

(Model.)

2 Sheets—Sheet 1.

J. M. CURTICE.

BOBBIN HOLDER FOR SPOOLING MACHINES.

No. 278,406.

Patented May 29, 1883.

Fig. 1.

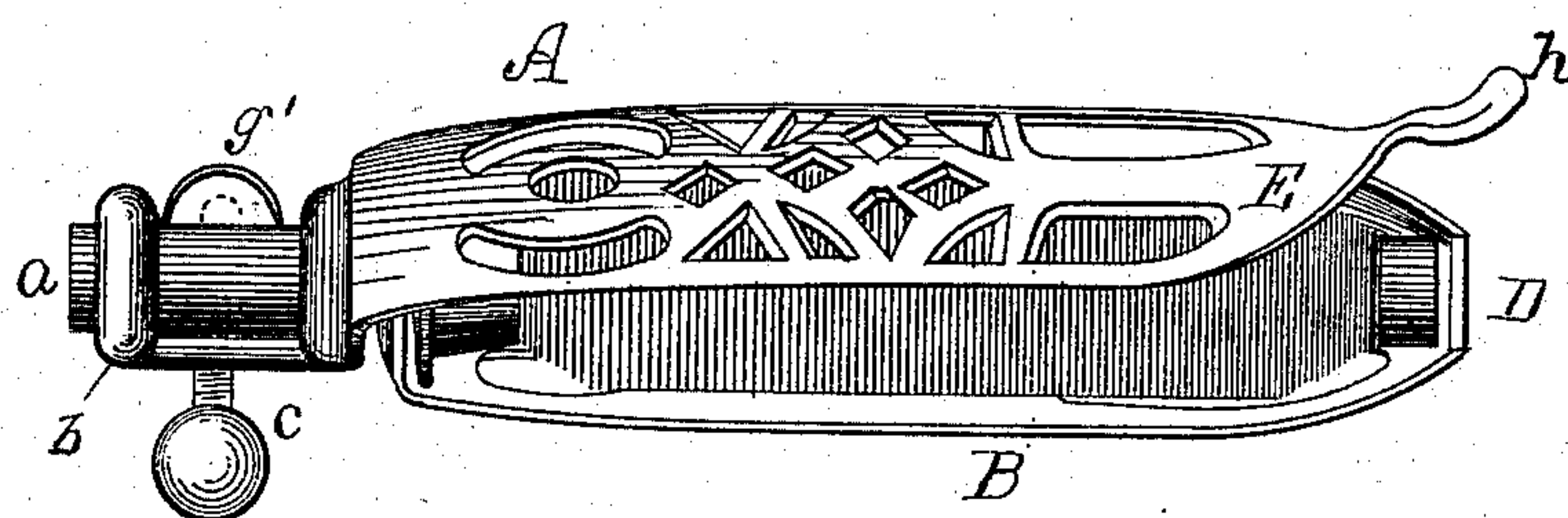


Fig. 2.

