

No. 622,703.

Patented Apr. 11, 1899.

T. J. MURDOCK.
BOBBIN AND THREAD HOLDER.

(Application filed Apr. 14, 1898.)

(No Model.)

Fig. 1.

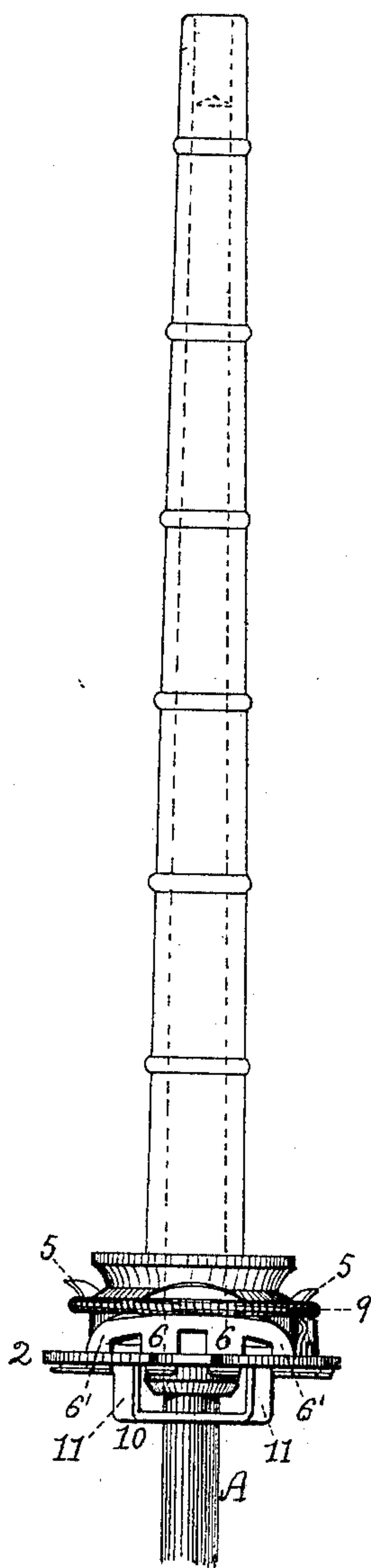


Fig. 6.

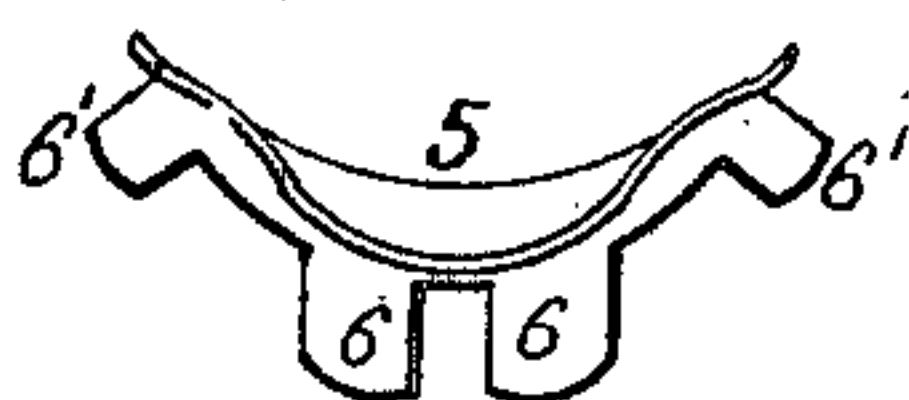


Fig. 5.

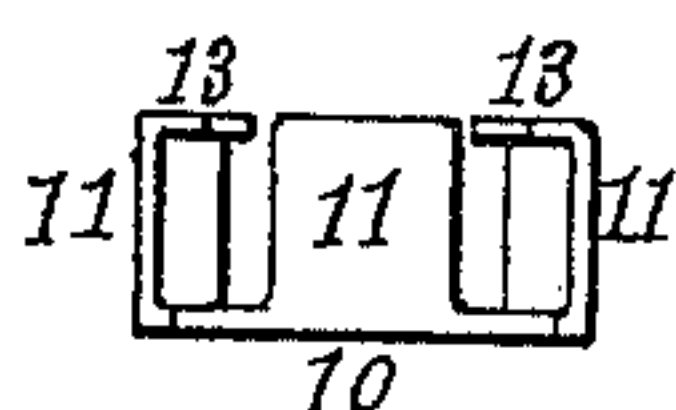


Fig. 3.

