(No Model.) 2 Sheets—Sheet 1.

R. DAWES.

TRAVERSE MOTION FOR SPINNING AND TWISTING MACHINES.

No. 481,787. Patented Aug. 30, 1892.

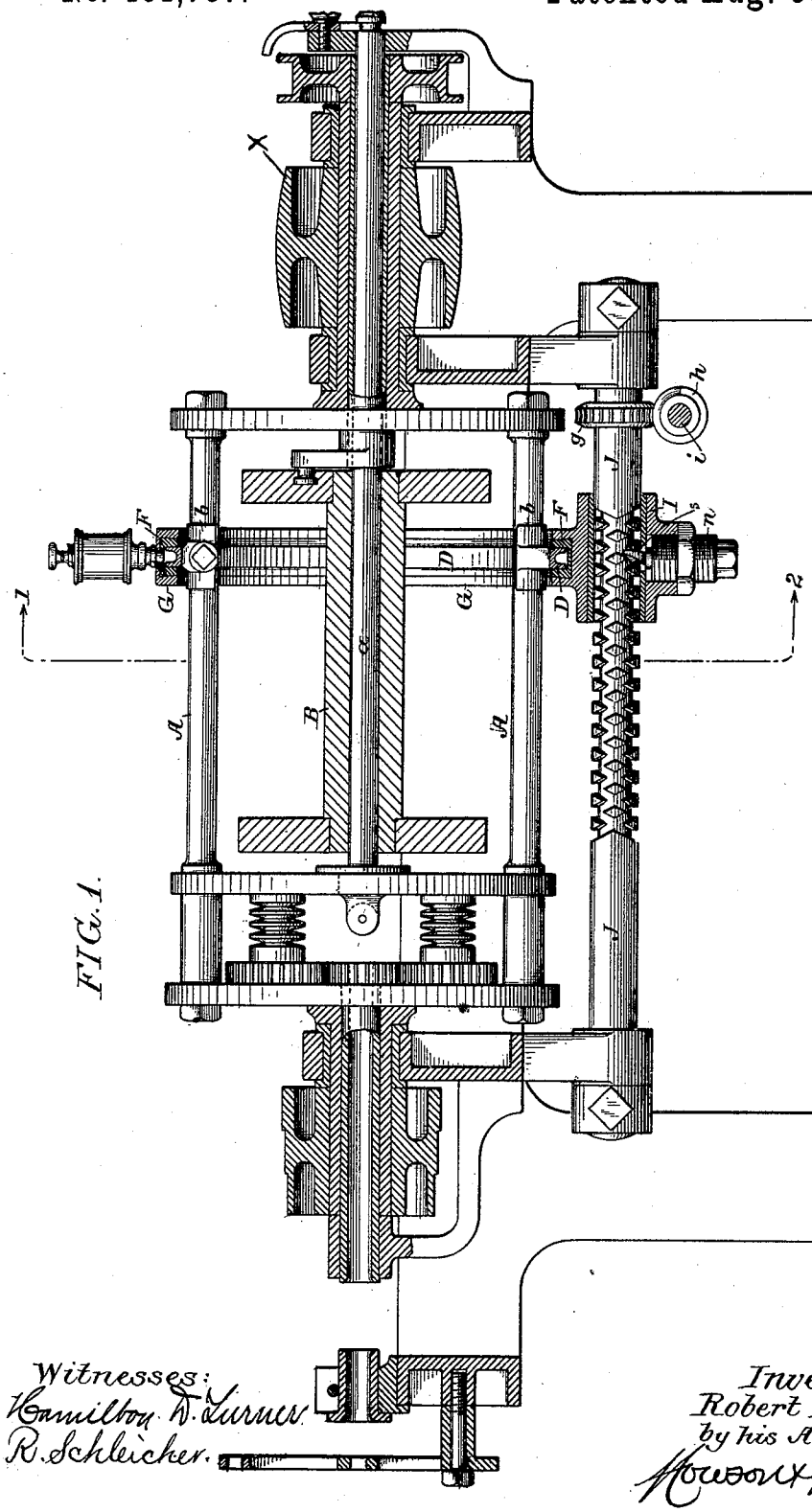

FIG. 1.