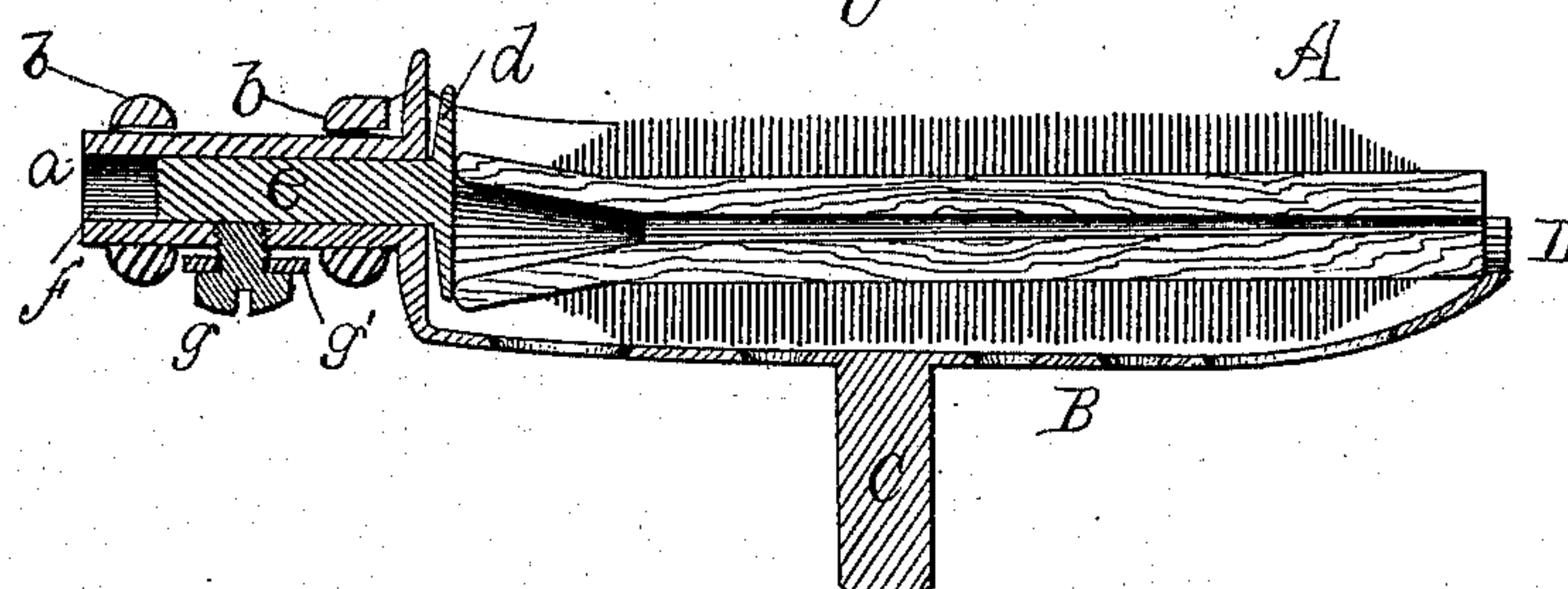


Fig. 3.

