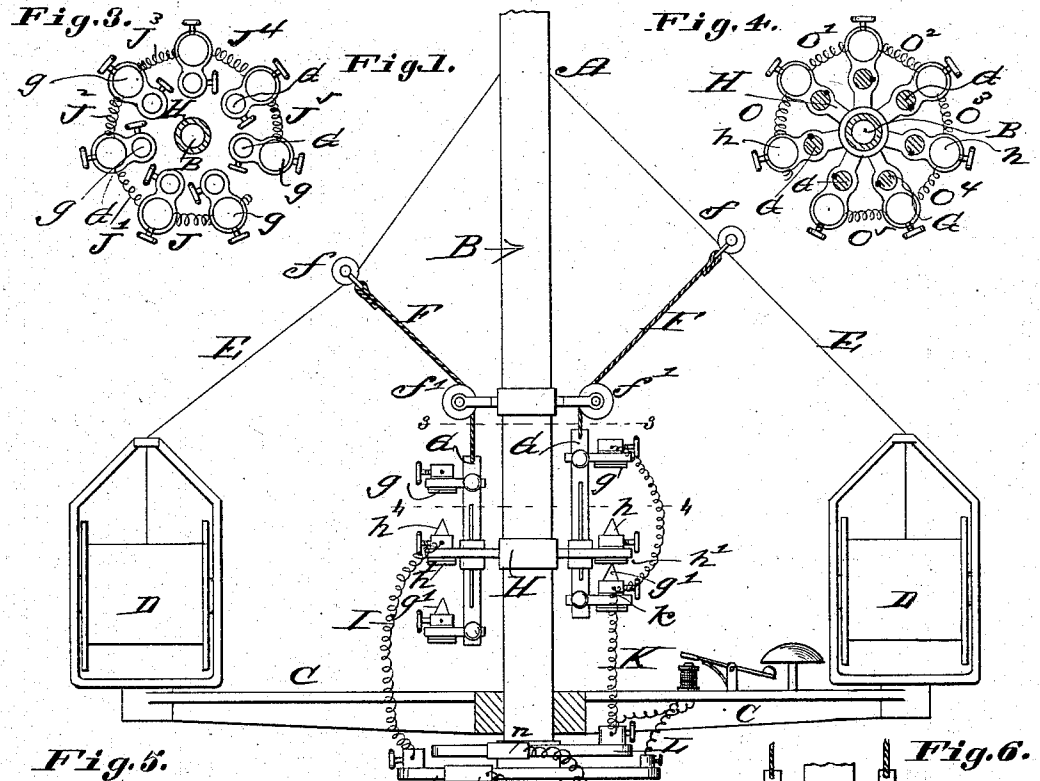
(No Model.)

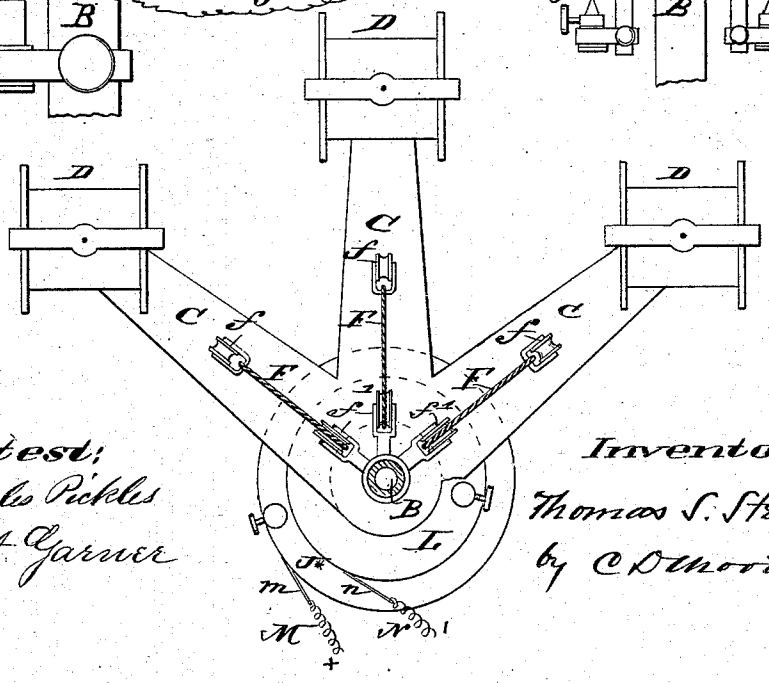
T. S. STEVENSON.

WIRE ROPE MACHINE.

No. 288,677. Patented Nov. 20, 1883.







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UNITED STATES PATENT OFFICE.

THOMAS S. STEVENSON, OF ST. LOUIS, MISSOURI.

WIRE-ROPE MACHINE.

