(No Model.)

E. & R. DAWES.

TWISTING MACHINE.

No. 590,827. Patented Sept. 28, 1897.

FIG. 1.

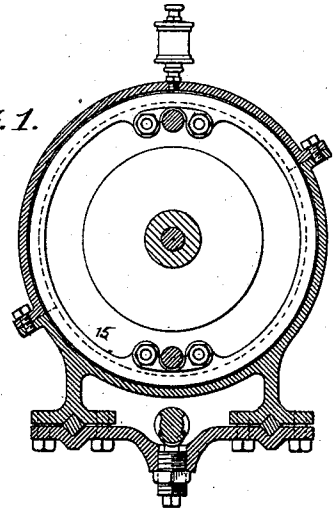


FIG. 4.

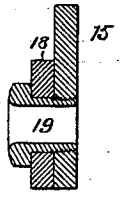


FIG. 6.

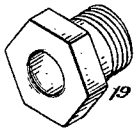


FIG. 3.

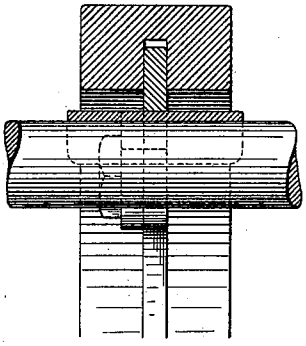


FIG. 7.

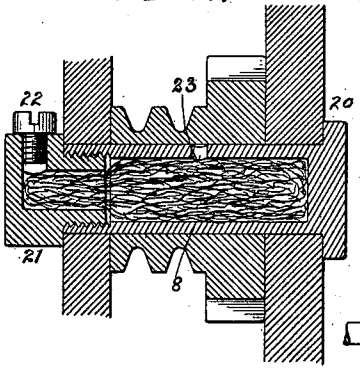


FIG. 5.

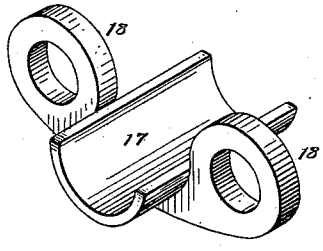
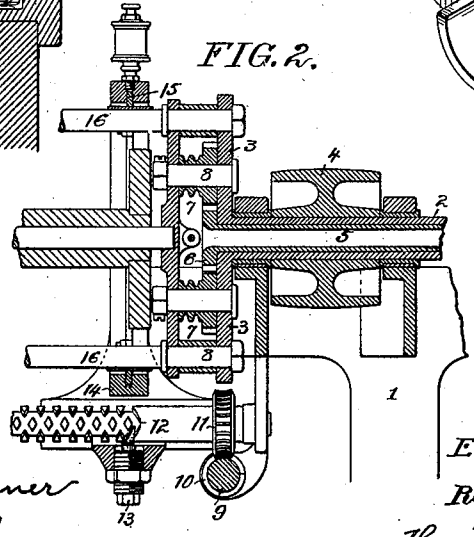


FIG. 2.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDMUND DAWES AND ROBERT DAWES, OF PHILADELPHIA, PENNSYLVANIA.

TWISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 590,827, dated September 28, 1897.

Application filed January 23, 1896. Serial No. 576,597. (No model.)

To all whom it may concern:

Be it known that we, EDMUND DAWES, a subject of the Queen of Great Britain and Ireland, and ROBERT DAWES, a citizen of the United States, residents of Philadelphia, Pennsylvania, have invented certain Improvements in Spinning and Twisting Machines, of which the following is a specification.

Our invention consists of certain improvements in the spinning or twisting machine for which Letters Patent No. 481,787 were granted to Robert Dawes on the 30th day of August, 1892, the object of our present invention being to so construct such a machine as to simplify and cheapen the guide-ring for the traverse-frame. These objects we attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a transverse section of sufficient of the patented spinning or twisting frame to illustrate our present invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is an enlarged section showing the connection between the guide-ring of the traverse-frame and one of the rods of the winding-flier. Fig. 4 is an enlarged section of another portion of said connection. Figs. 5 and 6 are enlarged perspective views illustrating elements of the connection, and Fig. 7 is an enlarged sectional view of the bearing for one of the draft-capstans of the winding-flier.

