

(No Model.)

C. S. STROWBRIDGE.

TENSION REGULATING DEVICE FOR WIRE WINDING MACHINES.

No. 438,782.

Patented Oct. 21, 1890.

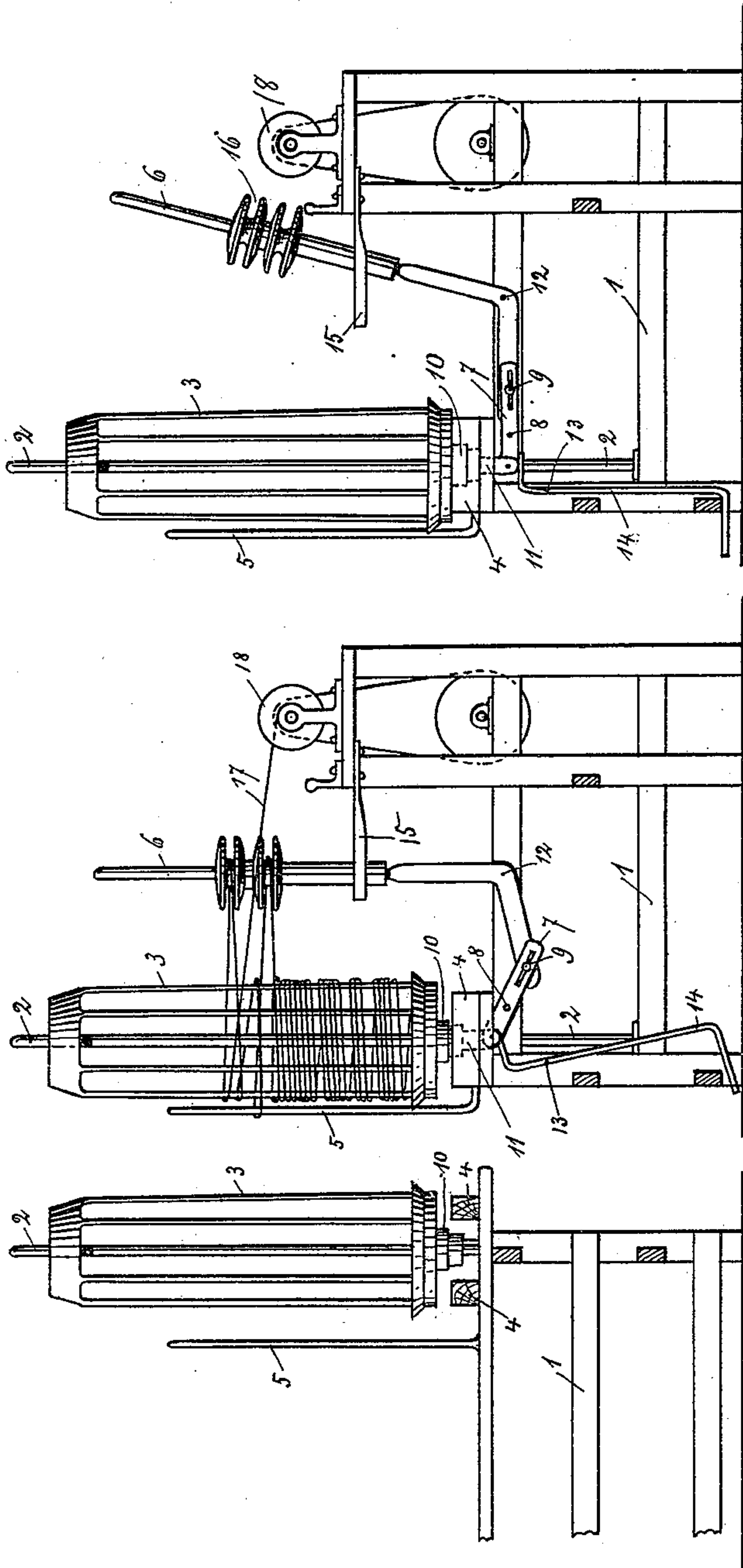


Fig. 2.

Fig. 1.

Fig. 3.

