J. GOULDING.

RING SPINNING.

No. 188,736. Patented March 27, 1877.

Fig. 1.

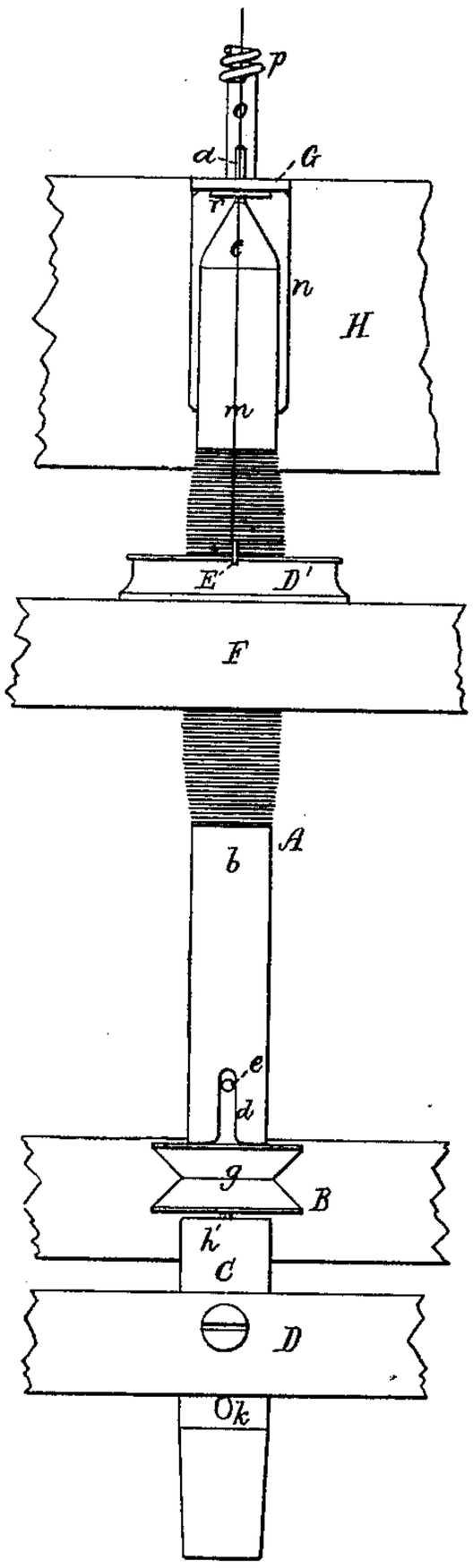


Fig. 2.

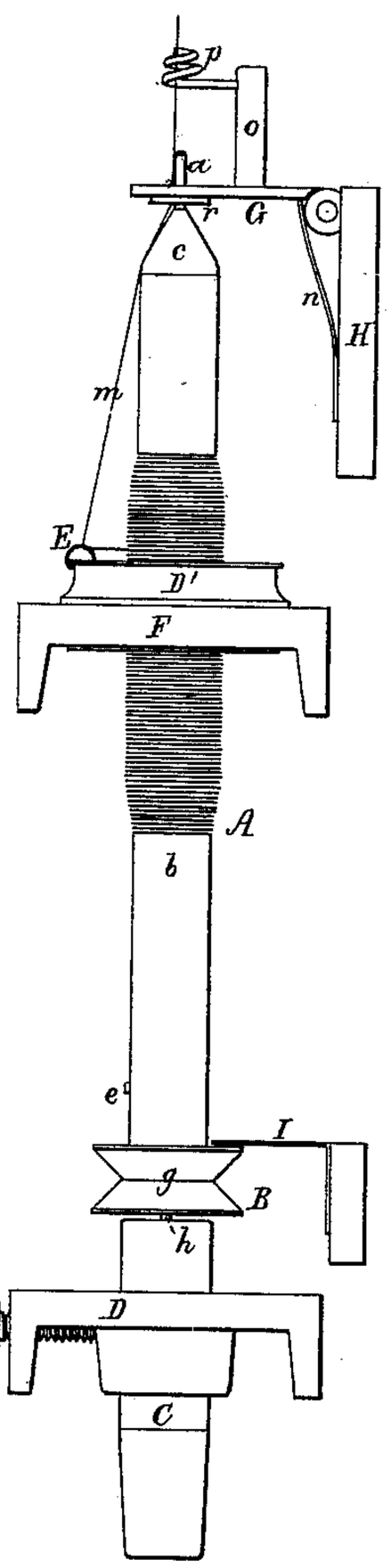


Fig. 4.