In Fig. 2, 1 represents part of the fixed frame of the machine, having bearings for the tubular spindle 2 of the winding-flier 3, which is rotated by means of a belt applied to a pulley 4, a hollow shaft 5 passing through the tubular spindle 2 and having at the inner end a spur-wheel 6 for engaging with spur-pinions on the draft-capstans 7, which are mounted so as to turn upon spindles 8, carried by the end frame of the winding-flier 3.

To a depending bearing on the frame 1 of the machine is adapted a shaft 9, which has a worm 10 engaging with a worm-wheel 11 on a shaft 12, having formed thereon a right and left hand screw-thread for engagement with a shoe carried by a pin 13 on the traverse-frame 14, the latter being grooved for the reception of a ring 15, mounted upon the longitudinal rods 16 of the winding-flier, this ring carrying the guide for the rope, cord, or strand which is being spun or twisted, so that said guide both rotates with the flier and is moved longitudinally to and fro from end to end of the spool in order to lay the rope, cord, or strand properly thereon.

In order to simplify and cheapen the construction of the guide-ring, we now make the same simply in the form of a flat ring of steel and connect the same to the longitudinal rods 16 of the winding-flier by means of shoes 17, which partially embrace said rods and have projecting ears or lugs 18, which are secured to corresponding ears or lugs on the inner face of the ring 15 by means of hollow bolts 19, as shown in Fig. 4, either of these hollow bolts performing the additional function of a guide for the rope, cord, or strand which is being formed, so that the provision of a special and separate guide is rendered unnecessary.

The thin steel ring which we employ to carry the rope-guide in the present machine is much stronger than the cast-iron ring before used and, owing to its greatly-decreased bulk, is not subject to such expansion, by reason of frictionally-developed heat, as the bulky cast-iron ring. Hence it can be fitted to the traverse-ring with very little clearance without risk of binding therein by reason of its expansion.

The spindles 8, upon which are mounted the draft-capstans 7 of the winding-flier, are hollow, as shown in Fig. 7, each spindle having at one end a head or flange 20, bearing against the outer plate of the end frame of the winding-flier, the opposite end of each of the hollow spindles 8 being threaded internally for the reception of the externally-threaded portion of a hollow plug 21, which has formed in it a right-angled passage communicating with the interior of the hollow spindle, the radially-extending portion of this passage being closed in any suitable manner—as, for instance, by means of a screw 22, as shown in Fig. 7. Provision is thus afforded for readily filling the hollow spindle 8 with oil, grease, or other lubricant which can gain accsss to the bore of the draft-capstan through an opening 23 in said hollow spindle, so as to

provide for the proper lubrication of said draft-capstan for long periods without attention.

The hollow spindle preferably contains a loose filling of cotton-waste, wicking, or the like, from which the lubricant can drain slowly, so as to properly supply the lubricant to the bearing and prevent any excess of such supply.

The term "thin" as applied in this specification to the guide-ring 15 is intended to mean a ring which is much less in thickness than in radial dimensions or distance between its inner and outer faces. By making the ring of steel this diminution in the thickness of the same is possible, but the shoes 17 then become necessary in order to provide the proper bearing for the guide-ring upon the longitudinal rod of the flier.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. The combination of the longitudinal rod of the winding-flier, the traverse-frame, a thin guide-ring engaging with a groove in said traverse-frame and having inwardly-projecting lugs, and a shoe extending longitudinally from said thin guide-ring and having a bearing on the longitudinal rod of the flier, said shoe having projecting lugs secured to those of the guide-ring, substantially as specified.

2. The combination of a longitudinal rod of the winding-flier, the traverse-frame, a ring adapted to a groove in said traverse-frame, a shoe engaging with the flier-rod, and a hollow bolt serving as a means of securing said shoe to the guide-ring, and as a guide for the rope, cord, or strand which is being formed, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDMUND DAWES.
ROBERT DAWES.

Witnesses:
FRED C. BENNER,
JOS. H. KLEIN.