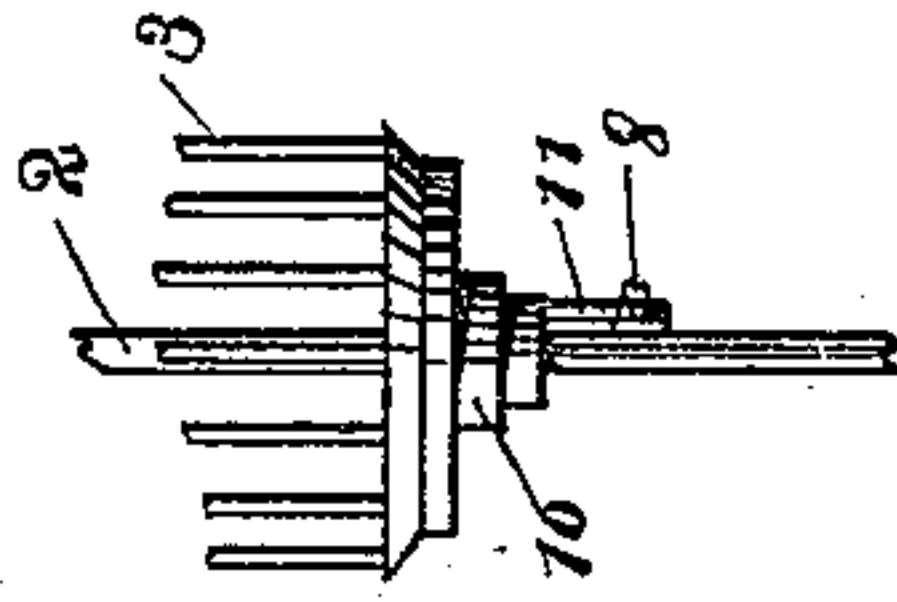


Fig. 6.

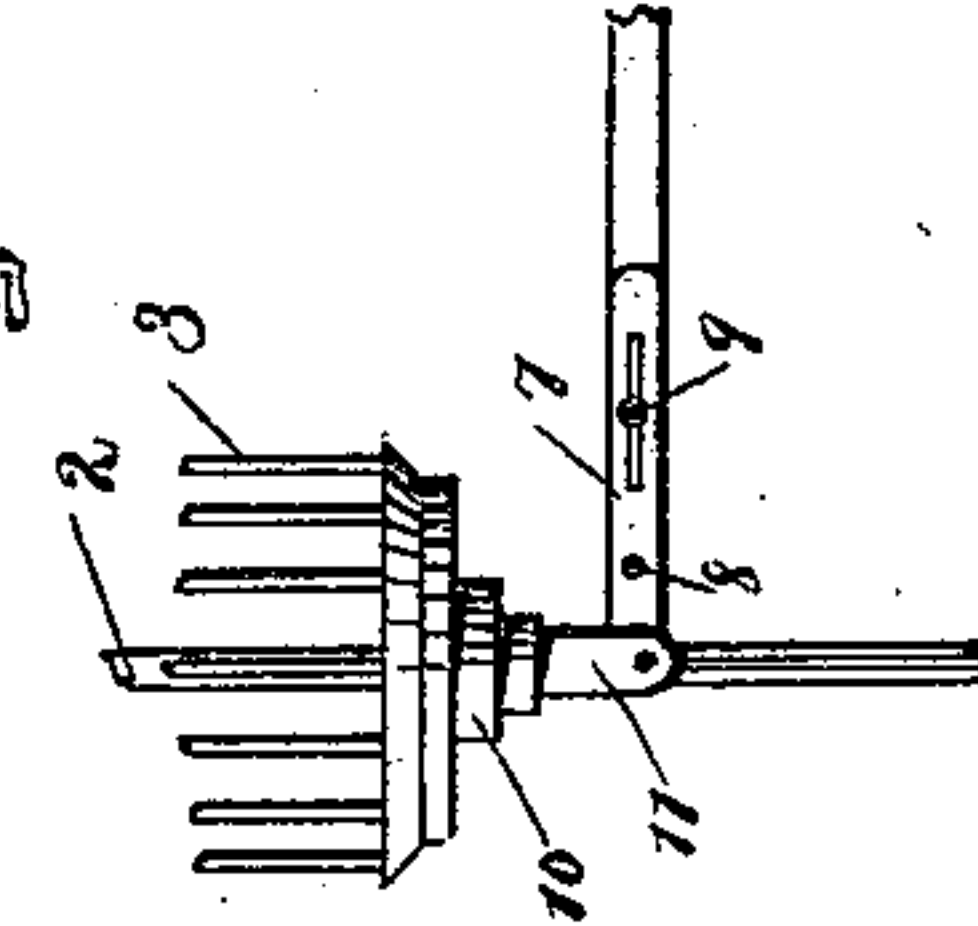


Fig. 5.