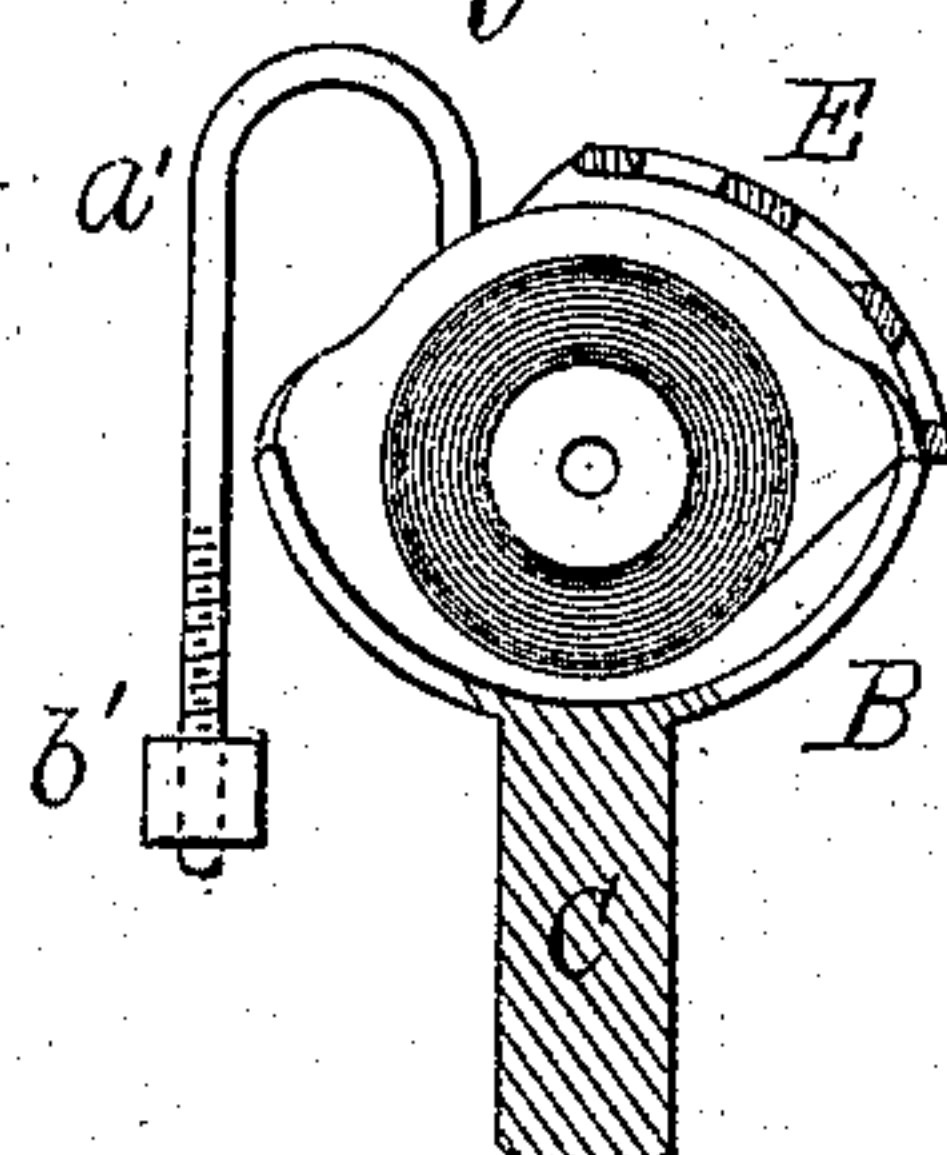
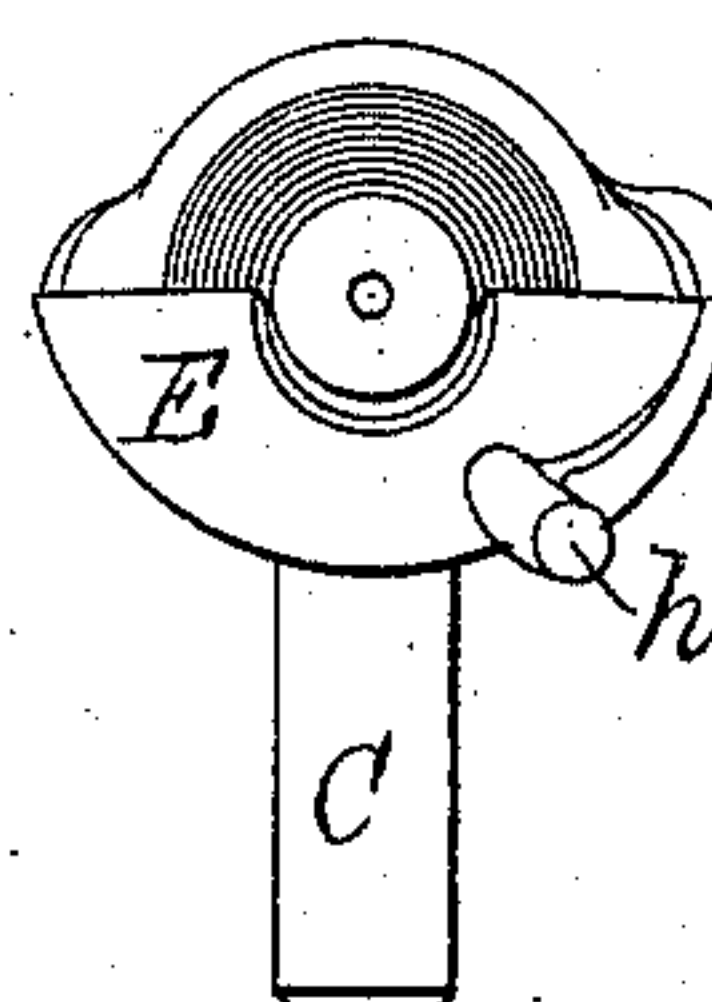


