

No. 776,163.

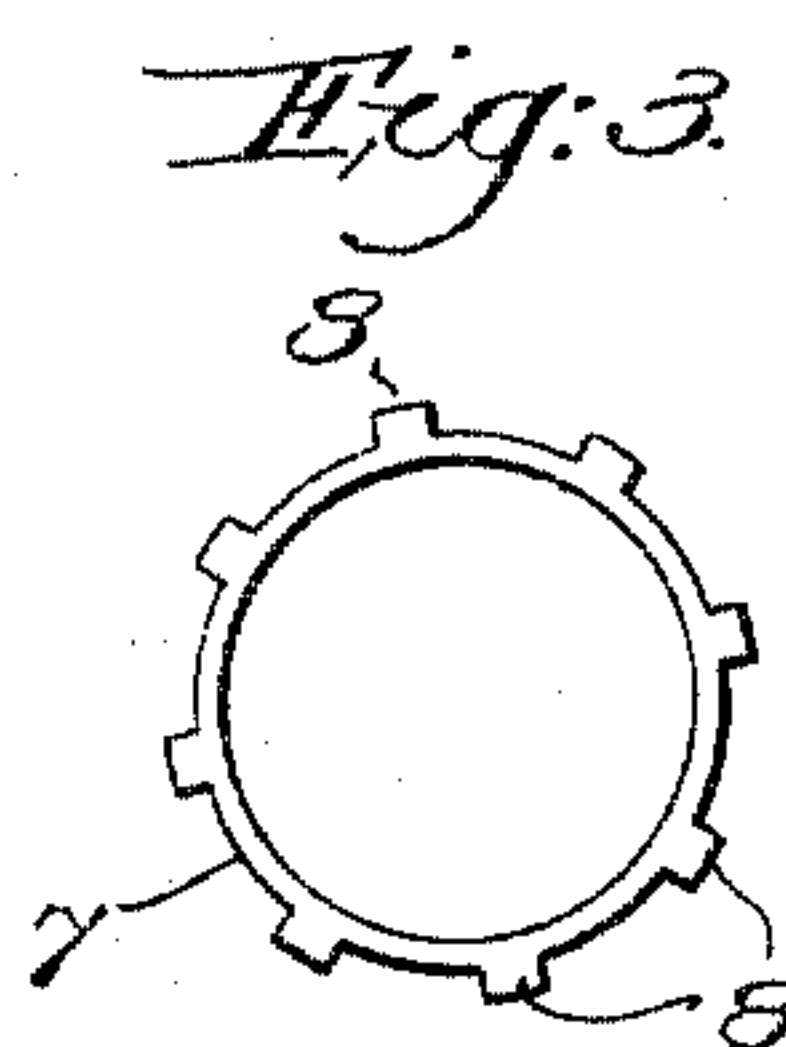
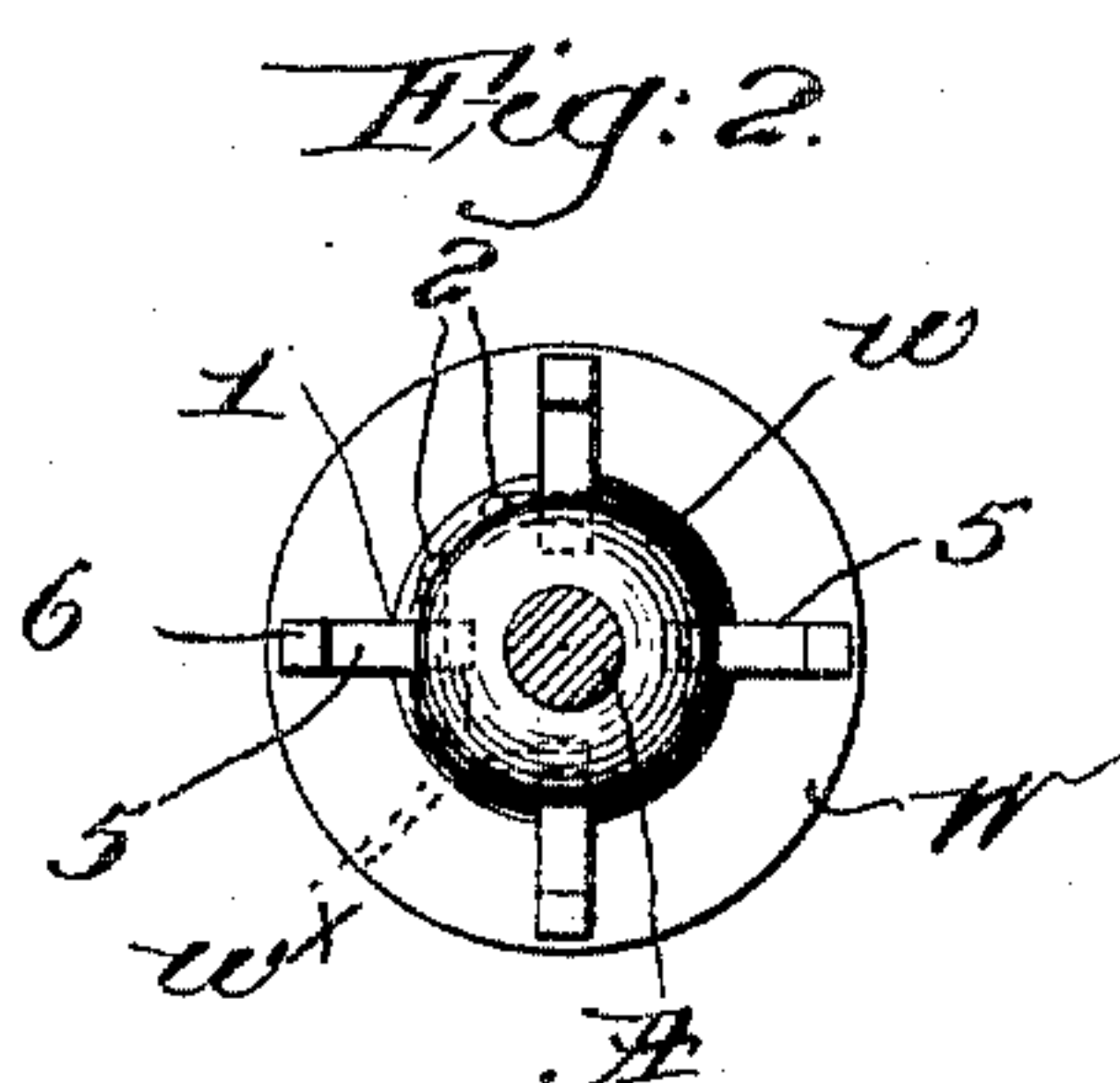
