

No. 767,011.

PATENTED AUG. 9, 1904.

J. E. PREST.
SPINNING SPINDLE AND BOBBIN.

APPLICATION FILED JUNE 21, 1904.

NO MODEL.

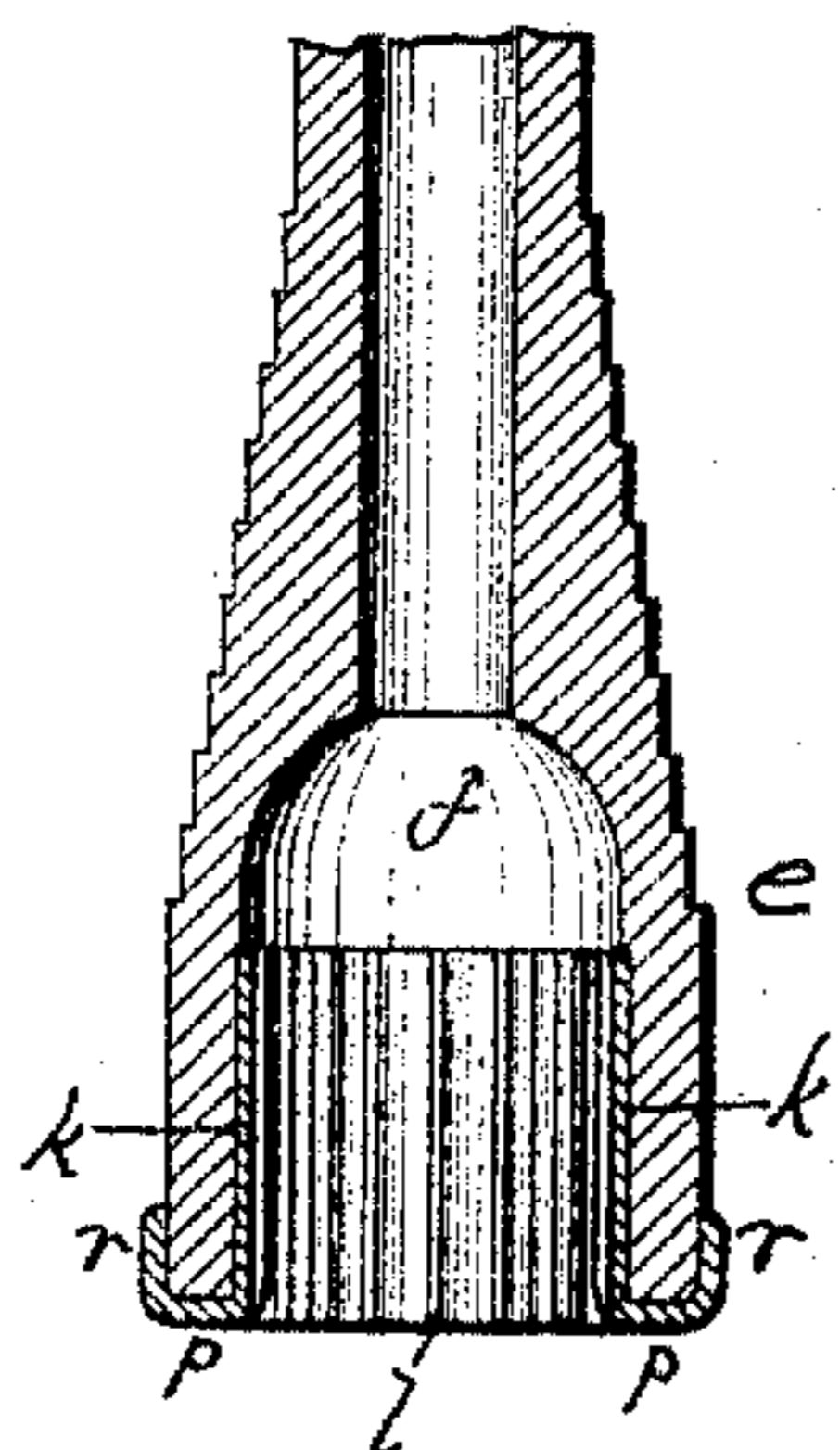


Fig. 1.

