

(No Model.)

2 Sheets—Sheet 1.

G. A. FEDER.
WIRE DISTRIBUTING MACHINE.

No. 582,726.

Patented May 18, 1897.

Fig. 1.

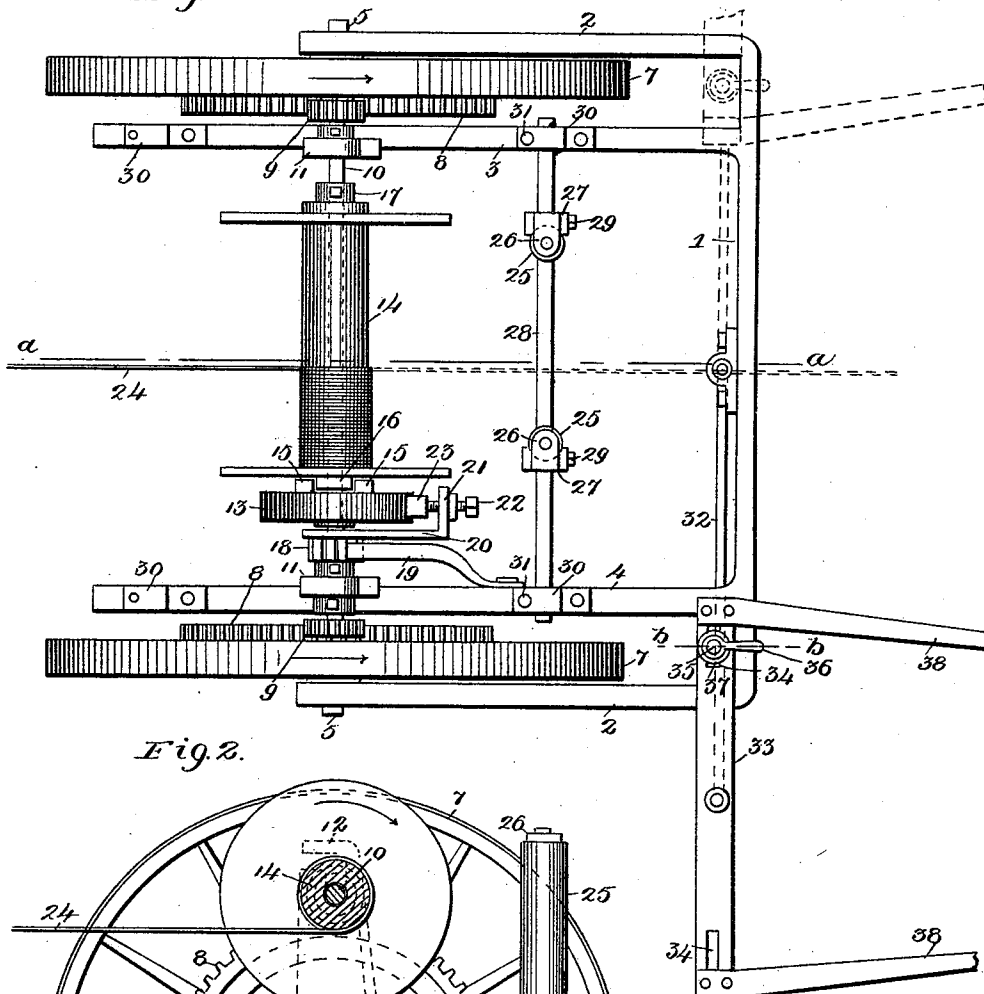


Fig. 2.

