

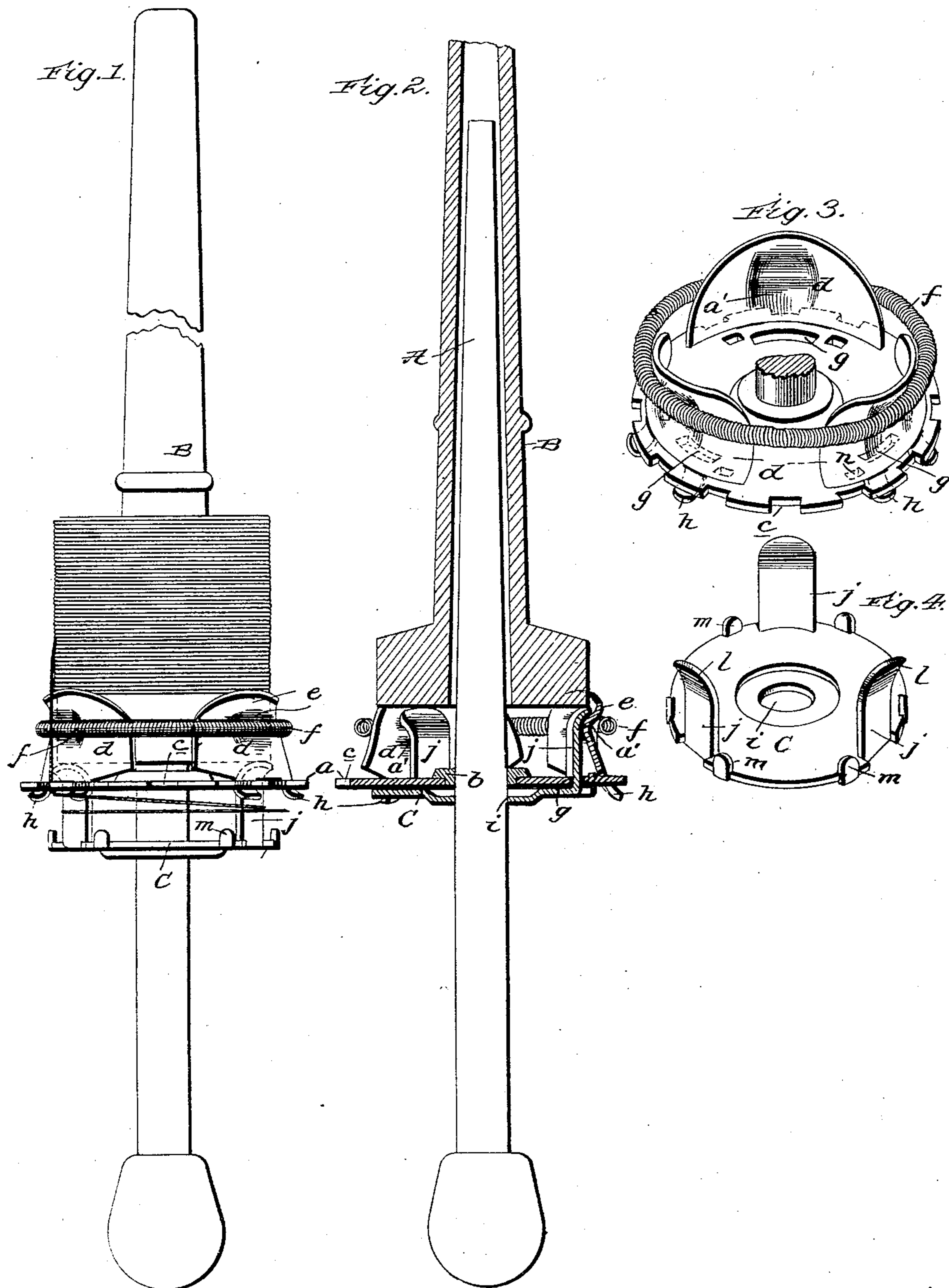
No. 632,473.

Patented Sept. 5, 1899.

J. RONEY.  
BOBBIN HOLDER AND THREAD CATCHER.

(Application filed May 2, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

JOHN RONEY, OF WOONSOCKET, RHODE ISLAND.

## BOBBIN-HOLDER AND THREAD-CATCHER.

SPECIFICATION forming part of Letters Patent No. 632,473, dated September 5, 1899.

Application filed May 2, 1899. Serial No. 715,336. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN RONEY, a citizen of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Bobbin-Holders and Thread-Catchers, of which the following is a specification.