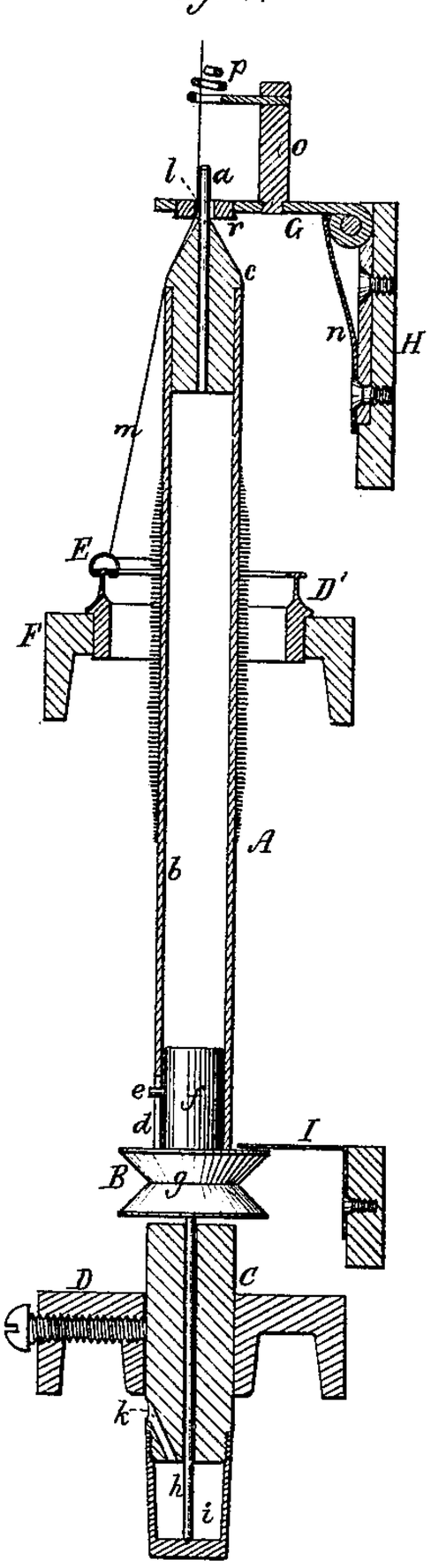
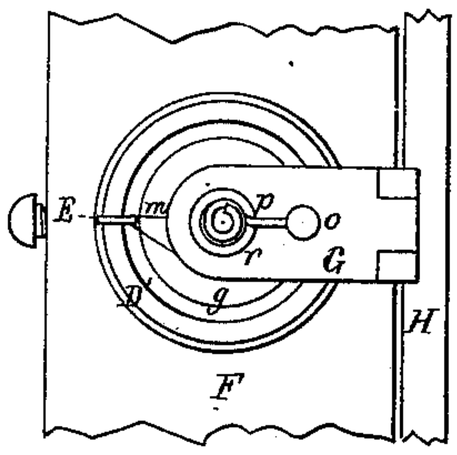


Fig. 3.



Witnesses.
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J. R. Snow.

John Goulding.
by his attorney.
R. H. Eddy

UNITED STATES PATENT OFFICE.

JOHN GOULDING, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN RING-SPINNING.

Specification forming part of Letters Patent No. **188,736**, dated March 27, 1877; application filed July 31, 1876.

To all whom it may concern:

Be it known that I, JOHN GOULDING, of the city and county of Worcester, and State of Massachusetts, have invented new and useful Improvements in Ring-Spinning, and in mechanism therefor; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, Fig. 2 a side view, Fig. 3 a top view, and Fig. 4 a vertical section, of a spinning-ring and traveler, and their adjuncts, embodying my invention; which relates to or consists in, first, the combination of the bobbin, provided with the journal at its upper end, and a loose bearing, as described, for the reception and play of the yarn and said journal, and with the spindle arranged with and applied to the bobbin at its lower end, substantially as specified; second, the loose-bearing carrier, pivoted or so applied to its supporter as to be capable of being raised off the journal of the bobbin, essentially as and for the purpose set forth, in combination with the bobbin and the journal arranged at the upper end thereof, as hereinafter explained; third, the combination of a thread-guide, the loose bearing, the bobbin provided with the journal at top, and the spindle applied to the bobbin at its foot, all being substantially as specified; fourth, the thread-guide and the loose bearing applied to the carrier so as to be simultaneously movable by and with it, as described, in combination with the bobbin and the journal arranged at the upper end thereof, as hereinafter explained.