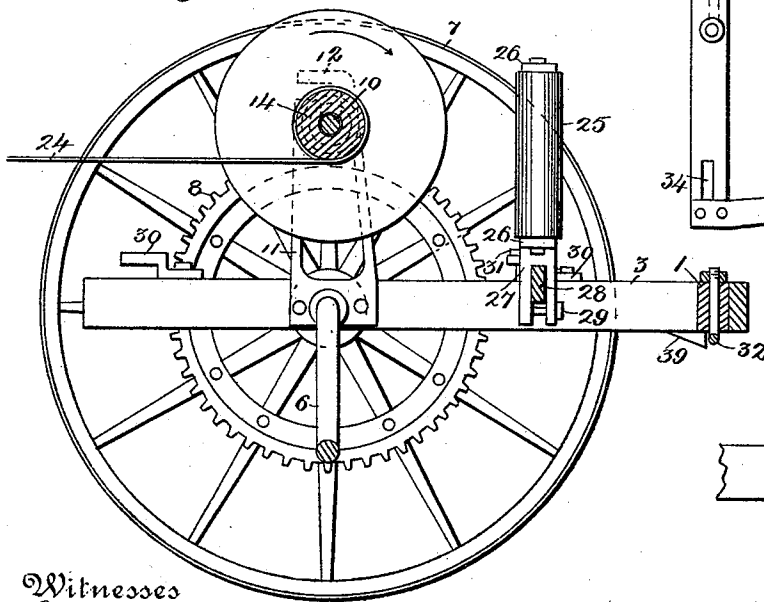
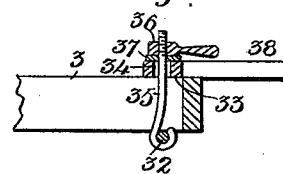


Fig. 3.



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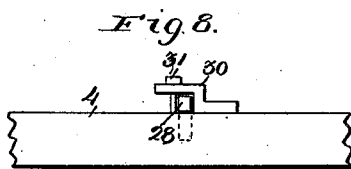
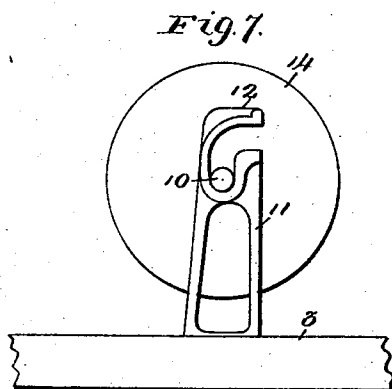
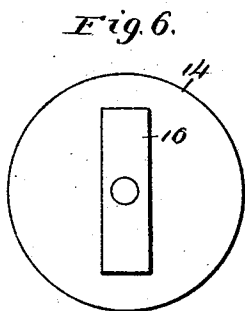
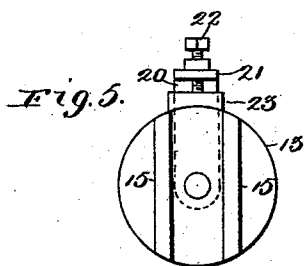
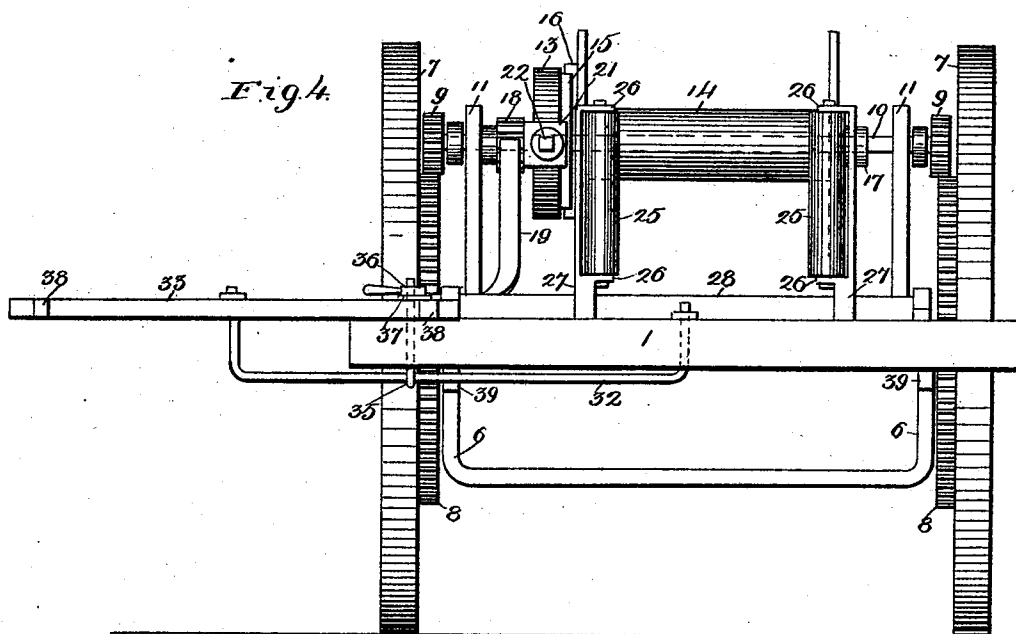
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

GEORGE A. FEDER, OF BELLEVILLE, ILLINOIS.

