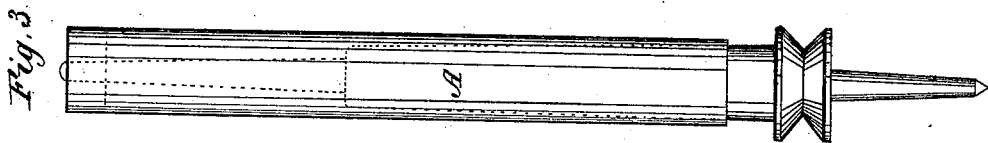
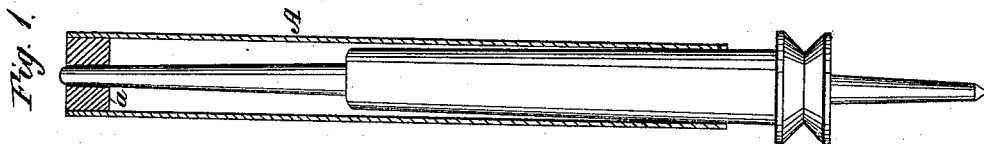
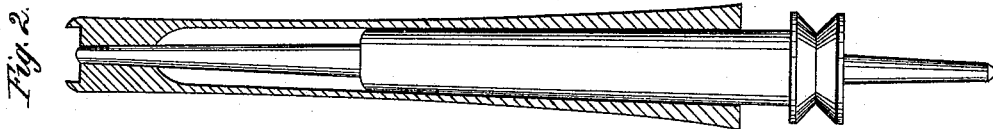


J. McCAUSLAND.
PAPER COP TUBE.

No. 180,358.

Patented July 25, 1876.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN McCAUSLAND, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN PAPER COP-TUBES.

Specification forming part of Letters Patent No. **180,358**, dated July 25, 1876; application filed June 20, 1876.

To all whom it may concern:

Be it known that I, JOHN McCAUSLAND, of the city and county of Providence, and State of Rhode Island, have invented a new and Improved Paper Cop-Tube; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a vertical section of the improved cop-tube applied to the Rabbeth and Sawyer spindle; Fig. 2, a vertical section of the ordinary wooden tube applied to the same spindle. Fig. 3 is a side elevation of the improved tube applied to the same spindle.

My invention relates to an improved paper cop-tube, especially designed for the Rabbeth and Sawyer spindle, which spindle consists of a central stem, upon the lower portion of which is constructed an enlarged tapering shell, upon which the lower edge of the cop-tube is fastened by frictional contact. The cop-tube ordinarily employed with this form of spindle is a wooden one, formed with a small bearing at the top, and cut away centrally or bored out at the lower part to accommodate the tapering shell of the spindle. As many thousands of these tubes are constantly employed in spinning-mills, the production of wooden tubes of this kind is expensive, and as they require to be cut so thin, they are in construction a mere shell of wood, which is so fragile as to be easily broken, and this renders the loss from breakage a considerable item of expense, and also produces much delay and embarrassment.

My invention consists, as a new article of manufacture, in the particular construction of a paper cop-tube made in the form of a cylinder of uniform diameter, and having a bushing of wood located in the upper end directly at the edges, and flush with the same, for the purpose hereinafter explained.

In the drawing, Fig. 2 shows the ordinary wooden cop-tube applied to the Rabbeth and Sawyer spindle, while Fig. 1 shows my improved paper cop-tube A applied to the same form of spindle. The said tube A is made of paper wound in folds to form a cylinder which is of uniform diameter, its transverse dimensions being so proportioned with respect to

the enlarged portion of the spindle as to readily slide thereon, and be secured by frictional contact. The tube is provided with a bushing, *a*, of wood, which is perforated longitudinally with a hole of a proper size to fit nicely the upper part of the stem of the spindle, which bushing is located at the top of the tube, and flush with the upper edges thereof.

The cop-tube is made of paper because it is cheaper, (costing only about one-third as much as wood,) lighter, tougher, and not subject to the same fracture that wood is. It is made of uniform diameter so as to obviate the uneven tension of the thread or sliver, which is produced by varying diameters of the tapering wooden cop-tube. It is provided with a bushing in order to form a bearing to the upper end of the tube to steady the cop, and the said bushing is located at the extremity of the tube, and flush with the edges for several reasons: first, because at the extremity it forms the steadiest and most substantial support as a bearing for the cop-tube; secondly, because it prevents the lateral mashing in of the end of the tube, and the consequent slipping off of the thread; thirdly, because it re-enforces the edges of the tube, and prevents the same from becoming ragged, which would have a tendency to catch the thread and break it; and, fourthly, because it affords a stiff end to meet the strain incident to putting the tubes on the spindle.

In defining the limits of my invention, I would have it understood that I do not claim, broadly, a paper cop-tube; but confine my invention to a paper cop-tube, constructed as hereinbefore described, with the bushing flush with the outer edges of the same.

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

As a new article of manufacture, a paper cop-tube, A, of uniform transverse dimensions, having a wooden bushing, *a*, located directly in the end of the tube, and flush with the edges of the same, for the purpose described.

JOHN McCAUSLAND.

Witnesses:

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