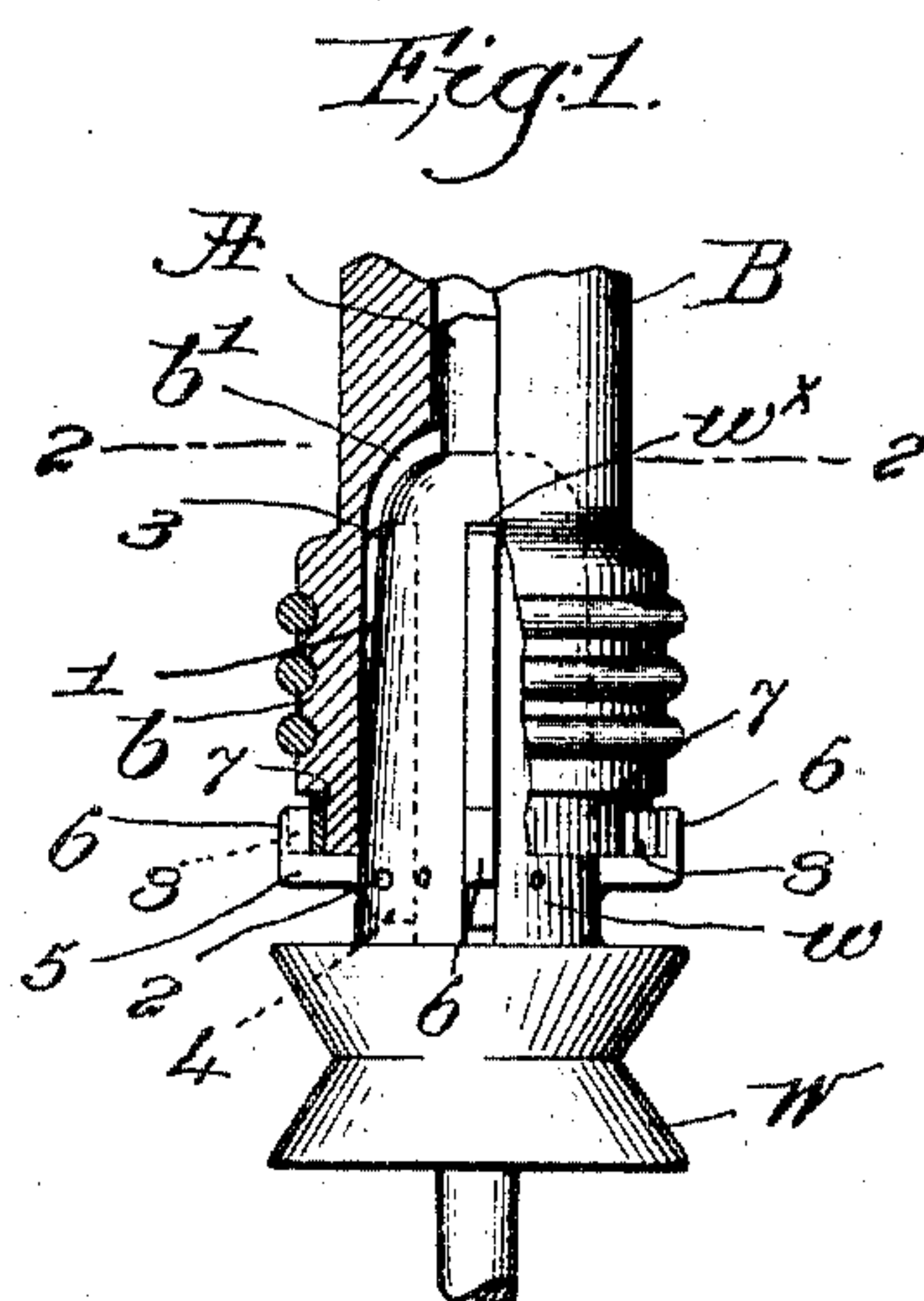
PATENTED NOV. 29, 1904.

