

No. 619,309.

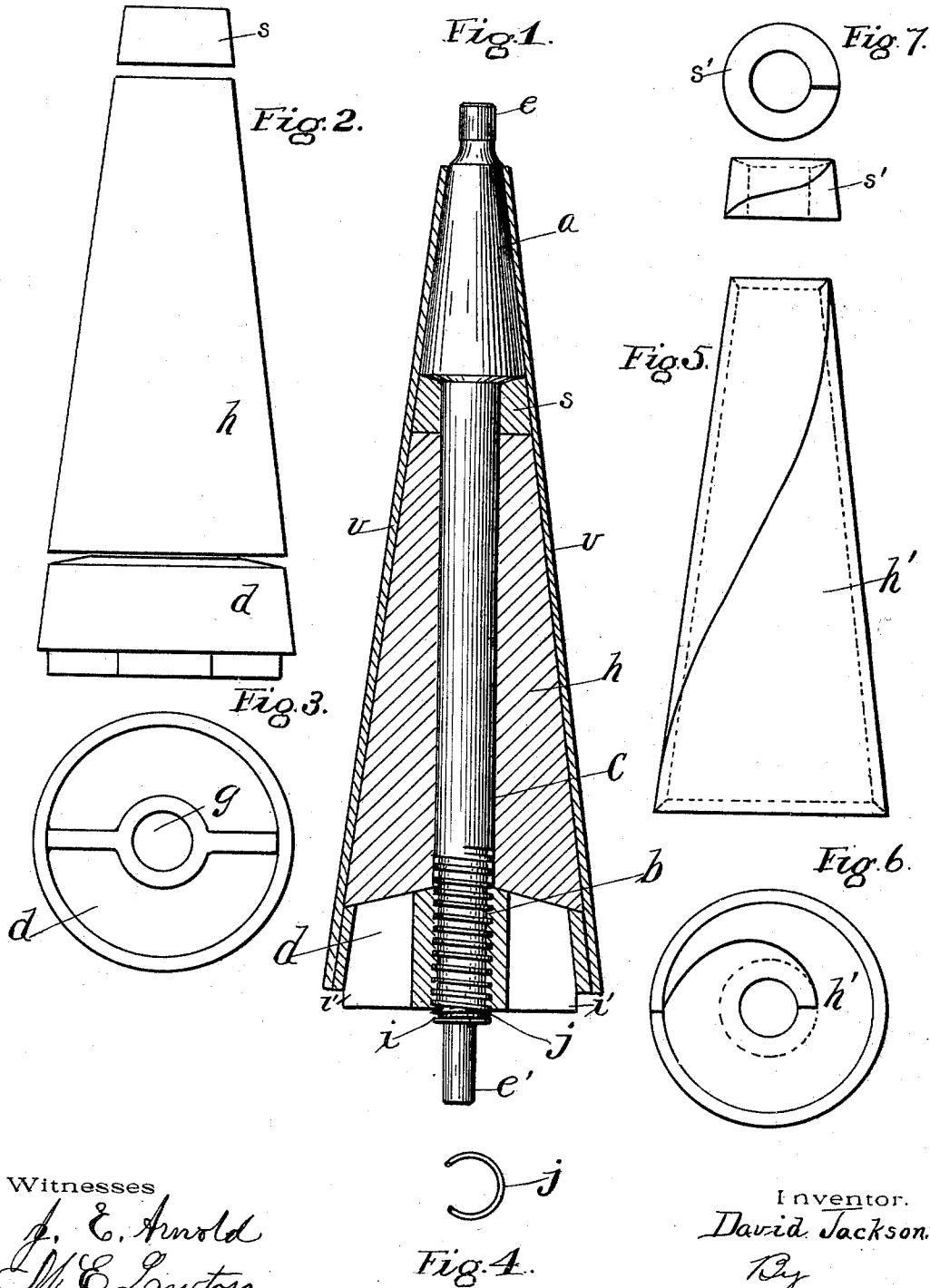
Patented Feb. 14, 1899.

D. JACKSON.

TUBE HOLDER FOR SPOOLING MACHINES.

(Application filed Nov. 10, 1897.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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TUBE-HOLDER FOR SPOOLING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 619,309, dated February 14, 1899.

Application filed November 10, 1897. Serial No. 658,003. (No model.)

To all whom it may concern:

Be it known that I, DAVID JACKSON, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Tube-Holders for Spooling-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has for its object to produce an improved means for holding a shell or tube of paper or the like on a spindle to have yarn or other fibrous material wound upon it.