Fig. 4.



Witnesses.
W. B. Simpson.
H. C. Lodge.

Inventor.
John M. Curtice.
H. Curtis. Atty.

(Model.)

2 Sheets—Sheet 2.

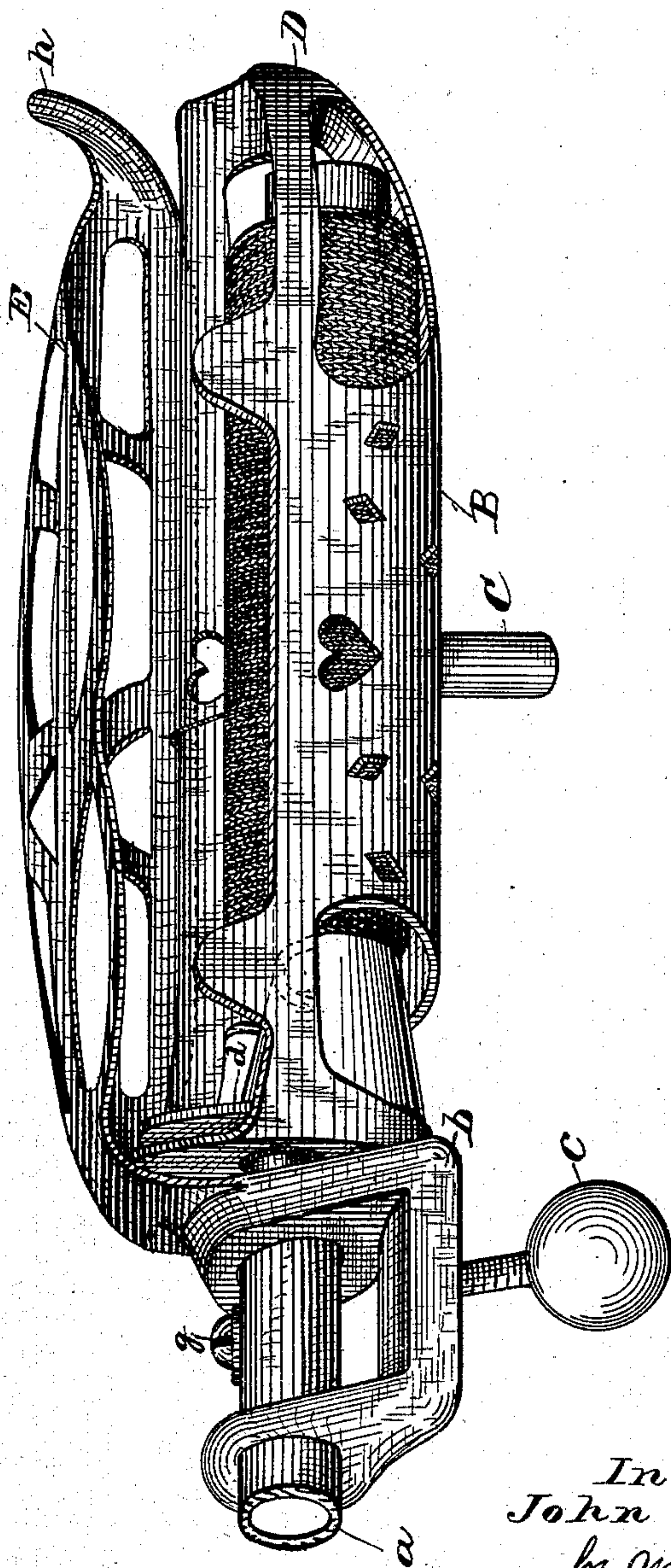
J. M. CURTICE.

BOBBIN HOLDER FOR SPOOLING MACHINES.

No. 278,406.

Patented May 29, 1883.

Fig. 5.



Witnesses
Wm. J. Danner
Harry E. Davis

Inventor
John M. Curtice
by *Wm. H. Babcock*
Attorney

UNITED STATES PATENT OFFICE.

JOHN M. CURTICE, OF LOWELL, MASSACHUSETTS.

BOBBIN-HOLDER FOR SPOOLING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 278,406, dated May 29, 1883.

Application filed April 10, 1882. (Model.)

To all whom it may concern:

Be it known that I, JOHN MILTON CURTICE, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Bobbin-Holders for Spooling-Machines; 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention consists, primarily, in the combination, with a stationary cradle designed to support the bobbin, of a rocking shield or hood pivoted at one end to one end of the cradle, and adapted to move in the arc of a circle partially about the said cradle, for the double purpose of exerting its weight upon the yarn to produce a tension upon the latter, and to partially cover the cradle and bobbin and prevent escape of the latter when the thread is intact, and to fall away to one side of the said cradle upon breakage or running out of a thread, in order that no obstruction may be presented to bar ready access to the bobbin.

My improvements further consist in providing the cradle with an adjustable end piece, whereby the effective length of the said cradle may be varied to accommodate bobbins of various lengths.

My improvements further consist in the employment of a horn upon the outer end of the rocking shield, this horn being inclined away from the body of the shield, and standing in such position relative to the adjacent end of the cradle as to enable the yarn from the bobbin to be readily and instantly passed beneath the shield.

In the accompanying drawings, Figure 1 represents a plan view of a bobbin-holder embodying my invention. Fig. 2 represents a longitudinal vertical section of the same. Fig. 3 represents a transverse vertical section of the same, showing a modification of the devices for adjusting tension. Fig. 4 represents an end view of a bobbin-holder similar to that shown in Fig. 1, the shield being turned so as to entirely uncover the bobbin; and Fig. 5

represents a perspective view, on a larger scale, of a bobbin-holder similar to that shown in Fig. 1, showing the bobbin a little displaced.