In carrying out my invention, the spindle extends only a short distance up into the bobbin, the part so projecting into the bobbin being simply a foot-bearing thereto. Thus I dispense with what is usually termed the "spindle-blade," which, as heretofore applied to a ring-spinning bobbin, extends within it at least half its height, if not wholly through it. I make the bobbin answer the double purpose of a spindle-blade and a bobbin, and this I do by constructing or providing the bobbin A with a small journal, *a*, projecting upward from the central part of the upper end of such bobbin; and I usually compose the bobbin of a "quill" or tubular body, *b*, a solid head, *c*, and a journal, *a*, all arranged as represented.

Furthermore, the bobbin, at its lower end, is slotted, as shown at *d*, to receive a stud, *e*, projecting from the foot-bearing or part *f* of the spindle B, which part extends a short distance up within and fits loosely to the bobbin at its lower or open end. The bobbin rests upon the whirl *g* of the spindle. That part, *h*, of the spindle which is below the whirl I usually make of steel wire, and extend it into a compound bolster and step, C, formed and applied to a rail, D, as represented. There is within the part C an oil-chamber, *i*, provided with an induct, *k*, arranged as shown. The spindle at its foot rests on the bottom of the said chamber.

The ring is shown at D′ and the traveler at E, the said ring being concentric with the bobbin and supported by a rail, F.

The journal *a* of the spindle extends up within or through a loose bearing, *l*—that is, a cylindrical hole somewhat or a little larger in its diameter than that of the spindle and the yarn combined. This is constructed thus in order that the yarn *m*, with the journal *a*, may go through the bearing, and the yarn be free to travel around in the bearing, and also about the spindle, free to revolve in the bearing. The said loose bearing is formed in a piece or disk, *r*, of rawhide or other suitable material, fixed to or in a carrier, G, hinged to a supporter or frame, H. This supporter is furnished with a friction-spring, *n*, to bear against the hinge, and serve as a stop to arrest the carrier when down or in a horizontal position.

A post, *o*, erected on the carrier G, supports a yarn-guide, *p*, arranged to project over the journal *a*, in manner as shown.

On raising the carrier, the bearing may be detached from the bobbin-journal, so as to admit of the removal of the bobbin from, or the application of it to, the spindle and ring. The guide moves with and is moved by the carrier, while the latter may be in the act of being moved either way. The guide determines the proper position of the yarn relatively to the bearing *l*, and admits of the necessary movements of the yarn around, in, and through the bearing.

While the yarn is being spun it will revolve or swing around the bobbin-journal, which at the same time will rapidly revolve in the said bearing.

The yarn or sliver, after being led through the guide *p*, passes through the bearing *l*, thence down to and through the traveler, and thence to the body of the bobbin.

My invention enables me to make a very light bobbin, to dispense with a spindle-blade as usually constructed, and to attain in consequence thereof a very great velocity of the bobbin, so as to effect an important and valuable improvement in the art of spinning.

I is a projection extending over the whirl, and is adapted to prevent the raising of the spindle while a bobbin is being detached from it.

Having thus described my improved mechanism for spinning, what I claim as my invention therein is as follows, viz:

1. The combination of the bobbin A, provided with the journal *a* at its upper end, with a loose bearing, *l*, as described, for the reception and play, as explained, of the yarn and such journal, and with the spindle B arranged with and applied to the bobbin at its lower end, substantially as specified.

2. The loose bearing-piece carrier G, pivoted or so applied to its supporter as to be capable of being raised off the journal of the bobbin, essentially as and for the purpose set forth, in combination with the bobbin A and the journal *a*, arranged at its upper end, as set forth.

3. The combination of the yarn-guide *p*, the loose bearing *l*, the bobbin provided with the single journal at its top, and the spindle applied to the bobbin at its foot, all being substantially as specified.

4. The yarn-guide *p* and the loose bearing *l*, applied to the carrier G so as to be simultaneously moved with and by it, as set forth, in combination with the bobbin A and the journal *a*, arranged at its upper end, as set forth.

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Witnesses:
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