Witnesses:
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R. Schleicher.

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

(No Model.) 2 Sheets—Sheet 2.

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FIG. 3.

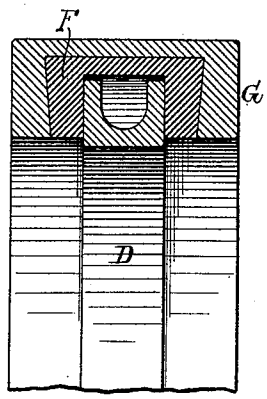
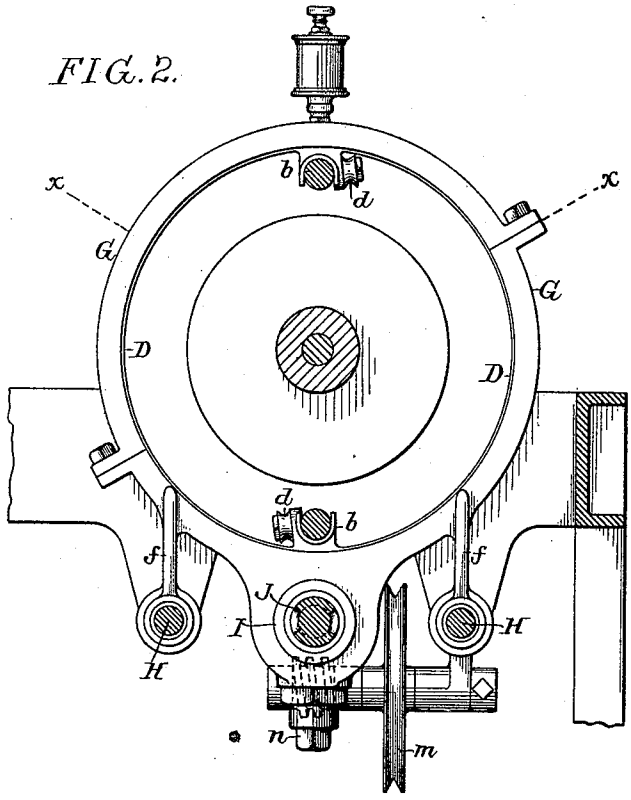


FIG. 2.



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UNITED STATES PATENT OFFICE.

ROBERT DAWES, OF PHILADELPHIA, PENNSYLVANIA.

TRAVERSE-MOTION FOR SPINNING AND TWISTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 481,787, dated August 30, 1892.

Application filed January 9, 1892. Serial No. 417,450. (No model.)

To all whom it may concern:

Be it known that I, ROBERT DAWES, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Traverse-Motions for Spinning and Twisting Machines, of which the following is a specification.

The object of my invention is to provide the flier of a spinning or twisting frame with a simple and effective form of reciprocating traverse-guide for properly directing the spun or twisted strand, cord, or rope (hereinafter for convenience called simply the "rope") to the bobbin mounted within the flier, and this object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section, partly in elevation, illustrating sufficient of a spinning or twisting machine to convey a proper understanding of the construction and application of my improved reciprocating traverse-guide. Fig. 2 is a transverse section on the line 1 2, Fig. 1; and Fig. 3 is an enlarged section illustrating the construction of part of the traverse-guide.

So far as regards the construction and operation of the spinning and twisting frame itself no special description will be necessary, as this forms no part of my present invention and may be varied in many ways, the device which I have selected to illustrate my invention being similar to that shown and described in the patent of Edmund Dawes, No. 437,022, dated September 23, 1890.

For the purposes of the present case it is sufficient to say that A A represent the opposite arms of a rotating flier-frame, the shaft of which has a pulley *x* for receiving a belt, whereby said frame is rotated, and within the frame is a detachable spindle *a* for the reception of the bobbin B, upon which the rope is to be wound.

