

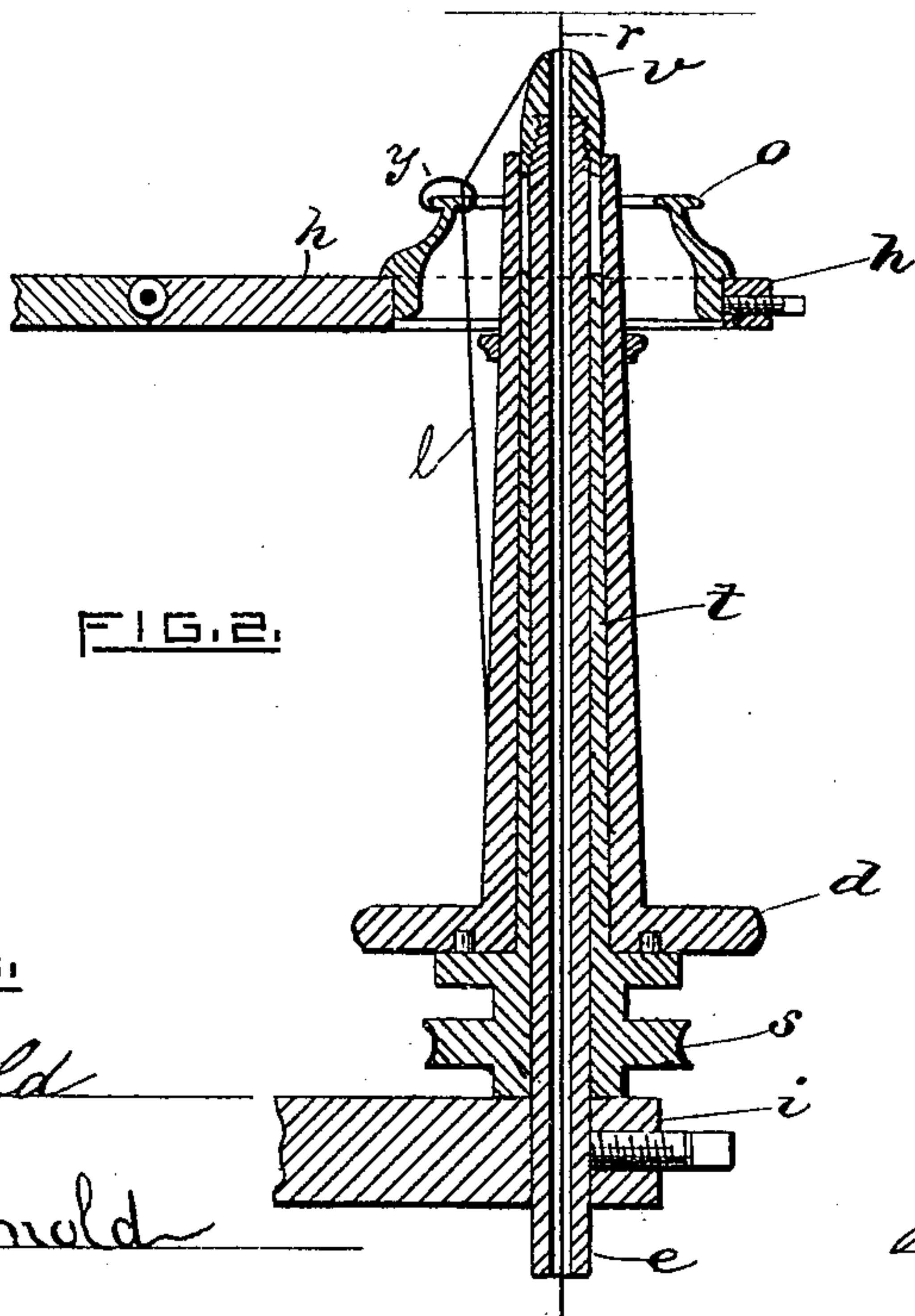
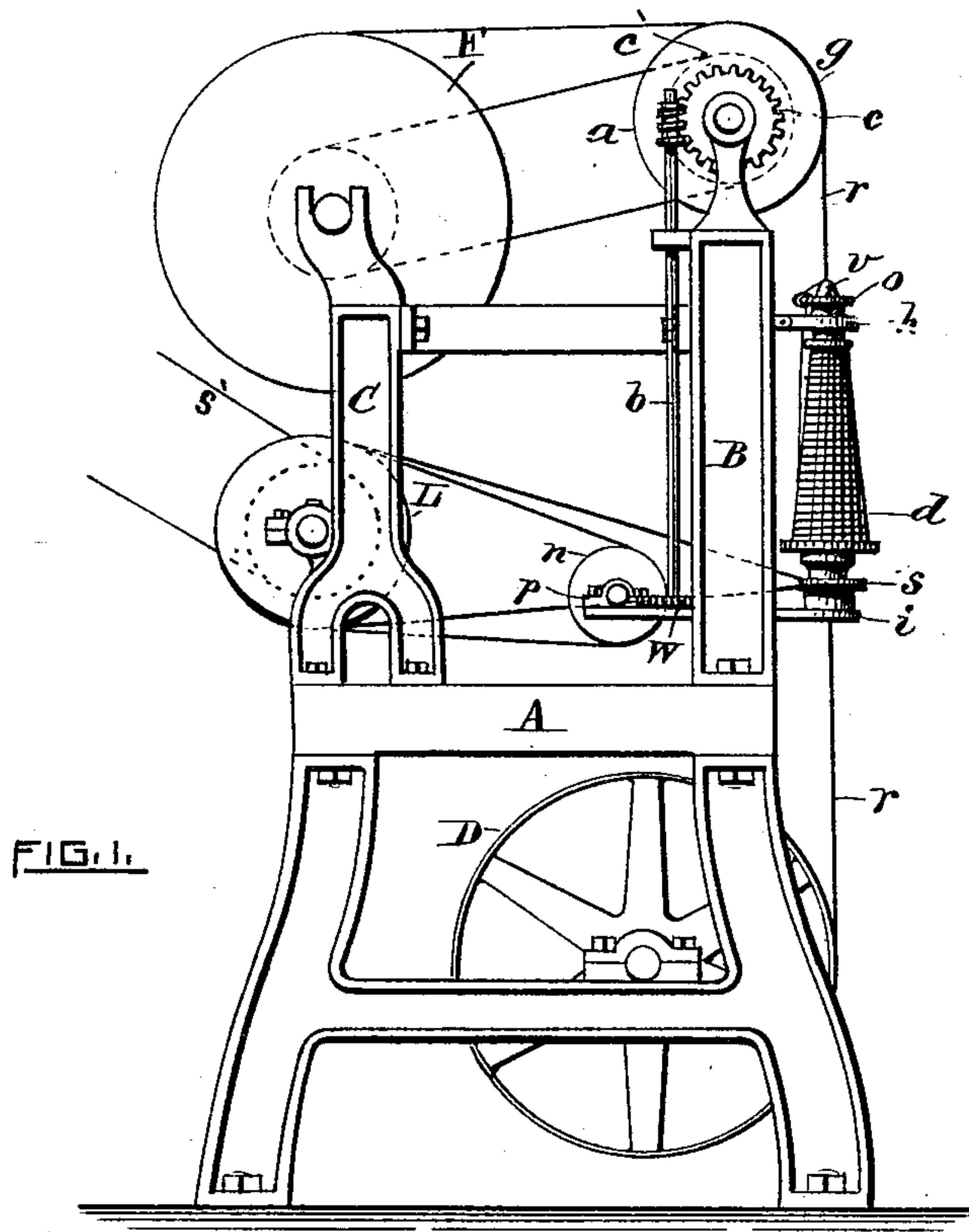
(No Model.)

