

No. 768,074.

PATENTED AUG. 23, 1904.

J. E. PREST.
SPINNING SPINDLE.

APPLICATION FILED JUNE 16, 1904.

NO MODEL.

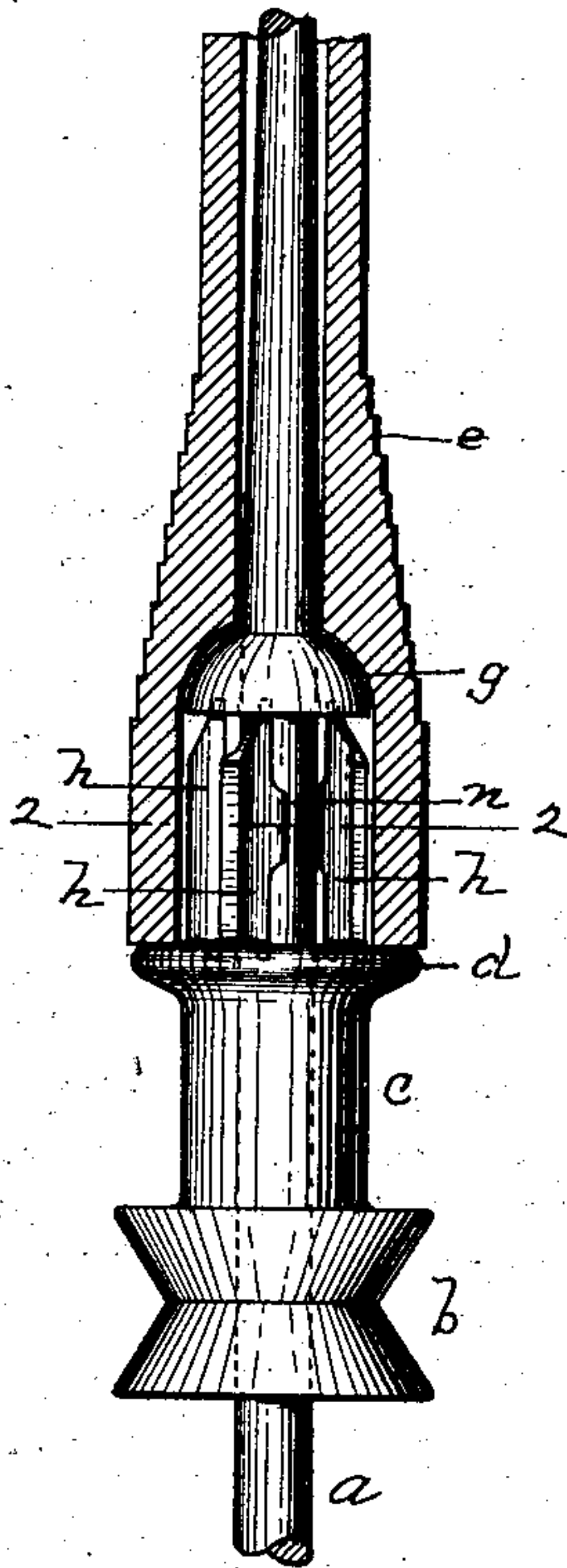


Fig. 1.

