(No Model.)

R. W. GROSVENOR.

REWINDING SHAFT FOR PAPER ROLL MACHINES.

No. 416,782. Patented Dec. 10, 1889.

FIG. 1.

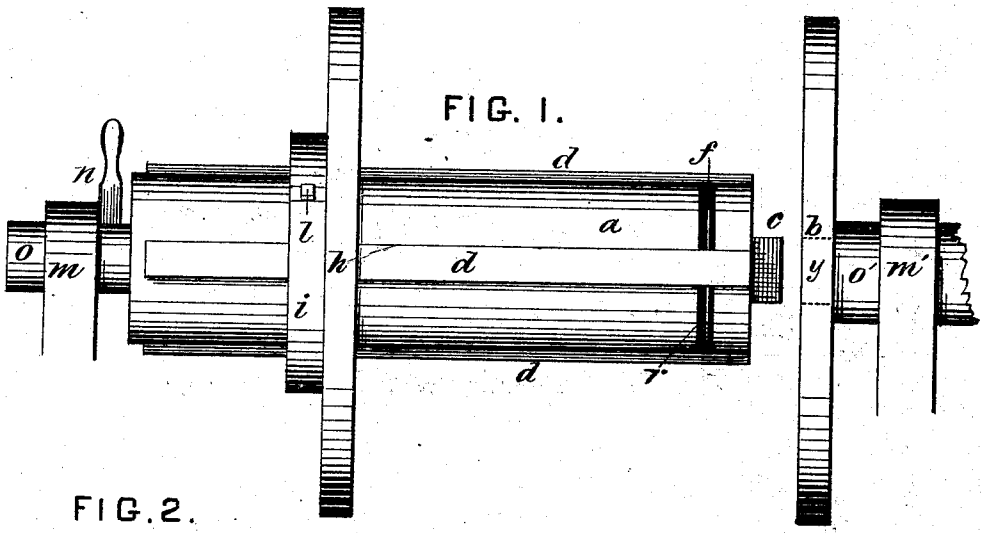


FIG. 2.

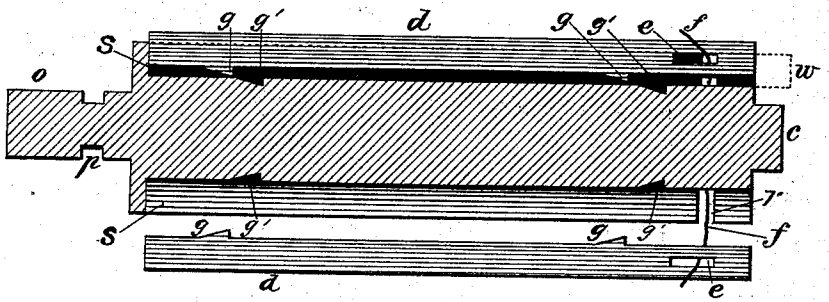
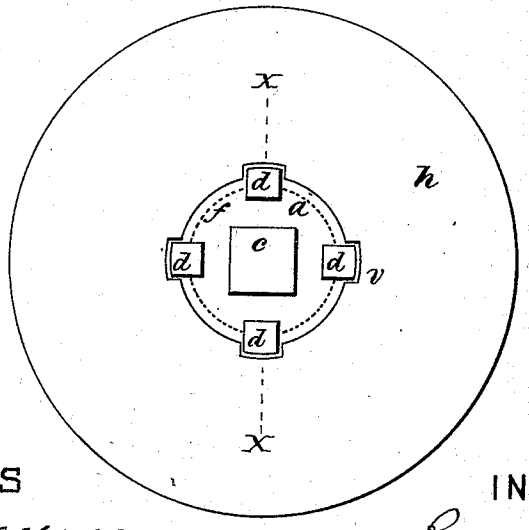


FIG. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

ROYAL W. GROSVENOR, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO SABIN ROBINS, OF SAME PLACE.

REWINDING-SHAFT FOR PAPER-ROLL MACHINES.

SPECIFICATION forming part of Letters Patent No. 416,782, dated December 10, 1889.

Application filed July 1, 1889. Serial No. 316,151. (No model.)

To all whom it may concern:

Be it known that I, ROYAL WELLINGTON GROSVENOR, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Rewinding-Shafts for Paper-Roll Machines, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to provide a shaft capable of being diminished in diameter after the paper is wound upon it, so as to facilitate its withdrawal from the roll. The shaft is made of any suitable material, preferably cylindrical, and channeled or grooved longitudinally, so as to receive bars adapted to be raised and held somewhat above the convex surface of the cylindrical roll, or to sink into the said channels, when desired, thus releasing the roll wound thereon.

In the drawings, Figure 1 is an elevation of my device. Fig. 2 is a longitudinal section of the shaft through the line $x\,x$, Fig. 3, showing one bar d lifted out of its channel s and ring f broken. Fig. 3 is an end view of the shaft a and the stud c, and with the flange h in proper position.

My invention is constructed as follows: a is a cylinder of iron having an ordinary journal o on one end revolving in the usual bearing m. At the other end is a square stud c, fitting into a corresponding aperture y in the revolving head b, from which it receives its motion. The cylinder a is channeled longitudinally, as shown at s, Fig. 2, to receive four bars d, placed equally distant and capable of limited longitudinal and vertical motion. The bars d have each a slot or mortise e, through which a cord or wire ring f passes, by which they are loosely secured in their channels. A circular slot r is turned in the cylinder a to receive the wire ring f. Each of the bars d has also two or more lugs g, in the shape of inclined planes, by which they rest on the bottom of the channels s. The bottoms of the channels s are cut with notches g', adapted to receive the lugs g when the bars d are shifted toward the right, Figs. 1 and 2, as shown by the dotted lines w. The journal o of the cylinder a has a circular slot p to receive the latch n, which, when in place, prevents the cylinder a from moving laterally. A flange h is fitted to the cylinder a and secured at any desired point by the set-screw e. It rests only on the cylinder a, having notches v cut to allow free motion of the bars d.

Operation: To use this device the cylinder a, with bars d and flange h in place, is brought into position. The square stud c is inserted into the square mortise y in the rotating head b, where it is secured by the latch n being brought down into the circular slot p. The cylinder a abuts against the plate of the head b and the bars d are forced back into the position shown in the drawings, with the lugs g resting on the bottom of the channels s and the bars d projecting above the surface of the cylinder a. The paper is then wound on in the usual manner. When it is desired to withdraw the shaft from the roll, the latch n is raised, and the shaft is shifted toward o, disengaging the stud c. It is then lifted out of its bearing in the support m. If now the stud c is made to strike against the plate of the head b, the bars d, carrying the roll of paper, will move toward c, the lugs g will drop into the notches g', allowing the bars d to sink into their channels s, and the paper is released. This flange is an important portion of my invention, and has two functions: First, to retain in place the bars d at one end, and at the same time allow all their vertical movement in the notches v of said flange, and, second, by its adjustability along the cylinder a to adapt the shaft to roll any width of paper desired.

I claim—

A rewinding-shaft for a paper-roll machine, having a cylinder a with longitudinal channels s, with notches g' at the bottom of the channel, and circular channel r, to receive a retaining-ring f, in combination with the bars d, having the slots e, and lugs g, fitting into and operating in connection with the cylinder a, in combination with the revolving head b, substantially as described.

The foregoing specification of my invention signed by me this 24th day of June, A. D. 1889.

ROYAL W. GROSVENOR.

Witnesses:

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