

No. 756,166.

PATENTED MAR. 29, 1904.

J. HAYDEN.  
YARN SPINNING APPARATUS.  
APPLICATION FILED JAN. 14, 1903.

NO MODEL.

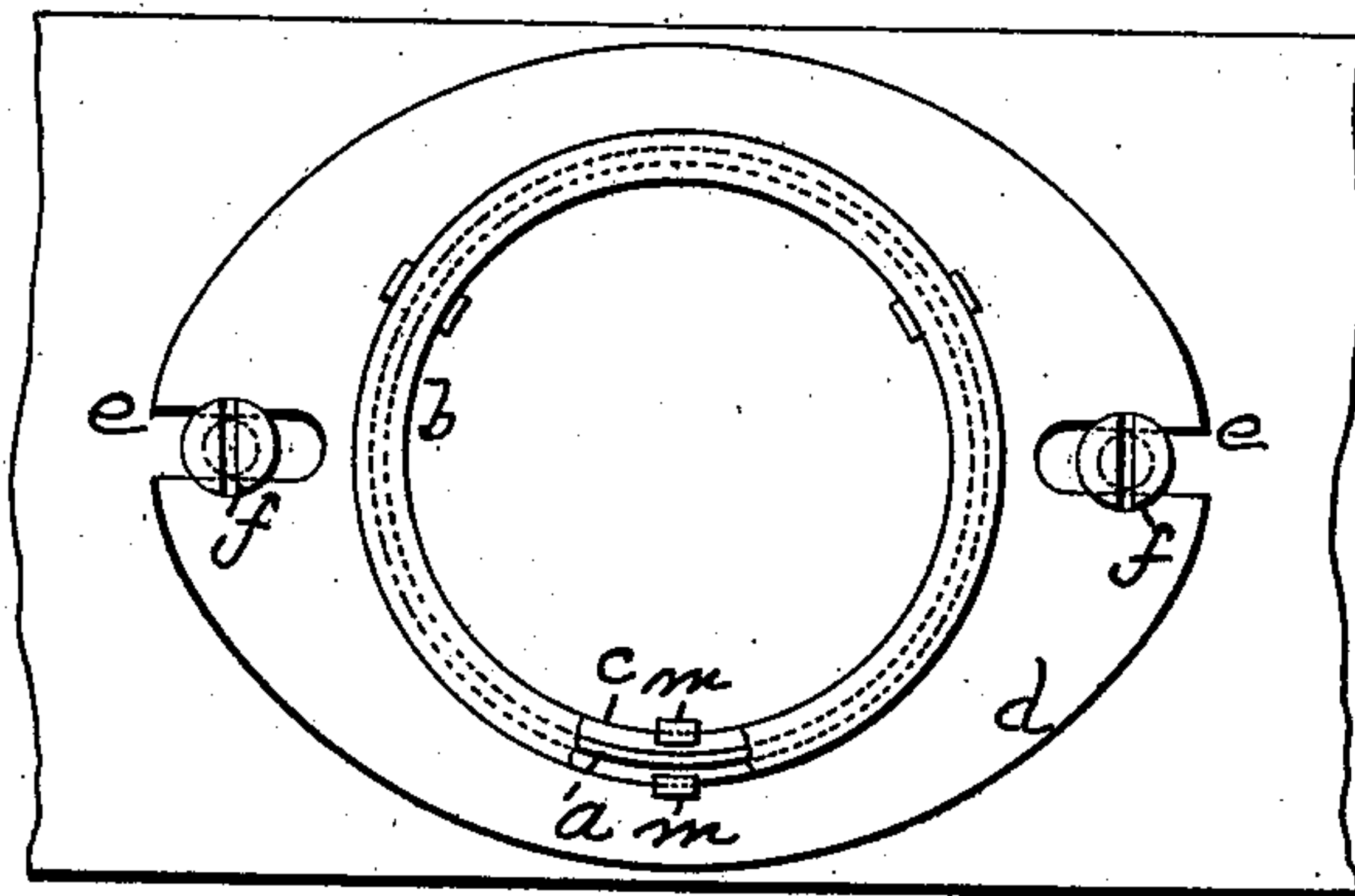


Fig. 1.

