(No Model.)

T. J. MURDOCK & J. T. ASHWORTH.

BOBBIN HOLDER FOR SPINNING SPINDLES.

No. 455,857. Patented July 14, 1891.

Fig. 1.

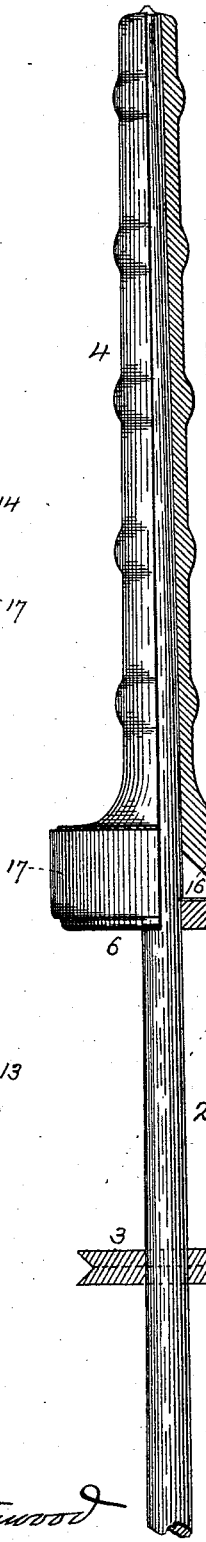


Fig. 2

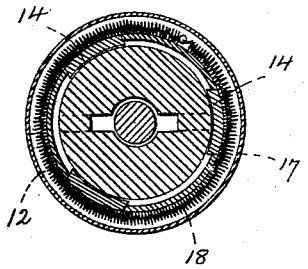


Fig. 3.

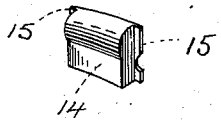


Fig. 4.

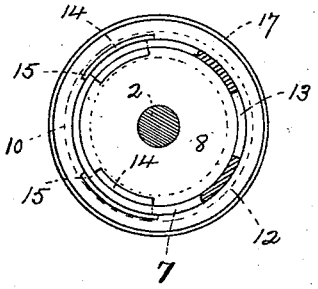
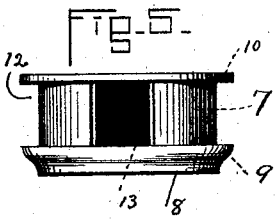


Fig. 5.



WITNESSES.

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UNITED STATES PATENT OFFICE.

THOMAS J. MURDOCK AND JOSEPH T. ASHWORTH, OF WOONSOCKET, RHODE ISLAND; SAID ASHWORTH ASSIGNOR TO SAID MURDOCK.

BOBBIN-HOLDER FOR SPINNING-SPINDLES.

SPECIFICATION forming part of Letters Patent No. 455,857, dated July 14, 1891.

Application filed August 4, 1890. Serial No. 360,916. (No model.)

To all whom it may concern:

Be it known that we, THOMAS J. MURDOCK and JOSEPH T. ASHWORTH, citizens of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Bobbin-Holders for Spinning-Spindles; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to spindles of spinning or twisting mechanisms; and it consists of a bobbin-holder to be mounted upon the spindle.

Our improvements consist in such an assemblage of parts, hereinafter fully described, that the bobbin is readily doffed; yet it is held so firmly that sufficient friction is created to insure its proper revolution, while at the same time it is prevented from jumping or becoming raised by the draft during high speed in the act of filling the bobbin.

Our improvements consist, furthermore, in creating a receptacle in the holder to contain the bobbin-head and thereby prevent the yarn from overlapping on the same.

The drawings represent, in Figure 1, a partial sectional elevation of a spindle and bobbin-holder embodying our invention. Fig. 2 is a horizontal section. Fig. 3 is a perspective view of one of the holding-shoes. Fig. 4 is a view showing the spindle in cross-section and the bobbin-holder partly in section at the right-hand side thereof, with the spring and one shoe omitted to more clearly show detail in construction. Fig. 5 is a view in side elevation of the body of the bobbin-holder.

In the accompanying drawings we have represented the spindle at 2, the whirl at 3, and the bobbin at 4, with its head at 5.