J. McCahey.

MACHINE FOR COVERING WIRE.

No. 330,035.

Patented Nov. 10, 1885.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

JOHN McCahey, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE NEW ENGLAND BUTT COMPANY, OF SAME PLACE.

## MACHINE FOR COVERING WIRE.

SPECIFICATION forming part of Letters Patent No. 330,035, dated November 10, 1885.

Application filed May 21, 1884. Serial No. 132,262. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN McCahey, of Providence, in the county of Providence and State of Rhode Island, have invented certain  
5 new and useful Improvements in Machines for Covering Wire; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of  
10 reference marked thereon, which form a part of this specification.

This invention relates to those machines used for covering wire with a textile or metallic material for the purposes of insulation or protection, and is intended to accomplish the work  
15 with greater rapidity and make at the same time a better covering.

In winding-machines for this purpose as heretofore constructed it has been the custom  
20 to use a number of spools containing the covering material in one operation for the purpose of doing the work faster, but the difficulty met with in this mode is that the more spools used in covering a wire the greater the  
25 angle at which the threads will be wound on the wire; or, as I may say, the more spiraling they will be and more liable to be shoved one side so as to expose the wire, and the more strands used in covering a wire the greater the  
30 liability will be of the strands overriding each other and making faulty places. On my machine the object has been to attain a high speed with a single spool of covering material, and this I accomplish by using a "ring and  
35 traveler" similar to those used in spinning cotton, &c., and as illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of the machine. Fig. 2 is a vertical section of the winding part, taken through the center of the spindle in direction from right to left in Fig 1.