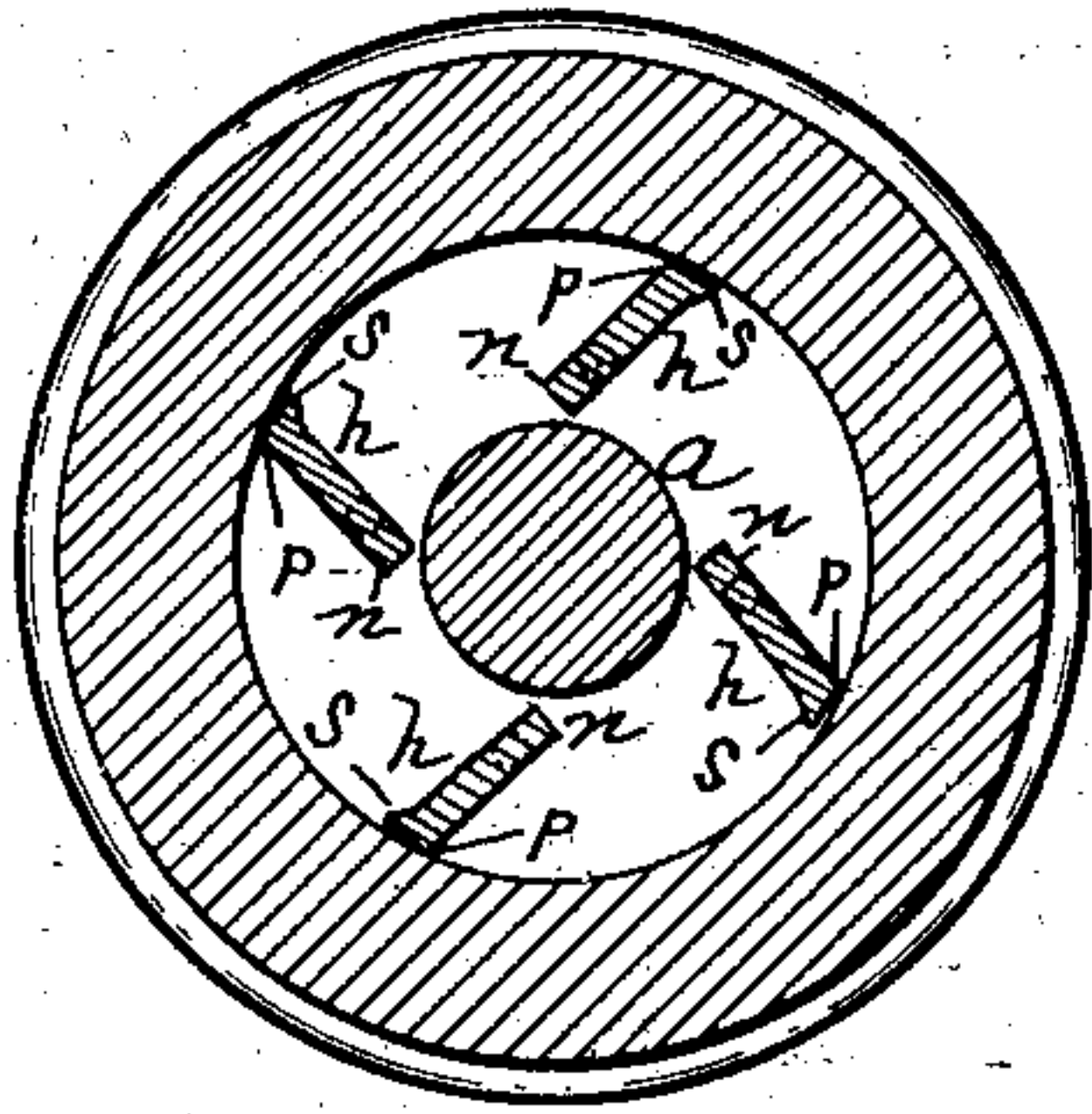


Fig. 2.

