(No Model.)

J. & R. ROBINSON.

SUPPORT FOR WHIRLS OF SPINDLE BOBBINS.

No. 482,695. Patented Sept. 13, 1892.

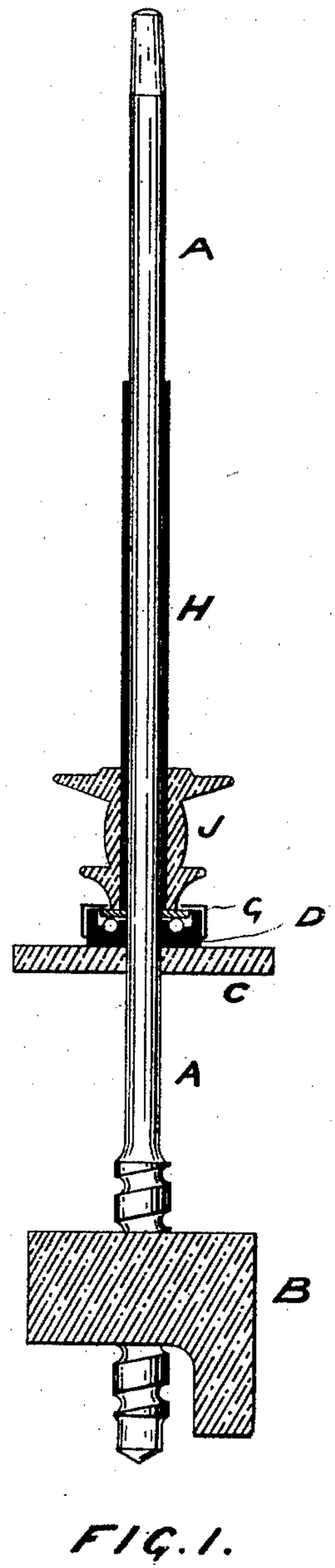

FIG. 1.

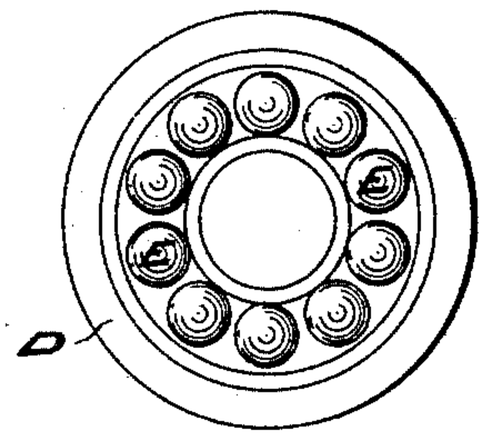

FIG. 3.

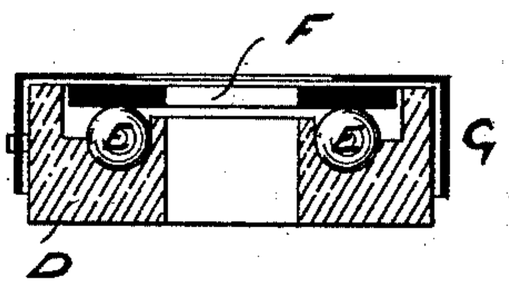

FIG. 4.

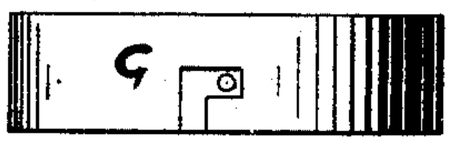

FIG. 5.