Reference being had to the above-mentioned drawings, A designates a bobbin-holder, consisting, principally, of a straight semi-tubular cradle, B, for the bobbin. When spooling a woof-thread the holder stands nearly perpendicular, but while spooling a warp-thread the holder is horizontal, as shown in the drawings. The holder A is provided with the usual lateral pivot, C, by which it is supported in position. The outer end or nose, D, of the tubular cradle B is contracted to support the small end of the bobbin and raise the yarn upon the latter above the floor of the cradle. The inner end of the cradle B is formed with a tubular axle, *a*. The hub *b* of shield E loosely surrounds this axle. This shield is outside of the cradle and capable of rocking motion about the cradle, between two extremes of movement, in one of which it lies idle alongside such cradle, with its upper edge about on a level with the adjacent edge of the cradle, while in the other extreme it extends above the latter edge and partially covers the cradle. In the first-named position the shield is idle and falls away from over the cradle, to permit of ready insertion or removal of a bobbin, while in the latter position it constitutes a cover to the cradle, to prevent the bobbin from jumping out. When the shield is in an intermediate position the thread passes out from the bobbin through the opening between the edges of the cradle and shield on one side of said cradle, and is in contact with the lower edge of said shield. The hub *b* of said shield has a weight attached to it on the side opposite to that on which the thread passes out of said bobbin-holder. Said weight counterbalances said shield to a degree depending on the leverage exerted by said weight, and preferably consists, as shown in the drawings, of a screw, *c*, having a large head and screwing into or out of said hub radially, to vary the leverage exerted by the gravity of its head. By advancing or retracting the screw *c* the shield is counterbalanced to a greater or less extent, and the weight and tension exerted by it upon the thread proportionately increased or diminished.

I do not confine myself to the adjustable

weight *c* as a means of varying the pressure of the shield upon the thread, as various other devices may be employed for the purpose.

To adapt the cradle for holding bobbins of various lengths, I provide it at one end with a flat head or end plate, *d*, having a shank, *e*, which is inclosed in a socket, *f*, formed in the tubular axle *a* of the cradle, and is confined within such socket by a clamp-screw, *g*, inserted in one side of the said axle and intercepting the shank *e*.

The outer end of the shield *E* is tapering and terminates in a horn, *h*, which departs at a tangent from the circumference of the cradle, as shown particularly in Fig. 1 of the drawings. The purpose of this horn is to enable the bobbin-thread to be readily inserted or passed beneath the shield, when a full bobbin is substituted for an empty one or when a thread is tied after breaking.

In the use of my holder, above described, supposing the cradle to be empty, with its shield dropped to the lowest point on one side of such cradle, as shown in Fig. 4 of the drawings, a full bobbin is placed in it from above, this act being accomplished with the greatest ease, as the top of the cradle is entirely unobstructed. The bobbin-thread is then passed about and beneath the horn *h* and led under the body of the shield *E*, and thence upward through the thread-guide of the spooling-machine. The draft upon the thread in the act of spooling tightens such thread to such a degree as to cause it to lift and support the weight of the shield *E*, from which it derives a certain degree of tension, which is of great advantage. The lifting of the shield by the draft upon the thread, as stated, also serves to cover the cradle and prevent the bobbin from jumping out should a thread break, the shield dropping to its lowest point, and the operator being enabled to readily pick up and tie the ends, after which the thread is again passed beneath the shield, as above stated.

It will be seen that the shield operates au-

tomatically to uncover the cradle, and, when the bobbin-thread breaks or runs out, permits of ready access to the cradle for the purpose of removing the empty bobbin and substituting a full one, while the draft upon the thread from the filled bobbin also operates automatically to lift the shield and cover the cradle. The adjustable end plate is an inexpensive and effective means of varying the effective length of the cradle.

In the modification shown in Fig. 3 the weight is a nut marked *b'*, and screws upon the screw-threaded outer end of a bent rod, *a'*, which is attached to the hub of shield *E*. The point of attachment corresponds to that of screw *c* in Fig. 1, and the operation thereto. Whenever the outer end of rod *a'* is inclined the adjustment of tension may be effected by screwing the nut *b'* up or down on said rod.

Having thus explained the nature, purpose, and operation of my invention, I claim and desire to secure by Letters Patent the following:

1. A bobbin-holding cradle, in combination with a shield adapted to rock thereon from side to side, said shield being weighted to diminish tension on the thread passing from the bobbin, as set forth.

2. A bobbin-holding cradle provided with an axle at one end thereof, in combination with a shield which has a tubular hub turning on said axle, substantially as set forth.

3. The combination, with a bobbin-holding cradle, of a longitudinally-adjustable end plate for adapting said cradle to bobbins of various sizes, substantially as set forth.

4. The combination, with cradle *B*, of the rocking shield *E*, provided at one end with the inclined horn *h*, substantially as and for the purpose set forth.

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

JOHN MILTON CURTICE.

Witnesses:

H. E. LODGE,
F. CURTIS.