SPECIFICATION forming part of Letters Patent No. 288,677, dated November 20, 1883.

Application filed November 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. STEVENSON, of St. Louis, Missouri, have made a new and useful Improvement in Wire-Rope Machines, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side sectional elevation of the major part, and showing all the essential portions of the improved machine; Fig. 2, a plan of device shown in Fig. 1; Fig. 3, a section taken on the line 3 3 of Fig. 1; Fig. 4, a section taken on the line 4 4 of Fig. 1; and Figs. 5 and 6, details showing spindle, slides, points, and plates. The various views are upon different scales.

The same letters of reference denote the same parts.

In the manufacture of wire rope the various wires of which the rope is made must be fed into the machine at the proper degree of tension. The machine must also be in charge of an attendant, in order that new spools of wire may be supplied as the old ones are exhausted.

The aim of the present improvement is to provide an improved means for notifying the attendant whenever the wire is not running off the spools at the proper degree of tension or is exhausted.

A represents that portion of a wire-rope machine with which the present improvement is immediately connected, the spindle B supporting the arms C C C and the spools D D D in the usual manner, and the wires E E being fed from the spools in the ordinary way. The remaining essential portions of the machine are or may be similar to those heretofore in use.

Leading from each wire E is a cord, F. The connection of the cord with the wire is such as not to interfere with the feeding of the wire, the preferable form being that shown, the cord being attached to a wheel or roll, *f*, which rides upon the wire. The cord leads over a bearing, *f'*, to a slide, G. The slide is held and works upward and downward in a guide, H, which is attached to the spindle B. Whenever the wire slackens, the slide drops in the guide. The slide is provided with a suitable appliance—such as the plate *g*—and as the slide drops the plate is brought in contact with the point *h*, establishing an electrical circuit, and, in consequence, giving an alarm—say by ringing a bell, as indicated by Fig. 2, wherein an electrical bell of a well-known kind is shown in electrical connection with the battery. The plate *g* is suitably insulated, as well as the point *h*. This last-named part is supported upon the guide H. It is not essential, however, that the same part be employed to hold the point *h* that guides the movement of the slide. The electrical current passes to the point *h* through the wire I. The wire I, at its other end, is connected with the plate J*, which is fastened to the spindle B. There are as many cords F as there wires E, each cord at its lower end being attached to a slide, G, and each slide having a plate, *g*, as shown in Fig. 3, to form an electrical connection, as the slide drops, with a point, *h*, beneath. The points *h* are similarly supported upon the guide H. From the first of the plates *g* a wire, J, leads to the second of the plates; a wire, J', connects the second and third plates; a wire, J^2, the third and fourth, and so on, according to the number of spools in use, and from the last slide of the series a wire, K, leads to a plate, L, which is fastened to the spindle B.

The action of the device is then as follows: Should a wire E unduly slacken or run out, the corresponding slide, G, drops until the plate *g* touches the point *h*. This establishes the electrical circuit as follows: The current passes from the wire I, through the parts *h g*, to the wire J; thence to the next wire, J'; thence to the wires J^2 J^3, &c., and finally to the wire K and plate L.

As the spools, wires, and other parts above mentioned revolve upon the spindle B, provision must be made for connecting the plates J L with the battery. M N represent the wires leading therefrom. They are respectively furnished with terminal plates *m n*, which bear against the peripheries of the plates J* L, respectively, as shown in Figs. 1, 2. The various points *h h h*, as seen in Fig. 4, are connected by means of the wires O O', &c., so that whichever slide G drops the electrical circuit is established and the alarm given.

The principle of the improvement may be extended so as to cause the alarm to be given when the wires E are for any cause drawn too

far away from the bearings f'. To this end the slides G G may be furnished with points g', Figs. 1, 6, which, when the cords F F have sufficiently lifted the slides G G, encounter plates h' h', which are electrically connected with the points h h and wires O O', &c. The current then passes through the wires I O O', &c., K, the wire K for this purpose being connected at k with the point g'.

I claim—

1. The combination of the spindle B, the guide H, the slides G G, the plates g g, the points h h, the wires I K, the wires J J', &c., and the wires O O', &c., substantially as described.

2. The combination of the spindle B, the guide H, the points h h, and the wires O O' O^2 &c., as and for the purpose described.

3. The combination of the spindle B, the guide H, the guides G G, the plates g g, and the wires J J', &c., as and for the purpose described.

4. The combination of the wire E, the cord F, the spindle B, and the slide G, and the guide H, attached to said spindle, through which the slide G moves and is guided, for the purpose described.

5. The combination of the wire E, the spindle B, the cord F, the slide G, having a contact-surface, g, and the point h, and guide H for upholding said point, substantially as described.

Witness my hand this 25th of October, 1882.

THOMAS S. STEVENSON.

Witnesses:
C. D. MOODY,
SAML. S. BOYD.