The running parts of the machine are held in the standards B and C, which are secured to the bench or table A. These standards constitute  
45 one side of the machine, and the other side is a counterpart in all respects of the one shown. The winding devices are held by the plate *i*, which extends from one side frame to the other, and by another similar plate near the top  
50 of the frame, to which the ring-holder *h* is

hinged. These parts are shown enlarged in section, Fig. 2, and consist of a hollow stationary spindle, *e*, held fast by a set-screw in the plate *i*. A shell, *t*, is fitted to revolve freely on the spindle *e*, and has a whirl or  
55 pulley on its lower end to receive the belt that drives it. A spool, *d*, is fitted to go tightly on the shell *t*, and has also holes in its head to receive the pins in the disk on which it sets, to insure its turning with the shell. A taper-  
60 ing oval-shaped head, *v*, small enough for the spool to slide over, and having a hole through its center of a size that will just allow the wire to pass through, is fitted to the upper end of  
65 the spindle *e* with a screw-thread, so that it can be easily removed and another substituted when a different size of hole is required. The object of this head is to support the wire at the point where it is wound, and its surface is  
70 made very smooth, that the covering material may slip over it easily.

*o* is a ring similar to those used in ring-spinning machines for spinning cotton, &c. It is held in an opening in the plate *h*, which is  
75 hinged to its support so that it can be raised to admit the spool *d* to its place on the shell. *y* is the traveler that is generally used with such rings. It serves as a guide and drag on the covering-strand, which carries it around  
80 the ring as the spool revolves, and passes through it as fast as the wire takes it up. Travelers of different sizes are used to obtain more or less friction on the strand, as may be required. Any of the "take-up" or "feed"  
85 motions used in braiding or winding machines may be used in connection with the above-described winding devices. The one shown in the drawings consists of a drum, *g*, mounted  
90 on a shaft having bearings in the top of each side frame, and placed so that its face in front shall be exactly over the center of the spindle  
95 *e*. An upright shaft, *b*, having a bearing at its lower end in the plate *i* and near the upper end in an arm attached to the standard B, has a worm-wheel, *a*, on its upper end that  
engages in a worm-gear, *c*, fast on the shaft of the drum *g*. On the lower end of the shaft *b*  
a worm-gear, *W*, is put, which engages in a worm-wheel, *p*, that is fast on the horizontal  
100 shaft having bearings on the plate *i*. This



shaft receives motion from the cylinder L by a belt running on a pulley, *n*, on the end of the horizontal shaft. The cylinder L also drives the spool *d* by a belt running on the pulley *s* on the shell *t*. A reel, F, set in bearings in the top of the standards C, receives motion by a belt from a pulley on the end of the shaft of the drum *g*. A reel, D, in bearings in the lower part of the frame, holds the wire to be covered.

The operation is as follows: The wire *r* is passed up from the reel D through the hollow spindle *e* to the drum *g*, around which it takes one or more turns, as may be necessary to obtain friction to draw it from the reel, and then is wound up on the reel F. The thread *l* on the spool is then passed up inside of the ring through the traveler *y* and caught around the wire above the point *v*. Motion being given to the cylinder L by the driving-belt *s'*, the spool *d* is driven by the belt on the pulley *s*, and the thread *l* from the spool up to the wire carries the traveler *y* around with it and winds the thread around the wire, which is at the same time drawn through the hollow spindle by the drum *g*, that receives the proper motion by means of the worm-wheel *a* and worm-gear *c*, worm-gear *w*, and worm-wheel

*p*, and the belt from the cylinder L to the pulley *n*. As the severed wire is delivered from the drum *g*, it is taken up on the reel F by the belt between the two. The friction on the thread is governed by the weight of the traveler *y*, which acts as a drag to hold back on the thread and deliver it only so fast as it is taken up around the wire. In this way the thread, being relieved of the strain of turning the spool, is held at a uniform tension and admits of a very high rate of speed being given to the spool, which is also favored by all the winding motions being concentric and evenly balanced on all sides. This is very important in winding fine wire with delicate silk thread for magnets in which the thread will hardly bear the strain required to turn the spool when nearly empty.

I claim—

The combination of the ring *o*, traveler *y*, shell *t*, and means for rotating the shell and stationary hollow spindle *e*, substantially as and for the purpose herein set forth.

JOHN McCAHEY.

Witnesses:

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