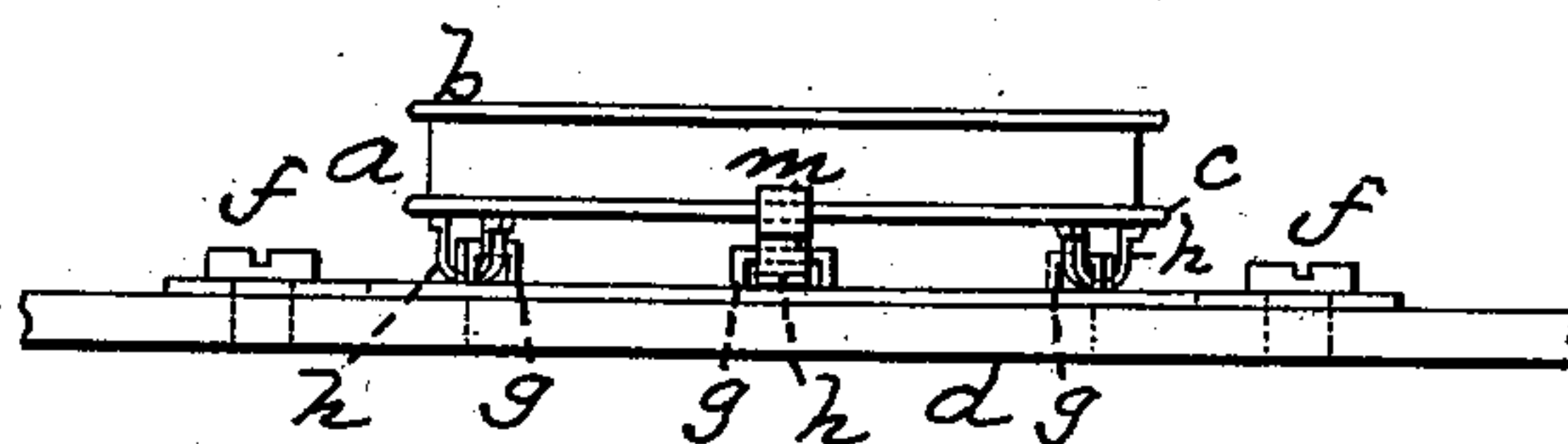


Fig. 2.