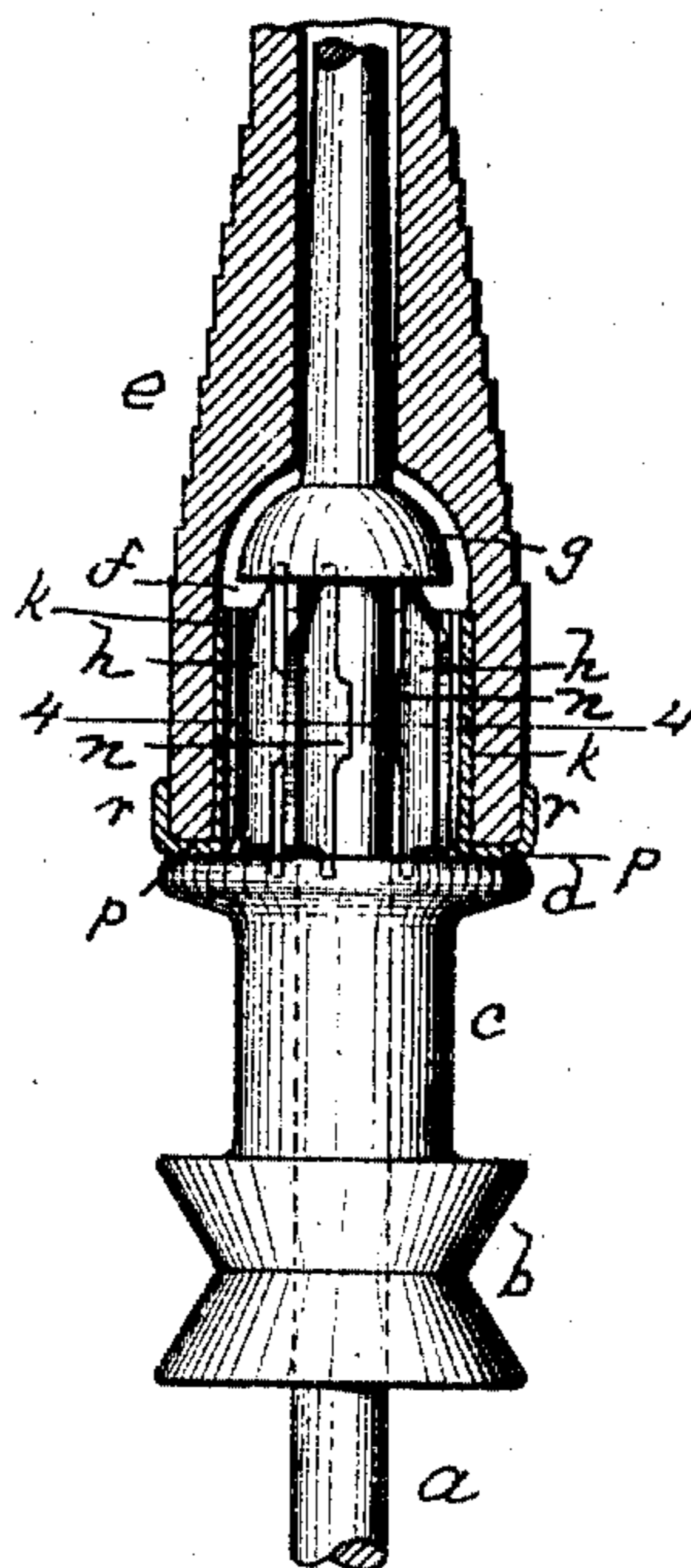


Fig. 3.

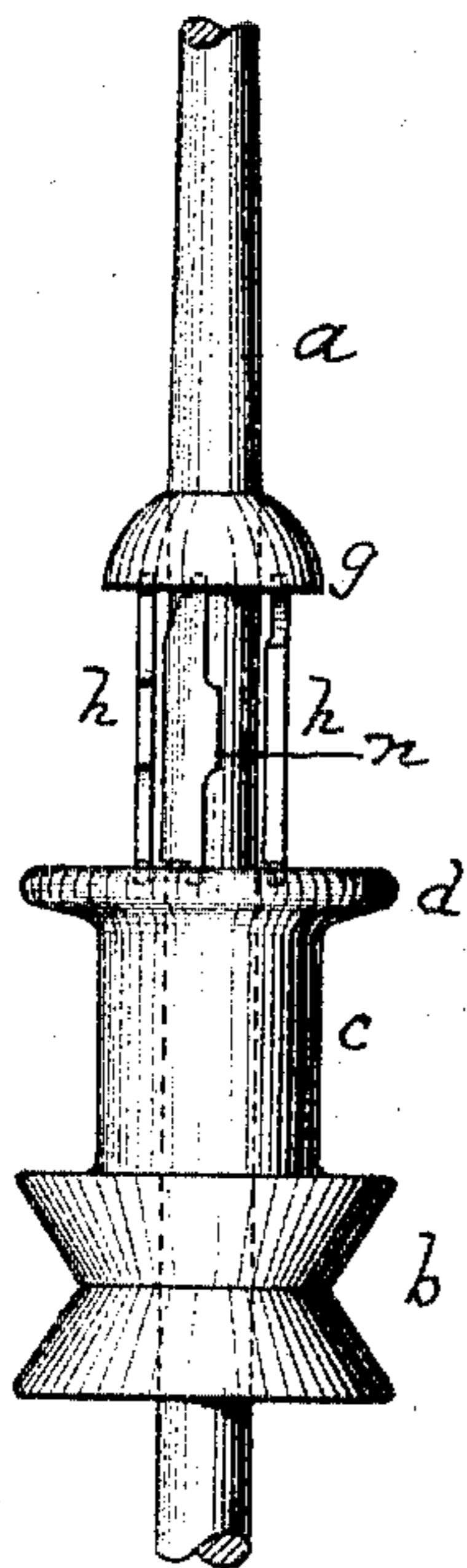


Fig. 2.

