No. 702,076. Patented June 10, 1902.

C. E. RILEY.

CONICAL TUBE HOLDER FOR WINDING MACHINES.

(Application filed Nov. 22, 1901.)

(No Model.)

Fig. 1.

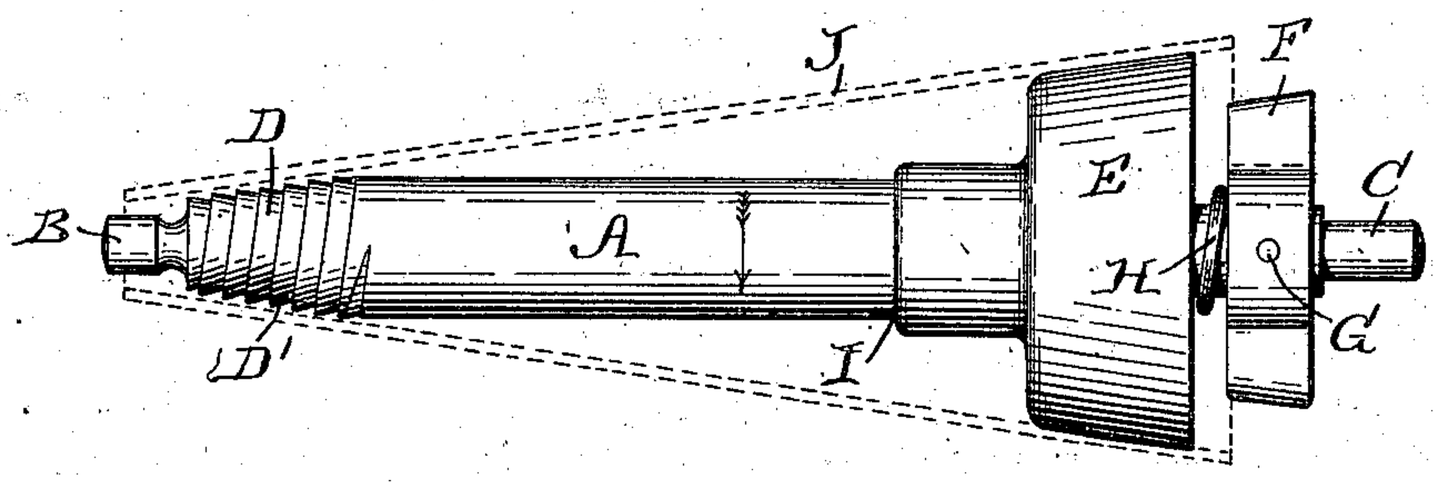


Fig. 2.

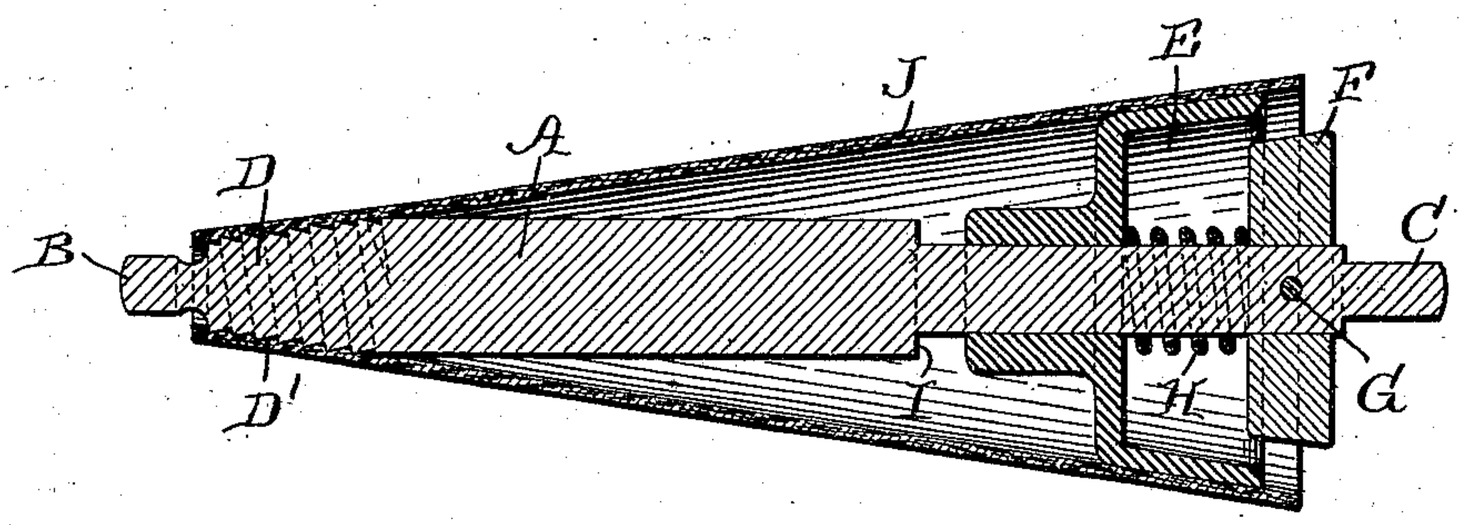
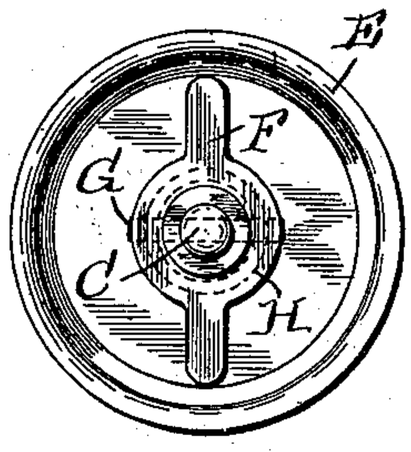