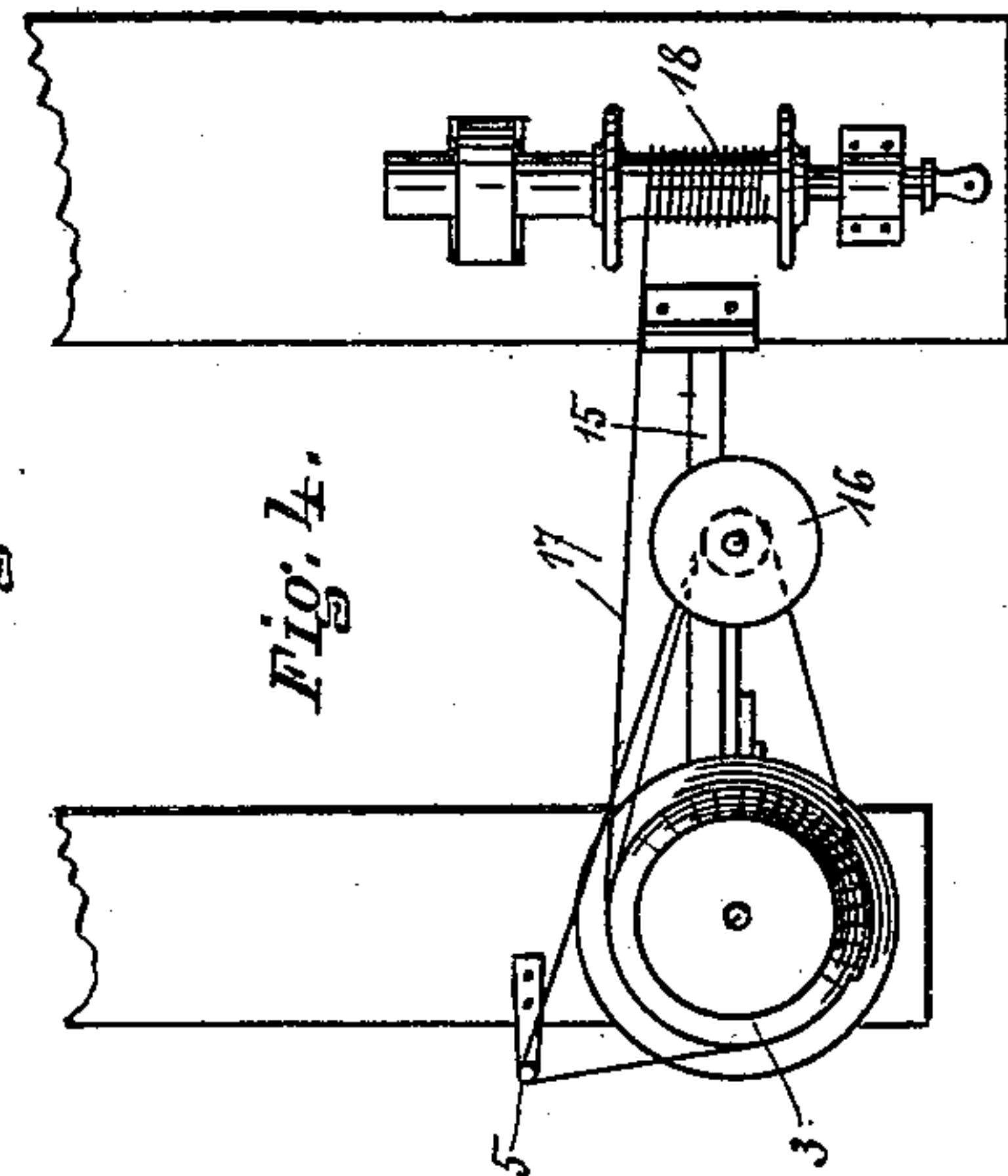


Fig. 4.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

CLARENCE S. STROWBRIDGE, OF HAMILTON, NEW YORK, ASSIGNOR TO THE  
HAMILTON WIRE CLOTH COMPANY, LIMITED, OF SAME PLACE.

## TENSION-REGULATING DEVICE FOR WIRE-WINDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 438,782, dated October 21, 1890.