One object of our invention is to obviate the winding of yarn about the spindle in order to secure a proper fit of the bobbin on its seat on the spindle, this winding frequently being done in order to compensate for the varying sizes of the bores of the bobbins, and likewise to compensate for wear caused by replacing and doffing the bobbin. To this end we mount upon the spindle a bobbin-holder having a cylindrical body or casing 6, open at its upper side but closed at its bottom by the base 8, and formed with two flanges 9 and 10, between which flanges is an annular recessed portion 12, the shape of the body being in general that of a spool. The shell or cylindrical part 7 of the body is radially apertured at 13 to receive a series of segmental shoes or holders 14 of a curvature to conform to that of the bobbin-head. Said shoes are of a size to admit of movement radially in the apertures, but are furnished with lips 15, which project beyond the ends of the apertures and contact with the exterior surface of the recessed part of the holder. A coiled spring 18, in the form of a ring, encircles the body of the holder and serves to press the shoes radially inward upon the head of the bobbin. These shoes extend within the holder so far that when the bobbin is in place the bobbin-head thrusts them outwardly against the pressure of the spring, and the latter is now the active agent to hold the bobbin in place. Conversely when the bobbin is doffed the lips at the ends of said shoes contact against the body of the holder and prevent them from moving inwardly beyond the proper distance, so that the bobbins when replaced can readily be thrust in between them.

It is to be observed that the shoes are moved radially toward a common center, or toward the longitudinal axis of the spindle, while the spring presses equally upon all. As a result the tendency is to center the bobbin upon the spindle and hold said bobbin steady, even though the latter may be of larger bore than the size of the spindle requires.

To complete the bobbin-holder and have it present a finished appearance, an inclosing shell or cover 17 is slipped over the holder proper. Said cover rests upon and is supported at the top and bottom by the flanges 9 10. In this way the annular spring is concealed, and the holder having a smooth external finish prevents the yarn, waste, or flyings from catching thereupon.

The operation is simply to grasp an empty bobbin, insert the latter over the top of the

spindle, and thrust it down until the head of the bobbin has entered the holder. In this act the spring-actuated shoes are thrust outwardly against the spring, which now exerts its pressure to hold the bobbin firmly in place. When the bobbin is to be doffed, a slight upward pull disengages the shoes from the bobbin-head, and the shoes now converge until stopped by their lips 15.

There are several advantages derived from the improvements as above described: The bobbin-head is contained within the bobbin-holder, and thus prevents yarn from winding about the head and obstructing or covering the annular groove 16, ordinarily found in filling bobbins and which serves to receive a spring when placed in the shuttle. A further advantage is that this bobbin-holder can be employed to suit different bobbins simply by changing the shape of the shoes, no change in the bobbin-head being required. Consequently we do not desire to be limited to any particular shape of shoe nor to the spring; but our invention consists in holding the bobbin-head by radially-moving shoes actuated by a spring or springs which tend to center said shoes toward the longitudinal axis of the bobbin.

A further advantage in the employment of radially-moving spring-actuated shoes is that the bobbin-heads can vary in size to a considerable extent and still be held firmly, this difference in the size being obviated by the elasticity of the spring, which thus permits the shoes to yield more or less, according to the size of the bobbin-head.

What we claim is—

1. The combination, with a spindle and a bobbin-holder body affixed thereupon, of a spiral spring inclosing said bobbin-holder body, and radially-moving shoes or equivalents actuated by said spring to grasp the bobbin, substantially as set forth and specified.

2. The combination, with a spindle, of a bobbin-holder having a cylindrical rimmed receptacle, apertures in the body thereof, the imperforate inclosing shell, and the spring-actuated radially-moving shoes secured within the bobbin-holder and which grasp the bobbin-head, substantially as and for the purposes specified.

3. A revoluble spindle having a bobbin-holder fast thereto and composed of a circular rimmed receptacle having an annular exterior groove and radial apertures and provided with an outer cover, a series of holding-shoes having lips to determine the extent of their inward movement, and a spring medium which actuates said shoes to cause the latter to grasp the bobbin-head, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS J. MURDOCK.
JOSEPH T. ASHWORTH.

Witnesses:
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