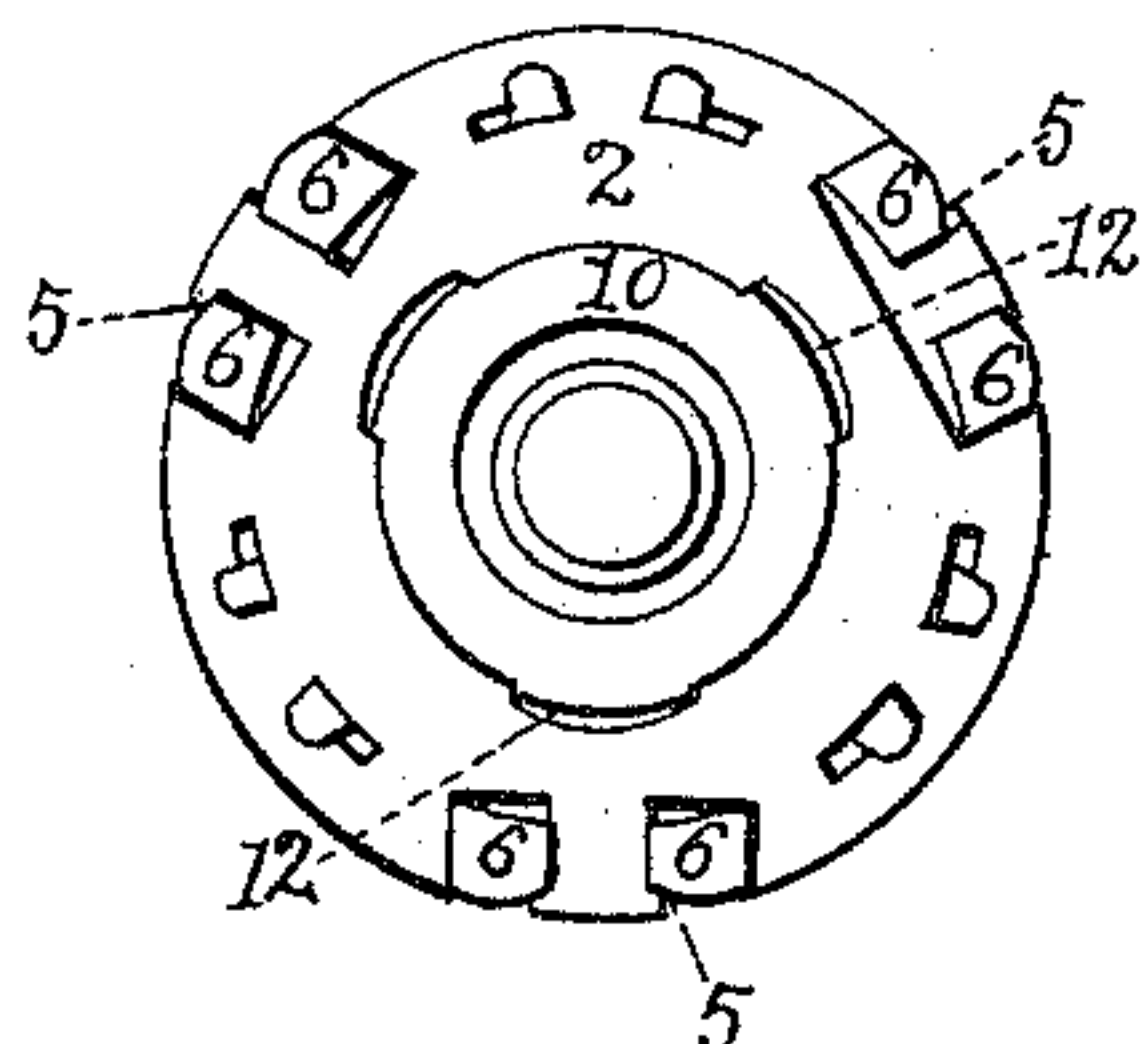


Fig. 4.