Application filed February 7, 1890. Serial No. 339,558. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE S. STROWBRIDGE, of Hamilton, in the county of Madison and State of New York, have invented certain  
5 new and useful Improvements in Tension-Regulating Devices for Wire-Winding Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the  
10 art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

15 My invention relates to machines for winding or spooling wire.

In the drawings which accompany and form a part of this specification, and in which similar figures of reference indicate like parts in  
20 the several figures, Figure 1 shows a side elevation, partly in section, of the machine in use. Fig. 2 shows the same parts as shown in Fig. 1 at rest or before the wire is applied. Fig. 3 shows the reel and adjacent parts as  
25 they would appear from the left of Fig. 2. Fig. 4 shows a top view of Fig. 1. Figs. 5 and 6 show details relating to the reel and to the movable collar on which it rests.

Referring to the drawings, 1 indicates the  
30 frame on which the mechanism is mounted. Secured in the frame and projecting above it is a spindle 2, on which is mounted the reel 3. The reel 3 is mounted loosely, so as to rotate on spindle 2, and sits upon friction-blocks 4 4  
35 on the frame when the several parts are in the position shown in Fig. 2. Adjacent to the reel is provided, secured to the frame, an upright post 5, around which the wire may be made to pass as it is drawn from the reel.

40 A tension-arm 6 is pivoted to the frame at 12, and is provided with or is part of a bell-crank lever, one arm of which extends substantially horizontally and is connected by a pin 9 to lever 7, pivoted at 8 to the frame,  
45 the pin 9 engaging a slot in the lever 7.

Upon spindle 2 is a collar 10, which is vertically movable and is connected by an arm or sleeve 11 with lever 7. Pivoted at 13 in  
50 the frame is a crooked lever 14, the upper end of which passes beneath and is adapted to engage the arm or sleeve 11, the lower end

extending to a convenient point to be operated by the foot. 15 is a guide for the swinging tension-arm 6, and 16 are a number of pulleys mounted on the arm 6. 17 indicates  
55 the wire, and 18 the bobbin or spool onto which it is to be wound.

The operation of the device is substantially as follows: In its normal position, or when the machine is not in motion, the reel 3 rests  
60 upon friction-blocks 4, which act as a brake on the free rotation of the reel. From the reel the wire is preferably passed around post 5, thence around one of the pulleys 16 on the tension-arm 6, thence around the reel, thence to  
65 another pulley 16, thence around the reel, and then to the spool 18. This particular threading of the machine is not essential; but it is the one shown. When the wire is drawn onto the spool, if the resistance becomes too great  
70 the tension-arm 6 will be drawn toward the reel, which, acting through the pivoted levers and sleeve described, brings the collar 10 to bear on the under side of the reel, raising it more or less off the blocks 4, thus reducing  
75 or relieving it of friction, when the wire will run freely.

In case of breakage of the wire during the spooling, the tension-arm 6 is allowed to fall away from the reel, actuated by the weight  
80 of the reel, and the reel will drop onto the blocks 4 and stop; and when in readjusting the wire it becomes desirable to rotate the reel it may be raised off of the friction-blocks by placing the foot on the lever 14, when the  
85 reel will rotate freely in either direction. The weight of the reel tends to throw or swing the tension-arm away from the reel.

It is evident that variations and modification in and from the construction described  
90 may be made without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the spindle, the reel,  
95 the brake-block, the sliding collar on the spindle and on which the reel rests, and a tension-arm pivoted to the frame and adapted to swing toward the reel into substantially vertical and working position and connecting with the collar, substantially as set forth.  
100

2. The combination of the vertical spindle,

the reel mounted on the spindle, the friction-block at the foot of the spindle under the reel, the sliding collar on the spindle, and the swinging tension-arm pivoted to the frame  
5 and adapted to swing toward the reel into substantially vertical and working position and connecting with and operating to raise the collar as it swings toward the reel, substantially as set forth.  
10 3. The combination of the spindle, the reel mounted thereon, the friction-blocks under the reel, the collar under the reel, the tension-arm connected with the collar, and the foot-lever connecting with the collar, substantially  
15 as set forth.

4. The combination of the spindle, the reel mounted thereon, the friction-blocks under the reel, the vertical post adjacent to the reel, the collar on the spindle, the swinging tension-arm, and the connections between the collar 20 and tension-arm, substantially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

CLARENCE S. STROWBRIDGE.

Witnesses:

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A. F. LINDSLEY.