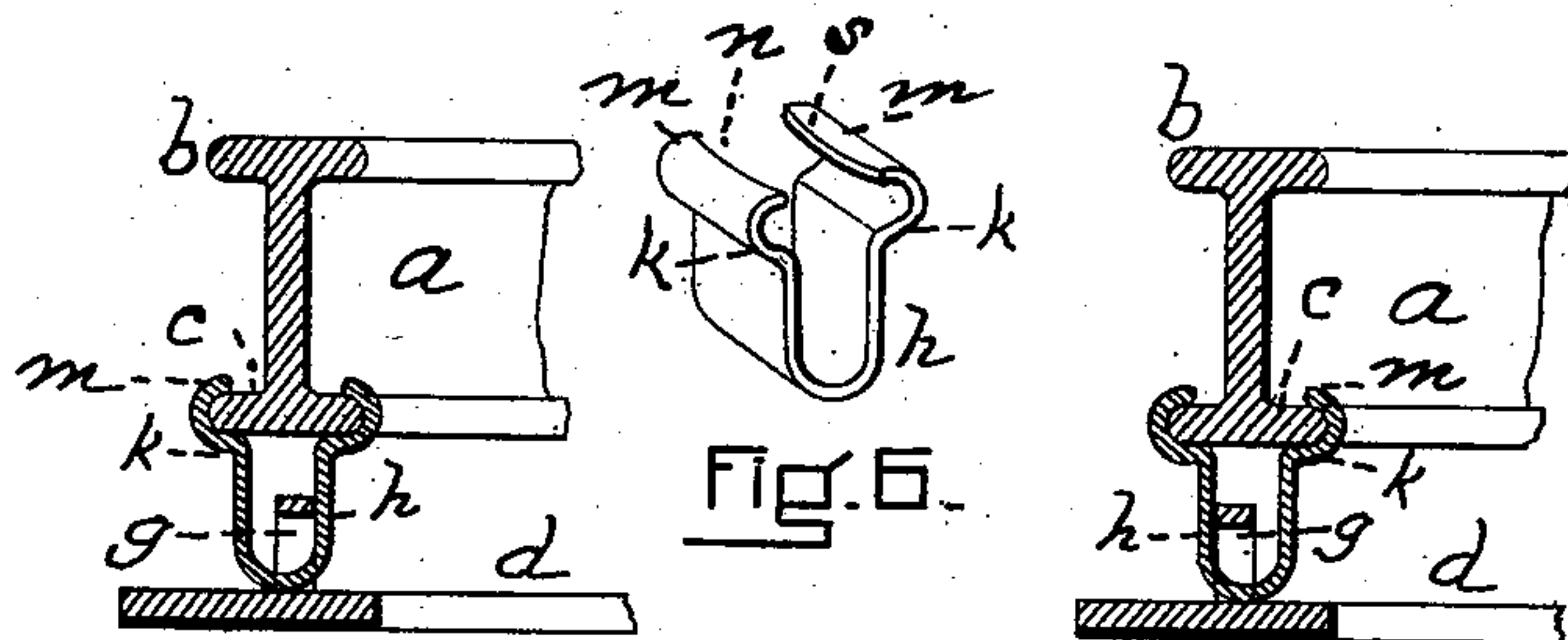


Fig. 3.

Fig. 4.

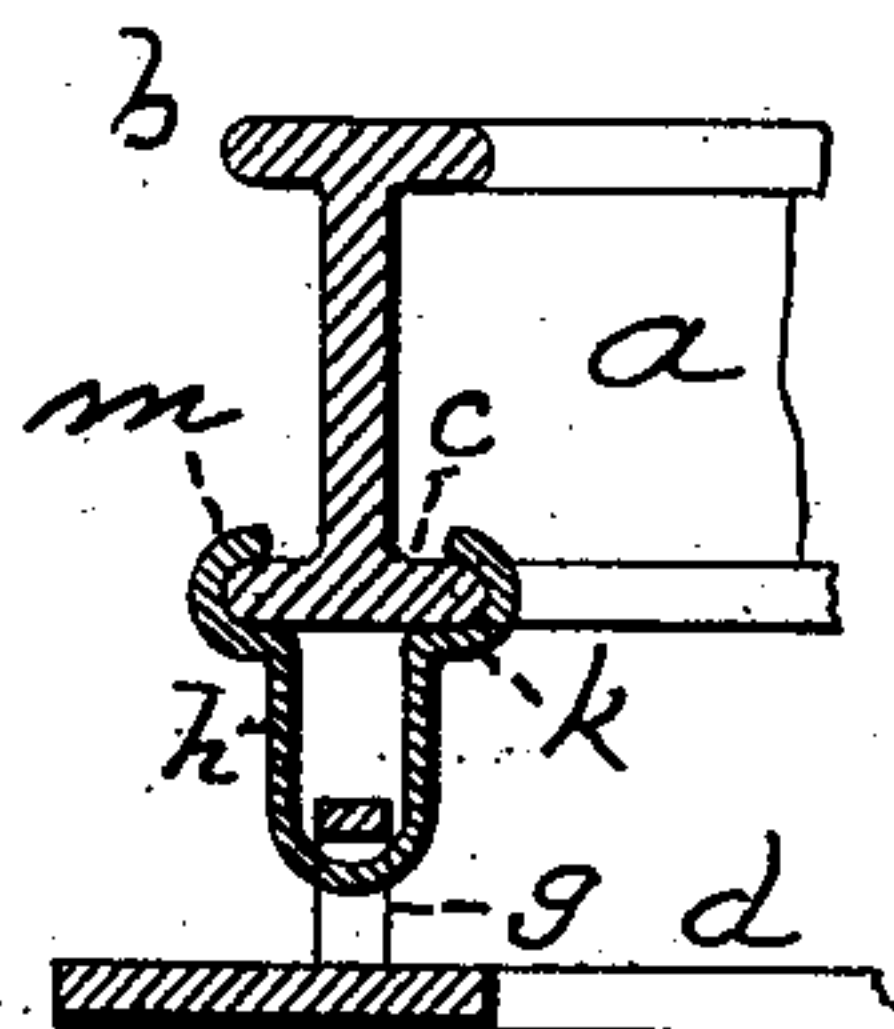


Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## YARN-SPINNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 756,166, dated March 29, 1904.

Application filed January 14, 1903. Serial No. 138,978. (No model.)

*To all whom it may concern:*

Be it known that I, JOEL HAYDEN, a citizen of the United States, residing in Scituate, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Yarn-Spinning Apparatus, of which the following is a specification.

This invention relates to spinning apparatus comprising a spinning-ring and its supporting-plate, and particularly to that class of spinning apparatus in which the ring has a limited movement vertically and horizontally, but not rotatively, with relation to its support.