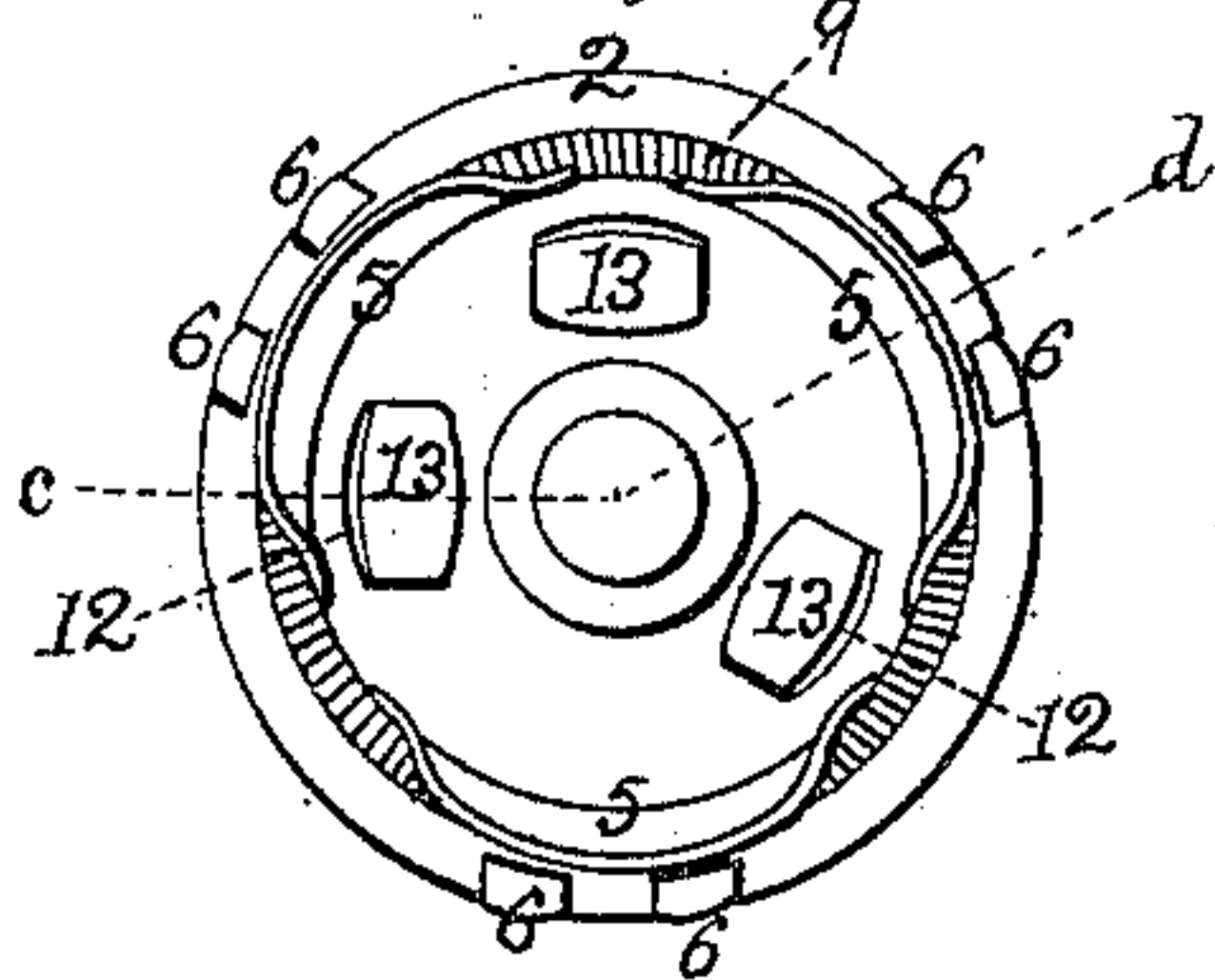
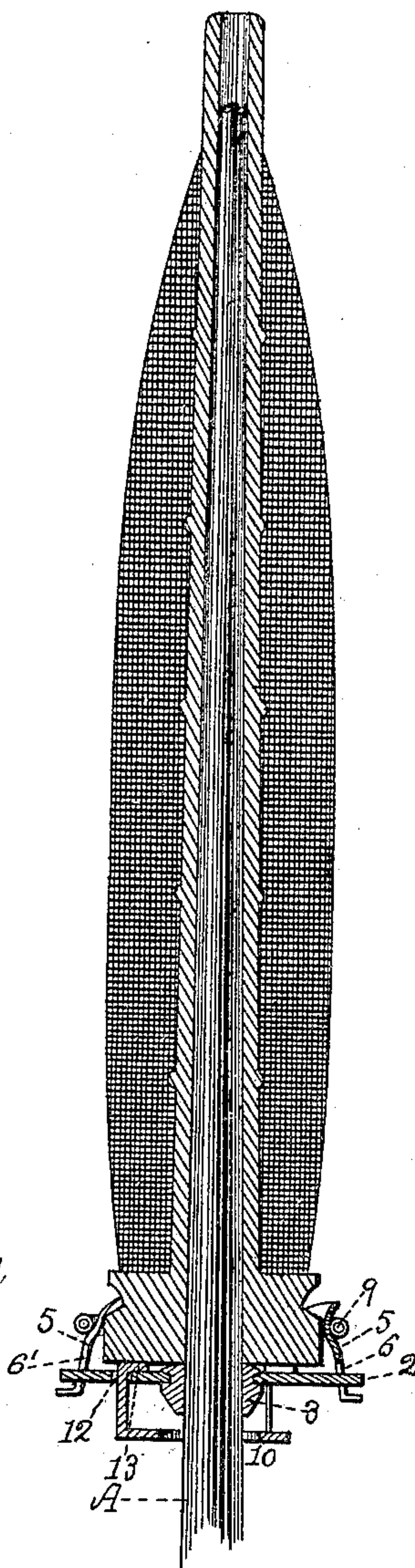