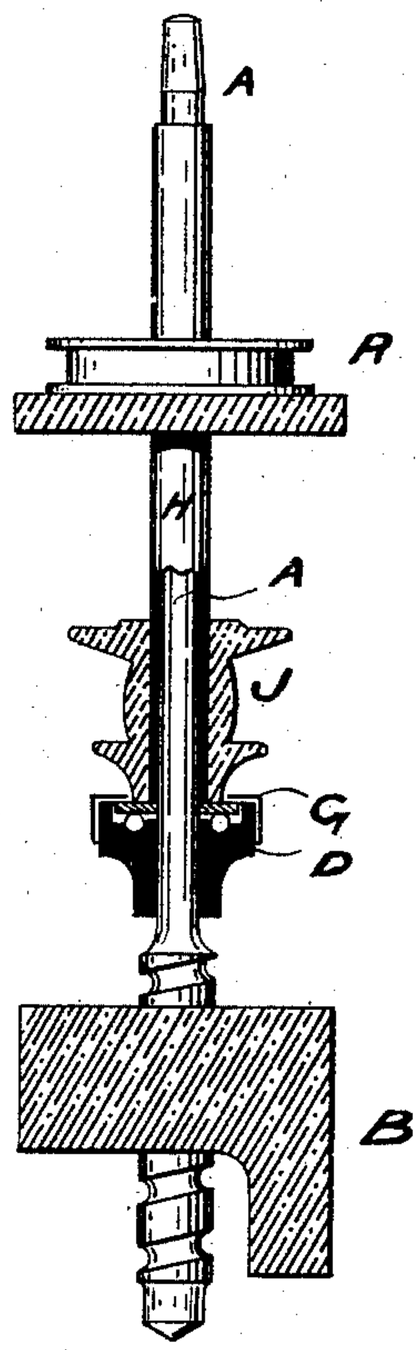

FIG. 2.

Witnesses:
E. B. Bolton
H. S. Palmer

Inventors:
Joe Robinson
Richard Robinson
By Richards & R
their Attorneys.

UNITED STATES PATENT OFFICE.

JOE ROBINSON AND RICHARD ROBINSON, OF DUDLEY HILL, NEAR BRADFORD, ENGLAND, ASSIGNORS OF ONE-HALF TO OLIVER BROOK LISTER, OF SAME PLACE.

SUPPORT FOR WHIRLS OF SPINDLE-BOBBINS.

SPECIFICATION forming part of Letters Patent No. 482,695, dated September 13, 1892.

Application filed January 8, 1892. Serial No. 417,396. (No model.) Patented in England March 26, 1891, No. 5,375.

To all whom it may concern:

Be it known that we, JOE ROBINSON and RICHARD ROBINSON, subjects of the Queen of Great Britain and Ireland, residing at Dudley Hill, near Bradford, in the county of York, England, have invented certain Improvements in Supports for Whirls of Spindle-Bobbins, (for which we have obtained Letters Patent in England, No. 5,375, dated March 26, 1891,) of which the following is a specification.

This invention has for its object the mounting of spinning and twisting bobbins or tubes on the machine-spindles in such a manner as to reduce the friction, and thereby to rotate the same with a less expenditure of power than is the case when mounted on the spindles in the manner as hitherto; and it consists in mounting each bobbin or tube and whirl upon a washer, the latter being supported by a number of balls placed in a grooved cup surrounding the spindle.

In describing our invention in detail reference is made to the accompanying drawings, in which—

Figure 1 represents an elevation of a fixed or non-rotating spindle used on cap spinning and twisting frames, the tube and some of the other parts being in section. Fig. 2 is a similar view showing our improvement applied to ring spinning and twisting frames. Figs. 3, 4, and 5 are enlarged details.

The fixed or non-rotating spindle A is secured to the rail B, and the bar C, commonly called the "lifter-plate," is moved vertically up and down the fixed or non-rotating spindle A in the usual manner. Upon the lifter-plate C, surrounding each fixed or non-rotating spindle A, we place a cup D, the section of which is more clearly shown in detail, Fig. 4, and is grooved for the reception of a number of balls E E, upon which is placed a washer F, incased by a cap G, the top plate of which is clear of the washer F in order that the same may rotate freely.

The bobbins or tubes H and driving-whirls J are constructed as hitherto; but instead of mounting the same on spindles with the base of the tube H and whirl resting upon a stationary plate or washer each tube and whirl rests upon the washer F, supported by the balls E E, as before described, so that on the rotation of the tube H and whirl J the frictional contact between the latter and washer F is such that the washer rotates also; but by the same resting on the balls E E the washer F rolls thereon, thereby converting the motion of the parts in frictional contact from that of rubbing into one of rolling, thus reducing the friction, and therefore the power required to drive the same.

When applying our invention to ring spinning or twisting frames, the ring-rail and ring R are constructed and operated as hitherto, but the cup D, in which the balls E are placed, is secured to the fixed or non-rotating spindle A, the other portions of the cup D being constructed for the reception of the base of tube H and whirl J upon the washer F in the manner as before described.

What we claim is—

In a spinning and twisting machine, the combination of the non-rotating integral spindle A, the grooved cup D, encircling the spindle A, the balls E E, the rotating washer F, the cap for retaining the said washer in position, the tube H, and driving-whirl J, substantially as set forth.

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

JOE ROBINSON.
RICHARD ROBINSON.

Witnesses:
WM. PREST,
E. H. BODEN.