W. E. ALLEN.

BOBBIN CLUTCHING MEANS FOR ROTATABLE SPINDLES.

APPLICATION FILED SEPT. 28, 1904.

NO MODEL.



Witnesses,
Edward F. Allen
H. C. Lumsford

In witness whereof,
William E. Allen,
by Crosby Ferguson
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM E. ALLEN, OF SALEM, MASSACHUSETTS, ASSIGNOR TO SAWYER SPINDLE COMPANY, A CORPORATION OF MAINE.

BOBBIN-CLUTCHING MEANS FOR ROTATABLE SPINDLES.

SPECIFICATION forming part of Letters Patent No. 776,163, dated November 29, 1904.

Application filed September 28, 1904. Serial No. 226,389. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. ALLEN, a citizen of the United States, and a resident of Salem, county of Essex, State of Massachusetts, have invented an Improvement in Bobbin-Clutching Means for Rotatable Spindles, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of novel and simple means for holding a yarn-receiver or bobbin in proper position upon a spinning or other rotatable spindle and to effect rotation of the bobbin therewith.

The several novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the claims appended thereto.

Figure 1 is a side elevation of a portion of a rotatable spindle with one embodiment of my invention applied thereto, the base or head of a bobbin being shown in section and elevation in operative position. Fig. 2 is a cross-section on the line 2-2, Fig. 1, looking down; and Fig. 3 is a plan view of an attachment for the head of the bobbin, to be described.