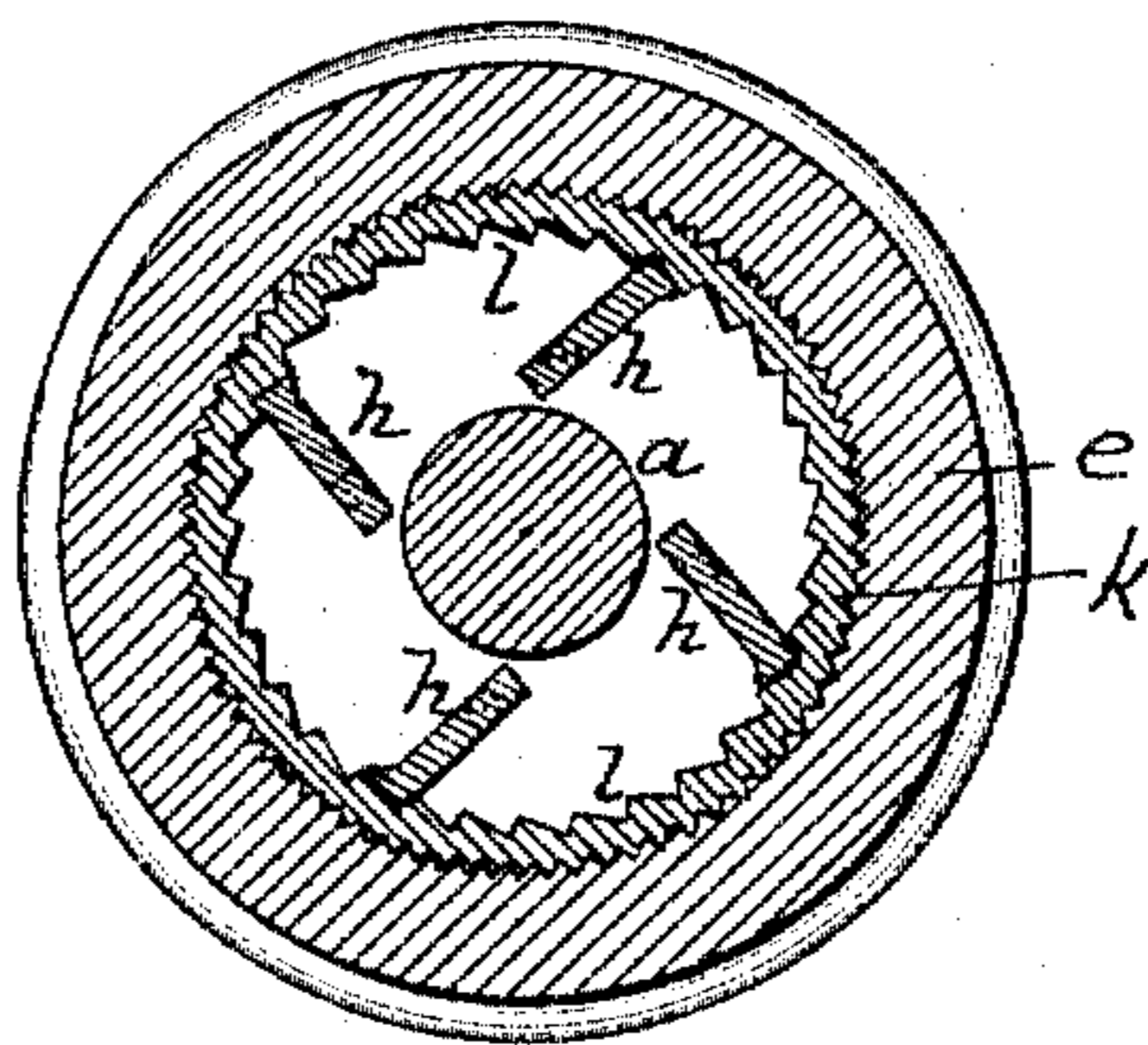


Fig. 4.

WITNESSES.

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SPINNING SPINDLE AND BOBBIN.

