(No Model.)

J. J. BROADBENT & E. MITCHELL.

APPARATUS FOR SPINNING AND TWISTING FIBROUS MATERIAL.

No. 261,300. Patented July 18, 1882.

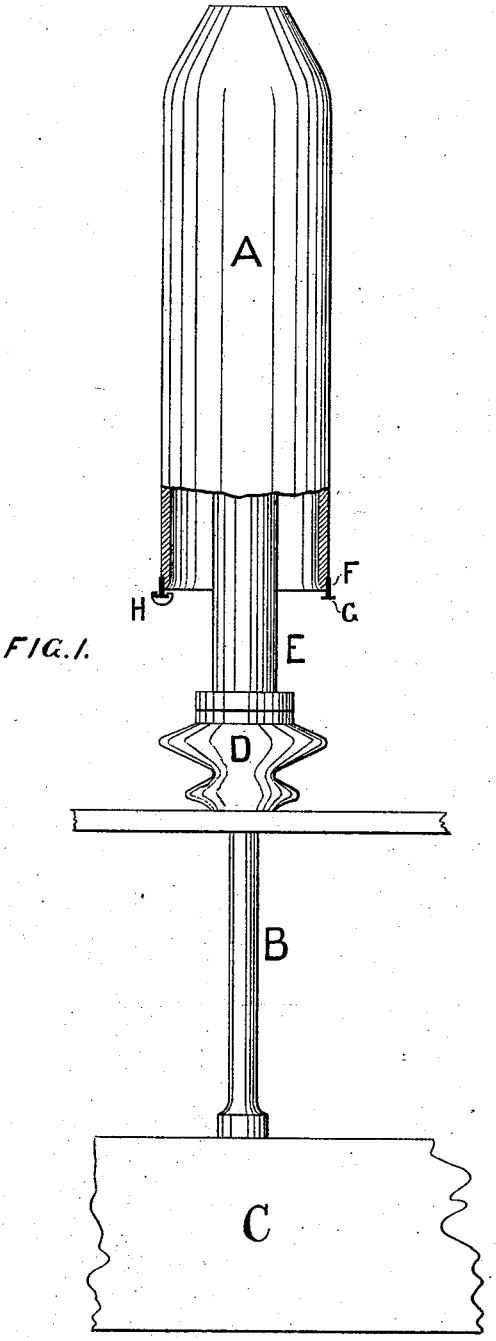

FIG. 1.

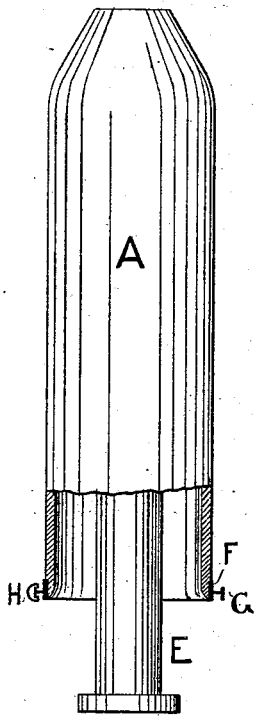

FIG. 2.

Witnesses
James J. Tobin
Hamilton D. Turner.

Inventors
John J. Broadbent
and
Edward Mitchell
by their Attorneys
Howson and Sons

UNITED STATES PATENT OFFICE.

JOHN J. BROADBENT AND EDWARD MITCHELL, OF BRADFORD, COUNTY OF YORK, ENGLAND.

APPARATUS FOR SPINNING AND TWISTING FIBROUS MATERIAL.

SPECIFICATION forming part of Letters Patent No. 261,300, dated July 18, 1882.

Application filed May 25, 1882. (No model.) Patented in England July 30, 1881, No. 3,316.

To all whom it may concern:

Be it known that we, JOHN JOHNSON BROADBENT and EDWARD MITCHELL, subjects of the Queen of Great Britain and Ireland, and residing at Bradford, in the county of York, England, have invented certain Improvements in Apparatus for Spinning and Twisting Fibrous Materials, (for which we have obtained Letters Patent in Great Britain, No. 3,316, dated July 30, 1881,) of which the following is a specification.

Our invention relates to improvements in that class of spinning known as "cap-spinning," and has for its object the combination of a ring and traveler with caps used for the roving, spinning, or twisting of fibrous substances, whereby we are enabled to utilize the present cap frames and spindles, and to produce a smoother, and therefore better, yarn than can be obtained by the use of caps as ordinarily constructed.

The invention consists in forming at the bottom part of the cap a collar, which collar is so arranged that flanges are formed thereon which constitute the ring, upon which is placed an ordinary traveler, similar to those used on ring-spinning frames. Our improved ring can be applied to caps of various sizes, to suit the dimensions of the bobbins upon which the fiber is being manipulated, and when used for roving or twisting is carried into effect exactly in the same manner as that described for spinning.

In the accompanying drawings, Figure 1 represents an elevation of an ordinary fixed spindle which carries at its upper end a cap with our improved ring fitted thereto. Fig. 2 is an elevation of a cap with our improved ring fitted thereto, constructed in a different manner to that shown in Fig. 1.

Both figures are partly in section, and corresponding parts are indicated by similar letters.

The caps are indicated by the letter A, and fitted to the ordinary spindles, B, which are secured in the usual manner to what is commonly known as the "top" rail, C, of the frame. Each spindle is incased by a revolving tube and whirl D, upon which the bobbin E is placed, and to which rotating motion is communicated in the usual manner. On the bottom part of the caps is shrunk a collar, F, in which are cut the grooves or flanges G, thereby forming a ring somewhat similar to those used on ring-spinning machines. On each of these rings is placed a traveler, H, through and in contact with which the yarn is made to pass in its travel from the front rollers to the bobbin E on the tube, which is driven and traversed in the same manner as in ordinary cap-spinning machines. By passing the yarn through and in contact with the traveler H and substituting travelers of different weights and sizes for different classes of yarn we are enabled to regulate the amount of drag on the yarn to such an extent that we can raise the caps considerably nearer to the guide-boards than when manipulating the fiber with caps as ordinarily constructed, thereby, by bringing the caps nearer to the guide-board, the yarn has to travel a shorter distance from the guide board to the bobbin on the spindle, and in proportion to the reduced distance the yarn in revolving describes a circle of less diameter and passes through the air with less force, thus reducing the liability of the passage of the air through and opening out the yarn, which causes it to be rough and "stary," as is the case with ordinary cap-spinning.

What we claim as our invention is—

1. The combination of the cap A with the collar F, having the grooves or flanges G, substantially for the purpose and in the manner described.

2. The combination of a cap with a ring constructed to carry a traveler secured thereon, substantially for the purpose described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

J. J. BROADBENT.
EDWARD MITCHELL.

Witnesses:
JOHN WAUGH,
ARTHUR GIBSON.