In Fig. 1 I have shown a portion of a spindle A, having a whirl W attached thereto by a sleeve w, the construction common in a well-known type of sleeve-whirl spindle. The sleeve is provided with a plurality of longitudinal grooves or seats w^x, four being shown in Figs. 1 and 2, symmetrically disposed with relation to the axis of the spindle. In each seat I mount an elongated and slightly-tapered clutching member 1, made of metal and fulcrumed near its lower end on a pin 2, driven into the sleeve across the seat, so that the clutching members can move in an out in radial planes. The outer edge of each member is rounded off at its upper end at 3, and the projecting portion 4 below the fulcrum serves as a stop to limit outward movement of the member when such portion engages the bottom of the seat. Each member is provided at its lower end with means to vertically support the bobbin and also to exter-

nally engage the head thereof and effect its rotation with the spindle. To this end each member 1 is provided with an L-shaped foot 5 6, the part 5 projecting radially and the part 6 being upturned, (see Fig. 1,) the foot joining the member adjacent its fulcrum.

The yarn-receiver or bobbin B is of substantially well-known form, its head b having a chamber b' to receive the sleeve w and clutching members 1 when the bobbin is applied to the spindle, the end of the head at such time resting upon and being vertically supported by the radial portions 5 of the feet.

The weight of the bobbin acts to depress the feet and press the members 1 outward into internal engagement with the walls of the chamber b', and this engagement is enforced by centrifugal action when the spindle is rotating.

In order to effect a positive drive for the bobbin, I provide the head with a series of external projections, and this is conveniently done by forcing thereon a metal ring 7, Fig. 3, having radial lugs or projections 8 upon its periphery.

The upturned extremities 6 of the feet engage the sides of the projections, as shown in Fig. 1, and thus cause the bobbin to rotate positively in unison with the spindle.

A very simple and effective clutch is thus provided, its holding action upon the bobbin increasing as the weight of the yarn mass thereon increases, holding the bobbin down in proper position and rotating it positively with the spindle.

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

1. A rotatable spindle having an attached sleeve, a series of elongated, upturned bobbin-clutching members fulcrumed thereon at their lower ends and adapted to enter the chambered head of a bobbin, a detachable bobbin, having external radial projections on its head, and means connected with the clutching members to vertically support the bobbin and also engage the projections thereon and positively rotate the bobbin.

2. A rotatable spindle, a plurality of elon-

gated, upturned clutching members fulcrumed at the lower ends thereon, to swing in radial planes, each member having an L-shaped foot adapted to vertically support a bobbin, and a detachable bobbin having a chambered head to receive said clutching members and provided on the end of its head with radial projections to be engaged by the extremities of the feet, to positively rotate the bobbin with the spindle.

3. A rotatable spindle, a plurality of elongated, upturned clutching members fulcrumed at their lower ends thereon, to swing in radial planes, means on said members to receive the head of a bobbin and positively engage the exterior thereof, to vertically support and drive the bobbin positively with the spindle, and a detachable bobbin having a head chambered to receive the clutching members.

4. A rotatable spindle, a whirl, a sleeve connecting them and having a series of longitudinal seats, elongated clutching members fulcrumed at their lower ends in said seats and

movable in radial planes, each member having an L-shaped foot, and a stop below its fulcrum to limit outward swing, the clutching members being adapted to internally engage, and the feet to externally engage and also vertically support, the head of a bobbin.

5. A rotatable spindle, a plurality of elongated, upturned clutching members fulcrumed at their lower ends thereon, to swing in radial planes, and means on each member below its fulcrum adapted to engage and support vertically a bobbin when applied to the spindle, the weight of the bobbin acting through said means to press the clutching members outward into internal engagement with the bobbin.

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

WILLIAM E. ALLEN.

Witnesses:

JOHN C. EDWARDS,

ELIZABETH R. MORRISON.