SPECIFICATION forming part of Letters Patent No. 767,011, dated August 9, 1904.

Application filed June 21, 1904. Serial No. 213,482. (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 and Bobbins, of which the following is a specification.

This invention relates to rotatable spinning spindles and bobbins, 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 engagement with teeth, preferably ratchet-shaped, on the inner face of a ferrule which lines the inner walls of the chamber in the head of the bobbin, whereby the spindle and bobbin are connected and rotation imparted to the latter.

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

Figure 1 is a central vertical section of a portion of a bobbin to which my invention has been applied removed from the spindle. Fig. 2 is a view in elevation of a portion of a spindle adapted to rotate the bobbin. Fig. 3 is an elevation of the spindle with the bobbin in position thereon and shown in vertical section. Fig. 4 is an enlarged section taken on line 4 4, Fig. 3.

Similar letters of reference indicate corresponding parts.

a represents a spindle provided with the rigidly-attached whirl *b*, from which there extends upward the sleeve *c*, which is formed with the annular platform *d*, upon which the head of the bobbin is adapted to rest. A collar *g* is rigidly secured to and around the spindle at a short distance above the platform.

The collar and platform are provided with suitable sockets, in which engaging or clutching blades *h* are pivotally held in a vertical position, the pivots being so located as to bring the axial or pivotal line in each blade toward its rear edge, which is provided with a small extension or projection *n*. The blades *h* are arranged around the spindle to point in the same direction around the circle and lie in an approximately tangential position with relation to the spindle, the projections acting as stops against the spindle and holding the blades in the said position. The greater portion of each blade, therefore, extends outward beyond its vertical axial line.

Secured to the bobbin *e* is a ferrule, the larger portion, *k*, of which lines the inner surface of the wall of the chamber *f* within the head of the bobbin and is provided with a series of vertical inwardly-projecting ratchet-shaped teeth *l*, said teeth facing the same direction in which the clutching-blades point. This ferrule preferably extends under the end of the bobbin at *p* up and around it at *r*, the part *p* resting on the platform *d* and the ferrule being rigidly secured to the bobbin by friction or in any other suitable manner.

When rotation is imparted to the spindle, the outer and broader portions of the clutching-blades *p* swing outward by reason of the rotation of the blades produced by centrifugal action until the outer edges of the blades come into contact and engagement with the teeth *l*, as illustrated in Fig. 4, when they thereby impart rotation to the ferrule, and hence to the bobbin.

The blades may be thickened at their outer ends, if desired, and their engaging corners—that is, the outer advance corners—are preferably formed at right angles in order to fit into the teeth of the ferrule. Thus a positive engagement of the bobbin is made by horizontally-rotating clutching-blades, which, with their axial lines, are between the spindle and the bobbin.

It is evident that the ferrule, while primarily providing a means of engagement for the clutching-blades with the bobbin, serves also to materially strengthen the bobbin.

Having thus fully described my invention,

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what I claim, and desire to secure by Letters Patent, is—

1. In combination with a rotatable spinning-spindle, and clutching-blades pivotally
5 disposed between the spindle and the bobbin;
a removable bobbin provided with an inner
lining or ferrule formed with inwardly-pro-
jecting teeth, whereby said blades are by the
centrifugal force derived from the rotation of
10 the spindle, rotated or swung into engage-
ment with said teeth, thereby making connec-
tion between the spindle and the bobbin.

2. In combination with a rotatable spin-
ning-spindle, and clutching-blades pivotally
15 disposed between the spindle and the bobbin;
a removable bobbin provided on its inner sur-
face with inward projections, whereby said
blades are by the centrifugal force derived
from the rotation of the spindle, rotated on
20 their own axes into positive engagement with
said projections, thereby making connection
between the spindle and the bobbin.

3. In combination with a rotatable spin-
ning-spindle, and clutching-blades pivotally
25 disposed between the spindle and the bobbin;
a removable bobbin provided with an inner

lining or ferrule formed with inwardly-pro-
jecting teeth, and extending under the lower
end of the bobbin, whereby said blades are by
the centrifugal force derived from the rota- 30
tion of the spindle, rotated or swung into en-
gagement with said teeth, thereby making con-
nection between the spindle and the bobbin.

4. In combination with a rotatable spin-
ning-spindle, and clutching-blades pivotally 35
disposed between the spindle and the bobbin;
a removable bobbin provided with an inner
lining or ferrule formed with inwardly-pro-
jecting teeth, and extending under the lower
end of the bobbin and up against the outer 40
surface thereof, whereby said blades are by
the centrifugal force derived from the rota-
tion of the spindle, rotated or swung into en-
gagement with said teeth, thereby making con-
nection between the spindle and the bobbin. 45

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.