Prior to this invention herein described cones of wood have been used for this purpose having springs provided with points to enter the paper shell, also dogs moved by cams and having points on them to hold the shells; but the great objection to these devices is that the points disintegrate the shell and spoil it and by projecting through it injure the yarn wound on it, so that it is sometimes necessary to cover the shell with a permanent covering of cloth or yarn for protection, and the working parts get also out of order and make trouble.

My invention does away with the points and holds the shell firmly by friction caused by the expansion of the cone or a portion of it, which will not injure the shells or become disabled in any way.

Figure 1 is a vertical section through the center of the shell and its holder on the spindle, which is shown in elevation. Fig. 2 shows the cone-holder and rubber collar in elevation that are shown in section in Fig. 1. Fig. 3 is an under side view of the screw collar or nut. Fig. 4 shows a spring-clip for holding the nut or collar from entirely unscrewing. Fig. 5 is a side elevation of the cone-holder cut through spirally on one side to allow of expansion. Fig. 6 is a view of the lower end of the cone-holder shown in Fig. 5. Fig. 7 shows a split ring or collar that may take the place of the rubber one.

The spindle *c* (seen in full lines in Fig. 1) has journals *ee'* at its ends and has a short conical portion *a* just inside the upper journal, usually made integral with the spindle.

The spindle *c* at its lower end just inside the journal has a screw-thread *b* made on it for a short distance up, and a collar or nut *d*, forming a part of the cone as a whole, has a screw-thread made in its hole *g*, fitting on the thread *b* on the spindle. A truncated cone-holder *h*, made of wood or metal, is fitted to go on the spindle above the nut *d*, and a narrow collar *s*, of rubber or other like material, is placed between the holder *h* and the taper portion *a* at the upper end of the spindle.

The operation of the parts is this: The collar *s* is first put on the spindle, then the holder *h*, and the nut *d* is screwed on, but is not screwed up tight against the holder *h*. The shell *v* is then put on the holder, and to secure it so it will not come off when used the shell and holder are held by one hand and the nut *d* is turned by the thumb and fingers of the other hand on the bars *i' i'* and screwed up so that the bevels of the nut *d* and cone *a* will expand the ring and create a friction on the inside of the shell that will prevent it from becoming loose until by a reverse motion of the parts the nut *d* is screwed down, when the pressure on the collar *s* will be relaxed and will allow the shell to be taken off. In place of the rubber collar *s* a split collar *s'* can be used, and the tapering ends of the cone *h* and *a* will cause the ring to expand and hold the shell, or the cone *h* can be split through on one side, as shown in Figs. 5 and 6, and made to expand by the taper of the top of the nut *d* and of the part *a*, so as to hold the shell securely. To prevent the nut *d* from entirely unscrewing when loose, I make an annular groove *i* in the spindle below the nut *d* and fit a spring-clip *j* (see Fig. 4) to go in to prevent the nut from coming off and allow room enough above it for the nut to turn in tightening up the parts and for releasing them.

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

1. A tube-holder consisting of a spindle, an enlarged bearing made thereon at one end, and an expansible collar forming the lower part of said bearing, combined with a split or divided shell or tube, and means for positively expanding the collar which is located just below the conical bearing, substantially as shown.

2. In a tube-holder the combination of a spindle, bearings thereon for a tube or shell, an expansible collar making part of said bearing, a nut fitted to screw onto the spindle and
5 expand said collar, substantially as described.

3. The combination of the spindle with the cone-bearing *a*, the expansible collar *s*, the truncated cone-collar *h*, a nut fitted to screw
10 on the lower end of the spindle, a groove made in the lower end of the screw portion of the spindle, and a spring-clip to enter the same to keep the nut on, substantially as described.

4. In a tube-holder, a spindle provided with a conical portion which is made integral with
15 its upper end, an expansible collar placed against the shoulder on the lower end of the conical portion of the spindle, and means for expanding the collar, whereby it is made to expand against and hold the tube or shell by
20 frictional contact, substantially as specified.

5. In a tube-holder, a spindle enlarged and made conical at its upper end and provided with a shoulder, an expansible collar placed against the shoulder, and a cone-holder placed

upon the spindle and having its upper end to
25 abut against the collar, combined with a nut placed upon the screw-threaded end of the spindle, substantially as described.

6. In a tube-holder, a spindle provided with bearings, at both of its ends, and having one
30 end enlarged and made conical; an expansible collar passed over the spindle and bearing against the inner end of the conical portion, combined with a cone-holder which is passed
35 freely over the spindle, and which has its smaller end to bear against the collar, and a nut placed upon the screw-threaded end of the spindle, the cone-holder being made concave at its largest end, and the inner end of the nut being made convex, substantially as
40 described.

In testimony whereof I have hereunto set my hand this 8th day of November, A. D. 1897.

DAVID JACKSON.

In presence of—

H. E. BARLOW,

JAMES E. ARNOLD.