Partially embracing each of the flier-arms is a bracket *b*, extending inwardly from a ring D, which surrounds the flier, each of these brackets having in the present instance a guide-roll *d*, either of which may serve as a guide for the rope, the latter passing from the delivery mechanism at one end of the flier over the guide-roll, and thence to the bobbin, upon which it is wound, the longitudinal movement of the roll, first in one direction and then in the other, causing the rope to be properly laid upon the bobbin from end to end of the same.

The ring D rotates with the flier and said ring has a bearing at front and rear upon a packing or bushing F, of antifriction metal, let into an internal groove in an annular frame G, which has feet *f*, guided upon longitudinal rods H, forming part of the fixed frame of the machine, said annular frame having a bushed sleeve I, which surrounds and travels longitudinally upon a right-and-left-threaded screw-shaft J, mounted in suitable bearings in the fixed frame of the machine and rotated continuously, but at a slow speed, by any suitable mechanism—for instance, by means of a worm-wheel *g*, meshing with a worm *h* on a transverse shaft *i*, to which is secured a pulley *m* for receiving a belt from any other available pulley of the machine.

The sleeve I carries a set-screw *n*, to the inner end of which is swiveled a shoe *s*, which engages with the threads of the screw-shaft J and as the latter is rotated causes reciprocative movement of the frame G, first in one direction and then in the other, to an extent dependent upon the length of the threaded portion of the shaft, the ring D being compelled to travel to and fro with the frame, so as to cause its roll *d* to properly direct the rope onto the bobbin, such traversing movement being effected without in any way restricting the free rotation of the ring D with the flier and without twisting or distorting said ring so as to cause it to bind upon the flier, for, as the frame G surrounds the ring D, forward or backward movement is simultaneously imparted to all parts of said ring and any torsional strain upon the latter is effectually prevented.

While the complete surrounding of the ring D by the frame G is preferred in carrying out my invention, the main feature of said invention might be attained even if the frame G comprised less than a full circle—as though, for instance, said frame was discontinued at the dotted lines *x x*, Fig. 2—the segment in all cases, however, being more than a half-circle, so as to apply power to the ring at points above the axis of rotation of said ring, as well as below the same. It will be under-

stood, particularly on reference to Fig. 3, that the ring D has no peripheral bearing upon the bushing F in the frame G, so that any slight expansion of said ring D which may result from centrifugal action will not cause the ring to bind in the bushing or in any way interfere with the free rotation of the ring by the flier.

I am aware that a traverse-motion has been devised in which the guide is carried by a ring rotating with the flier and engaging at one point on its periphery with a disk traversed to and fro through the medium of a right-and-left screw-shaft and intervening devices; but in such case the extent of engagement of the ring with the disk is extremely limited, so that torsional strain upon the ring necessarily results, with the effect of causing said ring to bind upon the flier, an objection which is effectually overcome by my invention.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the rotating flier of a spinning or twisting frame, a ring having a portion engaging with said flier and carrying a guide for the rope, a guided frame extending continuously more than half-way around said ring and having a nut, a right-and-left screw-shaft adapted to said nut, and means for rotating said screw-shaft, substantially as specified.

2. The combination of the rotating flier of a spinning or twisting machine with a ring having a portion engaging with said flier and carrying a guide for the rope, a guided frame completely surrounding said ring and having a nut, a right-and-left screw-shaft engaging with said nut, and means for rotating said shaft, substantially as specified.

3. The combination of the rotating flier of a spinning or twisting machine, a ring having a portion engaging with said flier and carrying a guide for the rope, a guided frame extending more than half-way around said ring and having an internal bushing providing a bearing therefor, a nut on said frame, a right-and-left screw-shaft engaging with said nut, and means for rotating said shaft, substantially as specified.

4. The combination of the rotating flier of a spinning or twisting frame with a ring having a portion engaging said flier and a guide for the rope, a guided frame having a portion extending continuously more than half-way around said ring and providing front and rear bearings therefor, but free from peripheral contact therewith, a nut on said frame, a right-and-left screw-shaft engaging with said nut, and means for rotating said shaft, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT DAWES.

Witnesses:
EUGENE ELTERICH,
HARRY SMITH.