Fig. 2.
Outline c.d. of Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

THOMAS J. MURDOCK, OF WOONSOCKET, RHODE ISLAND, ASSIGNOR TO
HIMSELF AND JOHN RONEY, OF SAME PLACE.

BOBBIN AND THREAD HOLDER.

SPECIFICATION forming part of Letters Patent No. 622,703, dated April 11, 1899.

Application filed April 14, 1898. Serial No. 677,563. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. MURDOCK, a citizen 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 and Thread Holders; and I 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 improvements in bobbin and thread holders; and it consists in the construction and combination of parts hereinafter more particularly set forth and claimed.

Heretofore in removing a full bobbin from the "holder" it has been the universal practice for the operative to seize the bobbin bodily in his hand and pull it upward from the grasp of said holder. This manner of releasing the head of the bobbin from the pressure exerted upon it by the spring-pressed holding-jaws is in many respects objectionable, especially so when a full bobbin is to be removed, as the force requisite to release the bobbin frequently results in the "stripping" of the latter, particularly when it is slack-wound.

My invention may be so adapted as to be brought into action at the discretion of the operative, leaving him the option of employing it in releasing the bobbin or to remove such bobbin in the old way directly with his hand, or it may be so adapted as to be operated arbitrarily and automatically during the functions of the machine, as it is in its action independent of the holding-jaws.

My present invention may be said therefore to consist in providing a bobbin-holder of any desired construction with a bobbin-releasing device which may be adapted to exert at such times as the operative may elect or automatically by the mechanism of the machine, if desired, a pressure or force upon the bobbin sufficient to release the head of the latter from the grasp of the holder without the necessity of seizing the body of said bobbin with the hand.

In order to show a practical application of the principle of my invention, I have in the present instance shown and described a class of bobbin-holders illustrated in Letters Patent of the United States reissued to myself on the 24th day of November, 1896, No. 11,574, in which is employed a circular disk affixed concentrically to the bobbin-spindle. Applied to the upper face of said disk is a series of spring-pressed segmental gripping-jaws, connected at their lower corners to the disk by lugs formed upon them, which extend loosely through slots in such disk and constitute pivots which permit of rocking movements of the jaws and allow their upper portions to approach or recede from the spindle or bobbin-head when a bobbin is upon said spindle and when such head is inclosed within the jaws. The holding-jaws are pressed toward each other and the spindle by the stress of an annular coiled spring, which incloses them and which causes the jaws to grasp the head of the bobbin as well as to "center" such bobbin upon the spindle.