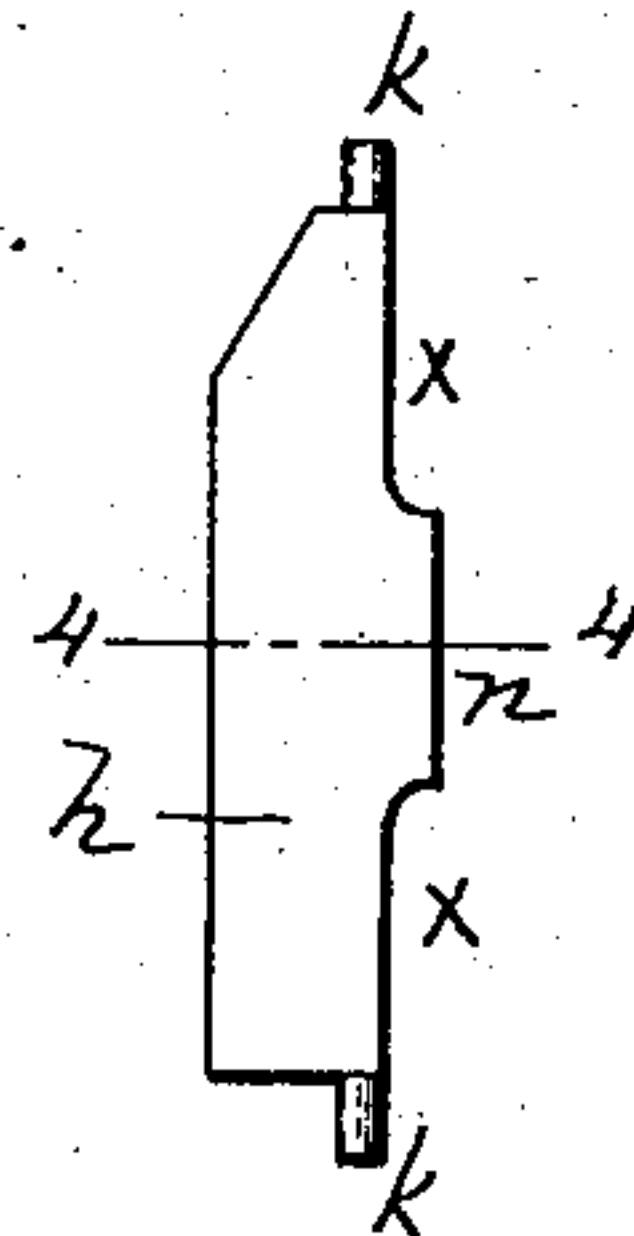


Fig. 3.

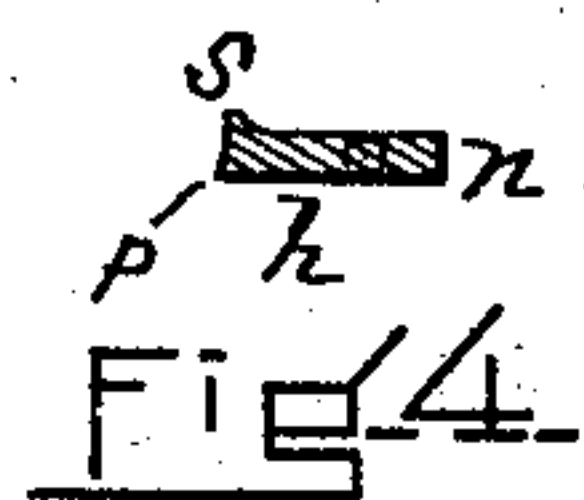


Fig. 4.

WITNESSES.

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JOHN E. PREST, OF WORCESTER, MASSACHUSETTS.

SPINNING-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 768,074, dated August 23, 1904.

Application filed June 16, 1904. Serial No. 212,755. (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 a new and useful Improvement in Spinning-Spindles, of which the following is a specification.

This invention relates to rotatable spinning-spindles, and particularly to that class of spinning apparatus in which the bobbin is connected with and rotated by the spindle by the operation of centrifugal action upon a clutching or engaging mechanism intermediate of the bobbin and the spindle.

In this invention the clutches or engaging devices are pivotally sustained in substantially vertical positions between the spindle and the bobbin, and when motion is imparted to the spindle they are 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 being when in such contact in an approximately tangential position or a position which is intermediate of a tangential and a radial position, but not a radial one, with the effect that the outer or advancing corners of the clutches engage the bobbin and impart rotation thereto.

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

Figure 1 is a view in elevation of a portion of a spindle embodying my invention and a longitudinal sectional view of a bobbin in position thereon. Fig. 2 is an enlarged section taken on line 2 2, Fig. 1. Fig. 3 is an enlarged view in elevation of one of the clutching-blades removed. Fig. 4 is a section taken on line 4 4, Fig. 3.

Similar letters of reference indicate corresponding parts.

a represents a spindle of ordinary construction provided with the rigidly-attached whirl *b*, from which there extends upward the sleeve *c*, broadened at its upper end into or provided rigidly with the annular platform *d*, on which

rests the head of the bobbin *e*. At a distance above the platform *d*, near the front of the upper end of the chamber in the bobbin, a collar *g* is rigidly secured to and around the spindle. Pivotally sustained in vertical positions between the annular platform *d* and the collar *g* and between the spindle and the walls of the head of the bobbin are the clutching-blades *h*, whose upper and lower pivot-pins *k* extend, respectively, into suitable sockets in the collar and platform. These pivot-pins are so placed as to bring the axial or pivotal line decidedly toward one of the vertical edges of the blade, and the edge lettered *x*, which is that edge which is nearer the axial line, is preferably provided with a small extension or projection *n*.