WIRE-DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 582,726, dated May 18, 1897.

Application filed January 9, 1896. Renewed November 27, 1896. Serial No. 613,716. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. FEDER, a citizen of the United States, residing at Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Wire-Distributing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in wire winding and distributing machines; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a top plan view of my invention. Fig. 2 is a vertical section on the line *a a* of Fig. 1. Fig. 3 is a detail on the section-line *b b* of Fig. 1. Fig. 4 is a front view of the machine. Fig. 5 is an end view of the loose disk cooperating with the spool of the machine. Fig. 6 is an end view of the spool with which the disk aforesaid couples. Fig. 7 is a detail of the standard on which the spool-shaft revolves; and Fig. 8 is an end elevation of the transverse bar carrying the antifriction guide-rollers, showing the manner of securing it to the frame.

The object of my invention is to construct a wire-distributing machine in which the strain incident to the winding on or unwinding of the wire from the spool is always evenly distributed through the frame by which the spool is carried, this evenness of the distribution of the strain being the result of the special features or details of construction which I shall now proceed to describe.

Referring to the drawings, 1 represents the general frame of the machine. Adjacent to the side members 2 2 of the frame and running parallel therewith and extending a suitable distance rearward are beams 3 4, which are connected to the side members 2 by the lateral horizontal extensions 5 5 of the vertical members of a U-shaped brace-bar 6, connecting the opposite sides of the frame, the form of this brace-bar accommodating variable sizes or diameters of spools mounted on a superposed shaft. These lateral extensions form the shafts for the driving-wheels 7 7, which turn loosely thereon in the space thus formed between the members 2 3 and 2 4. The

inner surface of each drive-wheel has secured thereto a gear-wheel 8, with the teeth of which mesh the terminal pinions 9, carried at the ends of the superposed spool-shaft 10, mounted in the upper forked ends of the standards 11, which are secured to the beams 3 and 4, respectively, the spool-shaft being prevented against displacement out of its bearings by the horizontal deflected portions or arms 12 12, (see Fig. 7,) forming a continuation of one of the members of the forked bearings for said shaft. Loosely mounted on the spool-shaft is a disk 13, and adjacent thereto is the spool or reel 14, also loosely mounted on the spool-shaft. The face of the disk adjacent to the spool has disposed on each side of the center thereof the parallel blocks or strips 15, which are adapted to receive between them the coupling block or strip 16, carried by the adjacent end of the spool, the latter being first slipped over the spool-shaft and then coupled to the disk 13, as indicated, when a collar 17, passed over the shaft and clamped thereto, prevents the uncoupling of the parts. The disk, on the other hand, is prevented from disengaging itself from the spool when once coupled thereto by the ratchet-wheel 18, keyed to the spool-shaft on the opposite side of the disk, with which ratchet-wheel cooperates a pawl 19, pivoted at one end to the side of the beam 4. Formed integrally with or secured to the ratchet-wheel is an arm 20, through whose free deflected end 21 is passed an adjusting-bolt 22, whose inner end carries a friction-block 23, adapted to cooperate with the periphery of the disk 13.

We have seen that the spool-shaft is positively coupled to the gears 8 by the pinions 9, so that as the machine is drawn along the ground in the direction as indicated by the arrows in connection with the wheels 7 rotation will be imparted to the spool-shaft in the opposite direction, (that is, the only direction in which the pawl 19 permits the ratchet-wheel 18 to turn.) Accordingly the arm 20 will turn in the same direction, the friction between the block 23 of said arm and the disk 13 permitting the latter and the spool coupled to it to turn in the opposite direction on the spool-shaft at a rate which is consistent with the proper degree of tension intended to be imparted to the wire 24 as it unwinds from

the spool during the forward advance of the machine. The pawl 19 of course prevents the spool-shaft at any time from turning in the wrong direction and thus slackening the tension which it is desired shall be imparted to the wire at all times.