In carrying out my invention in one form in which its principle is susceptible of practical application I employ a series of vertical spurs which extend upward loosely through slots in the disk and preferably concentrically of the spindle, such spurs being secured at their lower ends or formed upon an annulus disposed below the disk and loosely encircling the spindle, the length of the different spurs being such as when forced upward to impinge against the head of the bobbin and raise the latter from out of the grasp of the holding-jaws against the stress of the annular spring.

The drawings accompanying this specification represent in Figure 1 an elevation of a bobbin-holder and bobbin, and in Fig. 2 a vertical section of a bobbin-holder and full bobbin, both with my invention applied thereto, while Fig. 3 denotes a plan, and Fig. 4 an under side view, of said holder with my invention also applied thereto. Fig. 5 represents a view of the "releaser," and Fig. 6 a view of one of the holding-jaws detached from the disk.

In the drawings, 1 represents the spindle of a bobbin-holder, such spindle to be mount-

ed and operated in the manner generally employed in mules or ring-spinning frames.

2 denotes a flat circular disk secured concentrically and rigidly to the spindle, a bushing 3 of softer metal being preferably interposed between the spindle and disk.

The adjustable holding jaws or plates are shown at 5 5 5, being in this instance three in number (though this number is not arbitrary) and disposed equidistant upon the top of the disk 2. Each plate 5 is in form a segment of a circle, and its lower edge is formed with a series of ears 6 6 6' 6', each of which extends through a slot in the disk and is turned over beneath the disk, the corner-ears 6' 6' serving to pivot the plate to the disk and permit of rocking motions of such plate with respect to the spindle or the head of a bobbin when one is inserted in place in the holder, while the central ears 6 6 constitute stops to limit the inward movement of the plate when the bobbin is removed.

9 in the drawings denotes an annular coiled spring which encompasses the jaws 5 5 5 and serves to contract such jaws about the head of the bobbin when the latter is in the holder in readiness to be filled.

The above description of parts embodies the elementary features of a bobbin-holder of the class described in my reissued Letters Patent hereinbefore alluded to. As the nature and operation of such a bobbin-holder has been fully described in said reissue and as my present invention is confined to the means for releasing the bobbin from the grasp of the jaws, I have in this specification omitted an extended description of the same.

In carrying my present invention into practice I combine with the disk 2 a "bobbin-releaser," as it may with propriety be termed, which consists of an annulus 10, disposed below the disk and loosely encircling the spindle, and I form upon this annulus upright spurs 11 11 11, which extend loosely through corresponding apertures 12 12 12 formed in the disk, the disposition of these spurs being

such that when a bobbin is applied to the holder in readiness to be filled they shall be in line with the head of such bobbin.

The releaser is, as will readily be seen, practically independent in its action of the disk and holding-jaws, and in order to retain such releaser in its proper relation to the latter the upper end of each spur 11 terminates in a lateral ear 13, which overlaps the contiguous edge of the aperture in the disk and prevents fall of said releaser. The spurs 11, &c., are of such length as when the releaser is pushed upward to rise above the disk to a height which will insure the expulsion from the jaws of the head of the bobbin under all circumstances. When freed from pressure, the releaser returns to its normal or idle position.

While I have described a bobbin-releasing device as composed of the annulus and lipped spurs, I do not confine myself to this exact construction, as I consider my invention to consist in the employment, in combination with a bobbin-holder, of any proper construction of a device operating independently of the holding mechanism to release the bobbin from the grasp of the latter, as such a result has never, so far as my knowledge extends, been accomplished.

What I claim is—

In combination with a bobbin-holder consisting of a slotted disk and spring-pressed arms or plates, of a bobbin-releasing device provided with spurs which extend through the slots of the said disk so as to bear against the head of the said bobbin, the ends of the said spurs being bent over above the said disk to prevent separation of these parts while allowing the independent relative motion of the releasing devices substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS J. MURDOCK.

Witnesses:

F. CURTIS,

E. K. BOYNTON.