It will be seen by reference to the drawings that the greater portion of each blade (all being preferably alike) is that which is next the edge opposite the edge *x*, but that the projection *n* is long enough to prevent the blade from making a complete rotation, as before the completion of the rotation the said projection will strike the spindle. Moreover, even before the projection *n* struck the spindle the outer edge of the blade would come in contact with the walls of the chamber in the head of the bobbin. The blades are all disposed so that as they lie in an approximately tangential position with relation to the spindle. They all point in the same direction around the circle.

When rotation is imparted to the spindle, the outer and broader portions of the clutching-blades *h* swing outward by reason of the rotation of the blades produced by centrifugal action until the outer edges come in contact with the walls of the bobbin-chamber. As the portions of the blades on the outer side of their pivots exceed in breadth the distance in a radial line between the pivots and the walls of the bobbin-chamber, said outer edges come in contact with said walls before the blades can reach a radial position, and said blades when in contact with the bobbin are therefore in an approximately tangential position or in a position which is between a tangential one and a radial one. Moreover, the portions of the blades which thus come in contact with

the bobbin are the corners p , and the bobbin is engaged by said corners, which, having a tendency to dig into the walls of the bobbin-chamber, impart rotation to the bobbin and
 5 continue to engage it even when the spindle is rotating quite slowly. I prefer to thicken these blades at their outer ends at s in order that their outward swing may be more positive and steady.

10 The outer edges of the blades next the engaging corners p are represented as being at substantially right angles with their sides; but this may not necessarily be rigidly adhered to. It is advisable, however, that the engaging
 15 corners should be at a right angle or an acute angle rather than an obtuse angle, as engagement made by such a shape is much more positive and will continue longer when the spindle is slowing down than a frictional en-
 20 gagement by any surface which is approximately or quite parallel with the walls of the bobbin-chamber.

It will be observed by reference to Fig. 2 not only that the greater area of the blades is
 25 beyond or outside their pivotal or axial lines, but that the portion n is too narrow to come in contact with the spindle when the bobbin is in position, as if it came into such contact with the outer edges it would not be free to make a
 30 full engagement with the bobbin. The object of the portions n is to keep the blades in the same direction when the bobbin is not in position, so that the edges p of all the blades will engage the bobbin. In order to accomplish
 35 this, the portion n must extend farther than the distance in a radial line between the pivot and the spindle.

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

1. A rotatable spinning-spindle; a collar rigid on said spindle; a removable bobbin adapted to fit over said collar; and clutching-
 blades pivotally supported between the spindle

and the bobbin, said blades being of such a 45 width that when rotation is imparted to the bobbin the outer edges of the blades will swing by centrifugal force into engagement with the bobbin without reaching a radial position, thereby making non-radial connection be- 50
 tween the spindle and the bobbin.

2. A rotatable spinning-spindle; a collar rigid on said spindle; a removable bobbin adapted to fit over said collar; and clutching-
 blades pivotally supported between said spin- 55 dle and bobbin, said blades being when the bobbin is at rest confined within the limits of the circumference of the collar, and when rotation is imparted to the bobbin swinging by
 centrifugal force beyond the edge of the collar 60 into engagement with the bobbin, thereby making connection between the spindle and the bobbin.

3. A rotatable spinning-spindle; a removable bobbin; and clutching-blades pivotally 65 supported between the spindle and the bobbin and being thickened or made heavier at their outer edges, the axes of the blades being non-coincident with the axis of the spindle, where-
 by the rotation of the spindle swings the 70 blades into non-radial engagement with the bobbin.

4. In a rotatable spinning-spindle, a series of clutching-blades h pivotally supported be-
 tween the spindle and the bobbin, the axes of 75 the said blades being substantially parallel with that of the spindle and nearer one of the vertical edges of the blades than the other, and the said blades being provided on the edge
 which is nearer the axis with the projections 80 n , for the purpose set forth.

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

JOHN E. PREST.

Witnesses:

HENRY W. WILLIAMS,
 A. K. HOOD.