No. 775,681. PATENTED NOV. 22, 1904.

J. E. PREST.

SPINNING SPINDLE.

APPLICATION FILED JULY 2, 1904.

NO MODEL.

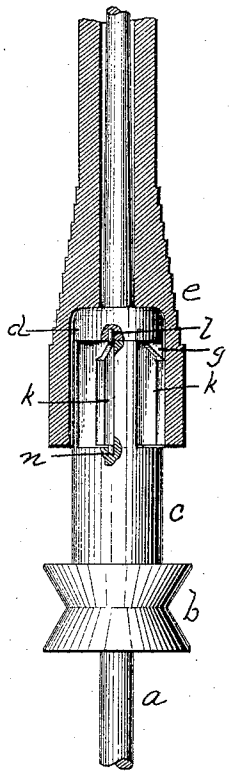


Fig. 1.

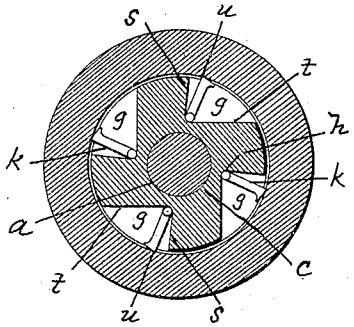


Fig. 2.

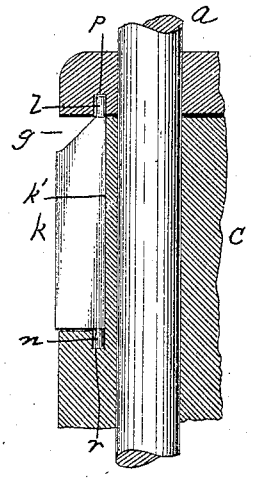


Fig. 3.



Fig. 4.

WITNESSES=

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No. 775,681. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

JOHN E. PREST, OF WORCESTER, MASSACHUSETTS.

SPINNING-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 775,681, dated November 22, 1904.

Application filed July 2, 1904. Serial No. 215,145. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. PREST, a citizen of the United States, residing in Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Spinning-Spindles, of which the following is a specification.

This invention relates to rotatable spinning-spindles adapted to connect with and rotate the bobbin by the operation of centrifugal action upon a clutching or engaging mechanism intermediate of the bobbin and the spindle; and it relates particularly to that class of spindles in which the said clutches or engaging devices are pivotally sustained in substantially vertical positions between the spindle and the bobbin and which are, when motion is imparted to the spindle, rotated horizontally on their axes by the centrifugal action produced by the rotation of the spindle or by said centrifugal action aided by atmospheric resistance until the outer edges of said clutches are thereby brought into contact with the walls of the chamber in the head of the bobbin, the clutches when in such contact being in a position intermediate of a tangential and a radial one.

The present invention has for its principal objects to simplify the swinging clutching-blades by doing away with rearward projections thereon for engagement with the spindle for the purpose of keeping the blades in the same direction around the circle when the bobbin is not in position and to relieve the clutching-blades and their pivots from the lateral strain produced by their engagement with the bobbin by providing lateral support to the rear edges of the blades.

The nature of the invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a portion of a spindle embodying or provided with my invention and a longitudinal sectional view of a bobbin in position thereon. Small portions of the whirl and collar are broken out in order to illustrate the pivots of one of the clutching-blades. Fig. 2 is a horizontal section taken through the spindle, whirl, and bobbin, with the blades shown in plan and in engagement with the bobbin and imparting rotation thereto. Fig. 3 is an enlarged detail, showing a spindle and one of the blades in elevation and portions of the whirl and collar in vertical section. Fig. 4 is an elevation of one of the clutching-blades removed.

Similar letters of reference indicate corresponding parts.

a represents the spindle, provided with the rigidly-attached whirl *b*, from which there extends upward the sleeve *c*. Above the sleeve is a collar *d*, rigid on the spindle, said collar conforming in shape to the upper end of the chamber in a bobbin *e* and supporting said bobbin. The upper part of the portion *c* of the whirl is provided with a plurality (four being shown in the drawings) of vertical recesses *g*, the portions of the whirl between the recesses being of the same diameter as that below the recesses and practically filling the chamber in the bobbin. The side walls of each of these recesses are preferably at substantially right angles with each other, as shown in Fig. 2, and the corners produced by said sides are preferably curved or rounded, as shown at *h*. Pivotally sustained in vertical positions within the said recesses and between the floors of the recesses and the collar *d* are the clutching-blades *k*. The rear edges *k'* of these clutching-blades are straight vertically and preferably curved in cross-section, and upper and lower pivot-pins *l* and *n* extend from the blades into the sockets *p* and *r*, formed, respectively, in the collar *d* and in the portions of the whirl which constitute the floors of the recesses *g*, said pivots being flush with and in line with the rear edges *k'* of the blades. These pivot-pins and sockets are so placed as to bring the rear curved edges *k'* of the blades *k* snugly into and against the curved corners *h*.

The vertical wall *s* of each recess is somewhat shorter horizontally than the wall *t*, and the clutching-blade in the recess is somewhat wider than the wall *s*, and its corner *u* preferably extends out a trifle, forming an acute angle. Moreover, each vertical wall *s* is on a non-radial line which is located between the pivot of the blade *k* and a radial line parallel with said blade.

When rotation is imparted to the spindle, the clutching-blades are swung from a loose position in the recesses outward toward the walls *s*, but being broader than said walls the corners *u* of the blades are swung into contact with the walls of the bobbin-chamber, as illustrated in Fig. 2, thus imparting rotation to the bobbin. As each blade is confined in its recess, and as the blades are all of the same width and all a little wider than the walls *s*, it is evident that none of the blades can swing into radial positions, as they are always brought into engagement with the bobbin before radial positions can be reached, and as each of the said walls *s* is non-radial and is at such an angle that the blade in its recess cannot swing past a radial line, and as each wall *s* is between the pivot of the blade and a radial line parallel with the wall, the said blades when the bobbin is not in position are held in the same direction around the spindle without the employment of any stop making a part of or projecting from the blade. As the rear or inner edge of each blade is in the corner of the chamber and in contact with the whirl at that point, when the blades are brought into engagement with the bobbin the lateral strain is not sustained by the pivots, but is supported by the whirl and is distributed on different sides thereof around the spindle.

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

In a rotatable spinning-spindle adapted to sustain a removable bobbin, the whirl *b*, *c* rigid on the spindle, the portion *c* of said whirl being provided with substantially vertical independent recesses *g* each being located between the walls *s* and *t;* a collar rigid on the spindle above the whirl; and clutching-blades pivotally disposed in the said independent recesses and adapted to be swung toward the walls *s* and into non-radial engagement with the bobbin by the centrifugal force derived from the rotation of the spindle, the said walls *s* being on non-radial lines between the pivots of the blades and radial lines parallel with said walls, for the purpose set forth.

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

JOHN E. PREST.

Witnesses:
HENRY W. WILLIAMS,
A. K. HOOD.