This invention relates to improvements in bobbin-holders and thread-catchers; and the invention resides more particularly in the means for catching and holding the thread just prior to the doffing of a filled bobbin and during the starting operation of building a new or empty bobbin, the construction and arrangement of the various parts being such that the mere act of doffing the bobbin through the coöperation of the faller-wire will cause the thread to be caught and held until a new or empty bobbin has been placed over the spindle and forced into its seat, so as to turn with the spindle. The act of forcing the head of the bobbin into the holder will cause the catch to release itself from the thread, thereby allowing the operation of removing a filled bobbin and the placing of an empty one to continue without any care or attention from the attendant and absolutely without any waste or entangling of the thread.

The many objects and advantages which my invention possesses will appear from the following description and claims when taken in connection with the accompanying drawings, in which—

Figure 1 is an elevation of a spindle and bobbin with parts broken and showing my improvements applied, with a part of the cop to illustrate how the thread is carried prior to the action of the catcher. Fig. 2 is a longitudinal section of the same with the empty bobbin in a position to be inserted in its seat and open the catcher. Fig. 3 is a perspective view of the bobbin-holder with the spindle broken away, and Fig. 4 is a perspective view of the slidable disk which serves, with the fixed disk of the spindle, in catching the thread.

Referring by letter to said drawings, A indicates a spindle, and B a bobbin, which may be of the form and construction usually employed on mules and spinning-frames. I have

not illustrated any driving means for the spindle, the faller-wire, or any of its operative mechanism, as such devices form no part of my invention.

The spindle is provided at a suitable altitude with a disk *a*, which may be fixed thereto in a horizontal position by means of a collar *b* or otherwise. This disk is provided in its periphery with transverse notches *c* to afford a receiver and passage for the thread, as will be hereinafter more fully described. On this disk *a*, which is fixed to the spindle, I arrange the clamping-plates *d*. In the present illustration I have shown three plates, although it is obvious that more or less may be used. These plates, which are each formed from a separate piece of metal or other suitable material, are bent or shaped so as to conform to the circumference of the bobbin-head and receive the same when forced to its seat. The plates are also bent outwardly, as shown at *e*, so as to receive an encircling spring *f*, and they are provided on their inner sides with a recess *a'*, which is inclined to receive the upper ends of curved branches rising from a slidable disk, as will be hereinafter more fully described. The spring is shown as composed of spiral wire, although any other spring which will tend to force the plates inwardly may be used. These plates should be permitted to have a radial movement or rock in their bearings, so as to move inwardly and outwardly in clamping and releasing the bobbin.

For the sake of cheapness in construction I prefer to provide the fixed disk *a* at such points as where the clamping-plates are disposed with vertically-disposed slots or openings *g* and to provide the lower edges of the plates *d* with short outwardly-bent branches *h* to take through said slots. This construction, while a cheap and durable one, may be varied according to the fancy or dictation of the manufacturer, as it is only necessary that the clamping-plates should have a radial movement with respect to the spindle.

C indicates a slidable disk. This disk is provided with a central hole or aperture *i* to receive the spindle and is placed below the fixed disk *a* thereon. This slidable disk may be and preferably is of a less diameter than

the fixed disk, and it has rising from it a plurality of arms or branches *j*, which pass through slots *k* in the fixed disk *a*, and such arms or branches are turned or bent slightly outward at their upper ends, as shown at *l*. These arms or branches, which move up and down in the slots *k* of the fixed disk, pass into the recesses *a'* on the inner sides of the plates *d*, so as to throw them outwardly. The form of the branches serves to hold the disk *C* slidably to the fixed disk, and by reason of the bends in said branches and the employment of the recesses *a'* in the plates *d* it will be seen that when the plate *C* has been elevated the branches *j* will force the bobbin upwardly, and when about to be released by the clamping-plates *d* the bent ends of the branches will enter the recesses *a'*, and the recesses being on an incline, as shown, the action of the spring *f* will draw the slidable disk upwardly and hold it firmly in such position against the under side of the fixed disk, so as to retain the thread until the seating of another bobbin forces down the arms, and consequently the disk *C*, away from the disk *a*.

The slidable disk *C* is also provided with small lugs *m*, and these lugs, when the disk *C* has been raised to its fullest extent, such as when catching the thread, enter holes or slots *n* formed in the fixed plate *a*; but I would have it understood that I do not wish to limit myself to the use of these lugs, and consequently the slots or holes to receive them, as they may in some cases be dispensed with and the marginal edge of the disk, which projects beyond the branches *j*, made to catch the thread by contact with the under side of the fixed disk, although I prefer to use such lugs and slots.

In making the construction of catcher which I have illustrated the notches in the periphery of the fixed disk and also the various slots therein may be cut or formed by a single operation, and in constructing the slidable disk I may take a piece of metal of a sufficient size and thickness and stamp or cut the same by one operation, so as to form the central hole and also the branches and parts from which the lugs are formed. The lugs and branches in the first stage being in the same horizontal plane as the body it is simply necessary to bend or turn upwardly the various members and shape the same to enter the slots of the fixed disk, as before described. The arms or branches *j* of the slidable disk *C* may be of less height than the plates *d*, so that in entering the bobbin the head of the same will rest upon the upper ends of said arms of the slidable disk in order that the forcing down of the bobbin in the holder will depress the arms or branches, and consequently separate the slidable disk from the fixed disk.