Fig. 3.



WITNESSES:

Chas. H. Luther Jr.

Ada E. Hagerty.

INVENTOR:

Charles E. Riley

by Joseph A. Miller & Co.

ATTORNEYS:

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES E. RILEY, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO HOWARD AND BULLOUGH AMERICAN MACHINE COMPANY, LIMITED, OF PAWTUCKET, RHODE ISLAND.

CONICAL-TUBE HOLDER FOR WINDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 702,076, dated June 10, 1902.

Application filed November 22, 1901. Serial No. 83,229. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. RILEY, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Conical-Tube Holders for Winding-Machines, of which the following is a specification.

Referring to the drawings, Figure 1 is a side view of my improved conical-shell holder, showing the conical shell in broken lines. Fig. 2 is a sectional view through the center of the spindle, showing the shell secured to the holder. Fig. 3 is an end view of the conical-shell holder.

The metallic arbor A is suitably formed at B and C for entering the ordinary bearings provided therefor. Upon the cone-shaped end portion (designated D) is cut or formed a left-hand spiral thread D′. At the opposite end a hollow cone-shaped cup E is mounted concentrically on the portion of the arbor formed for the purpose near the end C. Radial arms F, suitably shaped to be readily held by the fingers, are securely fastened to the arbor A by the pin G. A wire spring H, slightly in compression, reacts on the arms F and the interior end surface of E, thereby pressing the cone-shaped cup E against the shoulder I of the arbor when the holder is not in use.

A sectional view of a conical shell J is shown secured to the holder in Fig. 2 with the parts occupying their relative positions.

When in operation, the larger end of the conical shell, usually made of compressed paper or pasteboard, is thrust upon the end B of the arbor A until the cone-shaped surface of the hollow cup E begins to bear upon the interior of the shell J, then holding the cone stationary in one hand, grasping the arms F with the fingers of the other hand, slightly pushing the holder into the cone, and at the same time rotating the arbor a revolution or part of a revolution to the left, or in the direction of the arrow in Fig. 1. The spiral thread D is forced into the material of the cone sufficiently to hold the cone thereon and prevent the same from loosening from the arbor when placed in the machine during the winding process. The taper of the end D being slightly less than that of the cone-shaped cup E allows the latter to be pushed by compression of the spring H to a firm and uniform bearing against the interior of the cone before the threaded portion D reaches a diameter of a cone small enough to engage the screw-threads. To remove the conical shell from its holder, the arbor is rotated to the right, or in the direction opposite to the arrow, as shown in Fig. 1. The reaction of the spring H materially aids this operation by causing the arbor to be more easily released from the shell.

This holder by virtue of its construction causes the surfaces of irregularly-made cones to assume a perfectly-conical shape, thereby insuring evenness in winding and maximum production of yarn.

This device constitutes a simple and effective holder for paper or equivalent sheets of cone shape and may be easily and cheaply made.

I do not limit myself to the exact form of screw-thread shown, as any form of screw-thread may be used.

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

1. A shell-holder having an arbor provided with a conical screw-threaded end, a spring-supported conical cup loose on the arbor, in combination with means for rotating the arbor with respect to the cup, as described.

2. A shell-holder for winding-machines, having a central arbor spirally threaded to engage with the shell near one end, a conical cup loose on the arbor, means for turning the arbor with respect to the cup, in combination with a spring-support for the conical cup, as described.

3. In a shell-holder for winding-machines, the combination with the arbor A, the spiral threads D′ on the arbor and the radial arms F, of the cup E and the spiral spring H, whereby the shell is supported concentric with the arbor, as described.

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

CHARLES E. RILEY.

Witnesses:

T. O. NICHOLSON,

D. A. CARRICK.