My invention has for its principal objects to provide for and allow vertical and horizontal movement or vibration of the spinning-ring with relation to the holder, whereby the ring can yield sufficiently vertically or horizontally to inequalities in the yarn without notching, perforating, or in any manner altering or affecting the integrality of the ring; to provide for such movement and allow the ring to be reversed; to provide spring connections between the ring and its support; to raise the ring from its supporting-plate; to prevent any perceptible swinging or pivotal movement of the ring, but to confine its relative movement to vertical and horizontal or edgewise motion; to allow such horizontal movement to be in any direction at right angles to the axis of the spindle; to so construct the connections that they will fit, retain, and prevent from relative rotation the ring, and to accomplish the several results without altering in the slightest degree the ordinary reversible spinning-ring.

The nature of my invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a spinning-ring and supporting-plate embodying my invention, a small portion being represented as broken out. Fig. 2 is an elevation or edge view of the same. Figs. 3 and 4 are enlarged details in vertical section, illustrating the relative positions of the ring when moved hori-

zontally in opposite directions. Fig. 5 is an enlarged detail in vertical section, illustrating the ring moved vertically. Fig. 6 is a perspective view of one of the spring connections removed.

Similar letters of reference indicate corresponding parts.

*a* represents a spinning-ring provided with upper and lower flanges *b c* and constructed exactly as usual.

*d* is the supporting plate or base, provided with the ordinary recesses *e* to receive the shanks of the attaching-screws *f* for securing the plate to the ring-rail. This plate or base is constructed as usual, except that it has secured rigidly to its upper side or integral therewith a number, preferably three, of ears *g*, staple-shaped in vertical section, which extend vertically up from the base and are preferably of flat strap-shaped metal.

*h* represents the U-shaped portion of a spring clamp or clip, whose jaws extend upward, oppositely outward at *k*, and inward at *m*, the inner edges *n* and *s* being concentrically curved, as shown—that is, the inner edge *n* of the outer lip *m* being concave and the inner edge *s* of the inner lip *m* being convex, the curvatures being substantially concentric with the ring *a*.

When the parts are assembled, each clip *h* extends through an ear *g* and the parts *k m* of the clips clamp tightly against the under and upper sides of the lower flange *c* of the ring, the curved edges *n* and *s* enabling the grip on the upper side to continue at even width for the length of the lips *m*. Thus the ring is held tightly by the clips and there is no relative movement, rotative or otherwise, of the clips and ring. The thickness of the edge of the ears *g* being much less than the space between the two members of the clips *h* there is ample room for a limited horizontal movement of the clips, and hence of the ring, and the inside height of the ears being greater than the thickness of the bottom of the clips there is ample space for vertical movement of the clips and ring.



The clips *h* being of spring metal the jaws can be readily spread for the purpose of reversing the spinning-ring in order to utilize the lower flange after the upper flange has been rendered useless by wear. As these clips hold the ring rigidly solely by means of their shape without perforating, notching, or in any manner altering the ring, the rings may be bought in open market and applied without necessity for making any preparation or going to any expense.

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

1. A ring-supporting base-plate adapted for attachment to a ring-rail; an integral spinning-ring; clips extending upward from the plate to the ring and clamping the latter by means of its lower flange; and ears secured to the base-plate and extending through the clips, there being sufficient difference between the height and width of the ears and the height and width of the clips to allow limited vertical and horizontal or edgewise movement.
2. A ring-supporting base-plate adapted for attachment to a ring-rail; an integral spinning-ring; ears secured to and extending up from the base-plate; and the clips or clamps *h* extending through said ears and provided at their upper ends with the outwardly-extending portions *k* and the inwardly-extending lips *m*,

adapted to clamp and hold the ring by its lower flange, for the purpose set forth.

3. A ring-supporting base-plate adapted for attachment to a ring-rail; an integral spinning-ring; ears secured to and extending up from the base-plate; and the clips or clamps *h* extending through said ears and provided at their upper ends with the outwardly-extending portions *k* and the inwardly-extending lips *m* provided with the concentrically-curved inner edges *n s* adapted to clamp and hold the ring by its lower flange, for the purpose set forth.

4. A ring-supporting base-plate adapted for attachment to a ring-rail; substantially staple-shaped ears extending up from said ring-rail; an integral spinning-ring; and spring clips or clamps comprising two upwardly-extending members formed at their upper ends with double lips adapted to clamp and hold rigidly by its lower flange the ring, said clips extending through the corresponding ears, substantially as and for the purpose set forth.

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

JOEL HAYDEN.

Witnesses:

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