A bobbin having been built or filled by the usual operation and the faller-wire having carried the thread through one of the notches

of the fixed disk and below said disk in a diagonal manner, after the thread has been wound once or more around the arms or branches *j* of the slidable disk the catcher is ready to operate, when by the mere act of doffing the bobbin, which is caused by lifting the disk *C*, the thread will be clamped between the under side of the fixed disk and the upper side of the slidable disk. An important part of the operation here takes place by reason of the inclined recesses in the inner sides of the clamping-plates *d* and the formation of the branches *j*, as it will be seen that when the bobbin has been lifted by such branches and when about to be released by the clamping-plates a quick upward movement will be given to the disk *C* by the cooperation of the spring *f* backing the plates *d* and acting upon the branches, which will cause the plate or disk *C* to snugly press the under side of the fixed disk *a*, so that the thread clamped between the two will be securely held thereby until another bobbin has been placed in the seat and caused to force down the branches *j*, and consequently the plate *C*. In lifting the plate *C* the arms *l* will contact frictionally with the inner sides of the plates *d*, so as to force them outwardly, and at the same time engage and lift the bobbin from its seat, so that it will be seen that the mere act of doffing the bobbin will catch and hold the thread until the proper seating of a new bobbin has taken place. When a new bobbin has been placed upon the holder and the faller-wire by the usual operation has taken the thread to the same, by forcing the bobbin down in its seat the head of the bobbin will force downwardly the arms or branches *j* by contact therewith, and consequently open the catcher and release the thread by separating the slidable disk from the fixed disk. The notches in the periphery of the fixed disk will of course receive the thread when it has been moved diagonally by the faller-wire whether the spindle is moving to the right or left, and the thread-catcher will act the same in either case.

Having thus described my invention, what I claim is—

1. The combination with a spindle; of a disk fixed thereto, radially-movable clamping-plates mounted on the fixed disk and backed by a spring, and a slidable disk having arms or branches adapted to frictionally engage the inner sides of the clamping-plates and also engage the lower end of a bobbin, substantially as specified.

2. The combination with a spindle; of a disk fixed thereto, radially-movable plates mounted on the upper side of the disk and backed by a spring, said plates being adapted to embrace the lower end of a bobbin, and vertically-movable arms passing through the disk carrying said plates and adapted to frictionally engage the inner sides of the plates

and move the same outwardly and from engagement with the bobbin, substantially as specified.

3. The combination with a spindle; of the  
5 peripherally-notched disk secured thereto and  
carrying a suitable bobbin-seat, and the vertically-slidable disk movable below the fixed  
disk and having arms taking through slots in  
the fixed disk, and also having lugs (as *m*)  
10 taking through slots in said fixed disk, substantially as specified.

4. A revoluble spindle adapted to carry a  
bobbin, a disk fixed to said spindle, a series  
of clamping-plates circularly grouped and  
15 mounted upon the disk so as to embrace the  
lower end of the bobbin; in combination with  
a vertically-movable disk connected with the  
fixed disk and having arms or branches adapted  
to frictionally engage the inner sides of the  
20 clamping-plates so as to disengage the same  
from the bobbin, substantially as specified.

5. In a bobbin-holder, a revoluble spindle,  
a disk fixed to it and having notches in its  
periphery; combined with a disk movable on  
25 the spindle and having arms passing through  
slots in the fixed disk, two or more radially-  
movable plates supported on the fixed disk  
and adapted to be engaged by the arms of

the movable or slidable disk and also adapted  
to embrace the lower end of a bobbin, sub- 30  
stantially as specified.

6. The combination with a spindle; of a  
disk fixed thereto, radially-movable clamp-  
ing-plates mounted on said disk and having  
their inner sides provided with inclined re- 35  
cesses, a spring backing the plates, and a slid-  
able disk below the fixed disk having arms  
bent outwardly to enter the recesses of the  
clamping-plates, substantially as specified.

7. A bobbin-seat having radially-movable 40  
clamping-plates encircled by a spring and  
provided on their inner sides with inclined  
recesses; in combination with a disk mov-  
able up and down on the spindle and having  
arms adapted to frictionally engage the re- 45  
cesses of the clamping-plates until disengaged  
by the seating of a bobbin, substantially as  
specified.

In testimony whereof I have hereunto set  
my hand in presence of two subscribing wit- 50  
nesses.

JOHN RONEY.

Witnesses:

E. LE ROY SPAULDING,  
GEO. W. SPAULDING.