In winding the wire on the spool, (which must be done, of course, from the side of the machine opposite to that in which it is unwound from the spool, since the machine must travel toward the opposite end of the strand being wound,) the arm 20 revolving in the direction already indicated, it will cause the spool to revolve with it in the same direction, (being reverse to the spool's unwinding direction,) and thus wind the wire over the spool, as indicated by the dotted lines in Fig. 1, the tension of the wire being always regulated by the friction between the block 23 and disk 13.

As the wire is wound on or unwound from the spool it is guided between the vertically-disposed rollers 25, mounted between the lugs 26 of the standards 27, whose forked lower ends embrace a transverse bar 28, along which they can be adjustably shifted and can be clamped thereto in proper position by the binding-bolts 29. The bar 28 is supported at its opposite ends on the beams 3 and 4, respectively, being held temporarily thereto by the clips 30, which span the reduced ends of the bar and through suitable openings of whose free ends a pin 31 can be dropped, thus securing the said transverse bar in place. As seen from the drawings, the clips 30 are disposed on each side of the machine, the bar 28 being shifted back and forth according as the machine is winding or unwinding wire.

That the draft-animals may be properly hitched to the machine according to the nature of the distribution of the wire which is being effected, I devise the following means for the shifting of the whiffletree and shafts from one side to the other, thus insuring that the animals will always be disposed in a manner consistent with an even and easy distribution of the wire and insuring an evenness of strain throughout the machine-frame. (Of course it is obvious that the horses must be hitched on different sides of the machine, according to the side of the fence along which the wire distribution is to be made.) Through the middle of the front member of the frame 1 is pivotally secured the vertical arm of a U-shaped coupling-bar 32, whose opposite vertical arm has pivotally secured thereto at its free end the whiffletree 33. The opposite ends of the whiffletree are each provided with a slot 34, through which is adapted to be suspended a hooked rod 35, adapted when the whiffletree is swung into position on either side of the machine to seize the horizontal member of the U-shaped coupling-bar, the parts being subsequently tightened by the nut or key 36 operating on the projecting screw-threaded end of the hooked rod, a suitable washer 37 being interposed between the nut and whiffletree. The

whiffletree has secured thereto the shafts 38, as usual. To hitch the animals to the opposite side of the machine, the key 36 is loosened, allowing the hooked end of the rod 35 to be disengaged from the bar 32. When the rod 35 is withdrawn through the slot 34, the whiffletree is swung to the opposite side of the machine, the hooked rod inserted in the slot at the opposite end of the whiffletree, and the parts again secured, as already indicated. Of course the rod 35 when once inserted in place prevents the whiffletree from swinging outwardly, and to afford a more substantial connection for the whiffletree to the frame I provide at each side of the front of the machine an abutting strip or block 39, against which the coupling-bar 32 may bear, and thus limit the inward swing thereof, thus firmly securing the bar 32 between the front beam of the frame and the block 39.

Having described my invention, what I claim is—

1. In a wire-distributing machine, the combination of a suitable frame, driving-wheels carried by the same, gear-wheels secured to the driving-wheels, a spool-shaft having terminal pinions cooperating with the gear-wheels, a friction-block carried by the spool-shaft and adapted to rotate therewith, a spool loosely mounted on the spool-shaft, a disk also mounted loosely on the spool-shaft, and means for coupling the spool and disk, the latter being adapted to cooperate with the friction-block, substantially as set forth.

2. In a wire-distributing machine, the combination of a suitable frame, driving-wheels carried by the same, a spool-shaft adapted to be rotated by said driving-wheels, a ratchet-wheel secured to the said shaft, an arm forming part of or secured to said ratchet-wheel, a pawl cooperating with said ratchet-wheel, an adjustable friction-block carried by said arm, a disk loosely mounted on the spool-shaft, a spool also loosely mounted on the spool-shaft, means for coupling said disk and spool, the friction-block being adapted to bear against the periphery of the disk, substantially as set forth.

3. In a wire-distributing machine, the combination of a suitable frame, parallel beams disposed along the sides of said frame, clips carried at each end of each beam, a transverse bar adapted to be inserted under the clips, a pin adapted to be passed through openings in the ends of the clips whereby the said transverse bar is temporarily retained on the frame by said clips, and suitable guide-rollers carried by said transverse bar, substantially as set forth.

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

GEORGE A. FEDER.

Witnesses:

SOLOMON MUELLER,
E. STAREK.