtain enough overlap of the wire ends to produce the locking-twist. To arrive at this result in a simple manner, the compound sheaves or pulleys (shown more clearly by Fig. 5) are employed, and comprise a draft-bar 47, to which upper and lower space members 48 are secured, and from the said space members guards 49 project in parallel planes and rotatably inclose horizontally-disposed sheaves or pulleys 50, two being located