

No. 633,302.

Patented Sept. 19, 1899.

E. S. WHITAKER & J. CHADWICK.

CAP SPINDLE.

(Application filed Apr. 13, 1898.)

(No Model.)

Fig. 1.

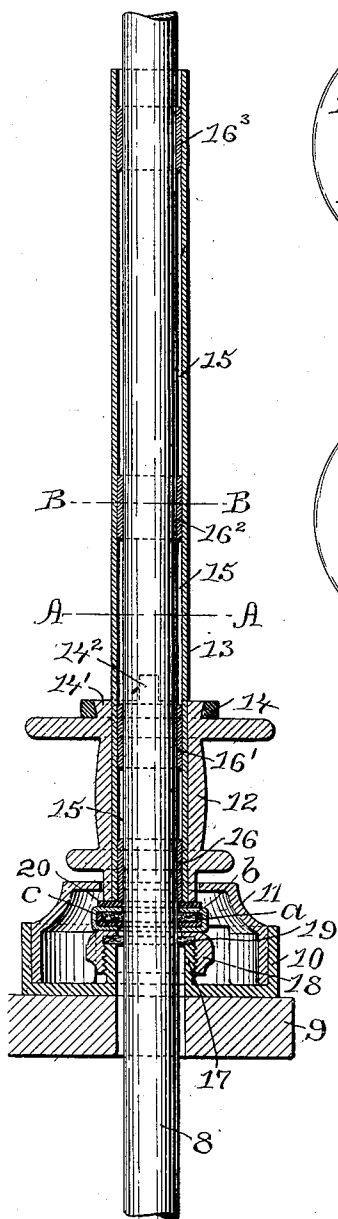


Fig. 2.

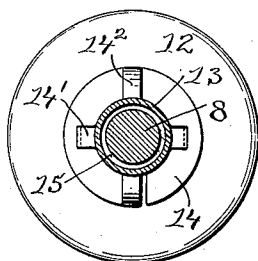


Fig. 3.

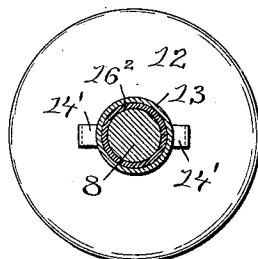


Fig. 4.

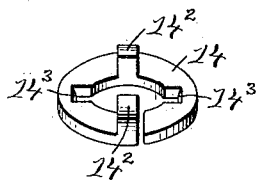


Fig. 5.

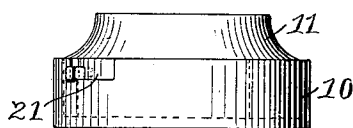


Fig. 6.

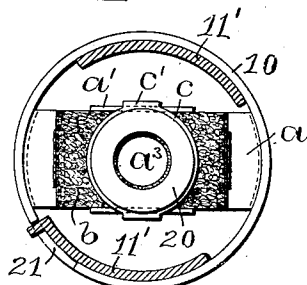
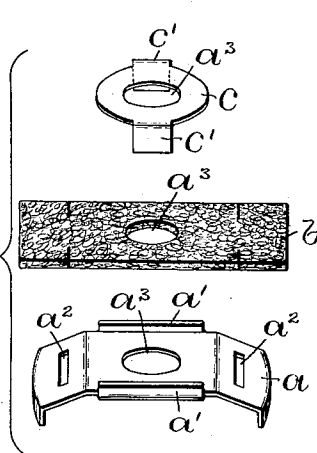
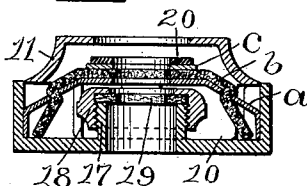


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDMUND S. WHITAKER AND JOHN CHADWICK, OF PROVIDENCE, RHODE ISLAND.

CAP-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 633,302, dated September 19, 1899.

Application filed April 13, 1898. Serial No. 677,429. (No model.)

To all whom it may concern:

Be it known that we, EDMUND S. WHITAKER and JOHN CHADWICK, of the city of Providence, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Cap-Spindles; and we hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

The invention has reference to an improvement in the class of spinning-spindles used on cap-spinning machines in which the spindle is stationary and the bobbin while rotating on the spindle is made to move longitudinally on the spindle.

The invention consists in the peculiar and novel construction and combination of the oiling device and the stationary spindle and bobbin-support, as will be more fully set forth hereinafter.

Figure 1 is a vertical sectional view of the bobbin-support, showing the same in connection with a dead-spindle. Fig. 2 is a transverse sectional view of the bobbin-support on the line A A of Fig. 1. Fig. 3 is a transverse sectional view of the bobbin-support on the line B B of Fig. 1. Fig. 4 is a perspective view of the dowel-ring. Fig. 5 is a side view of the oil-chamber. Fig. 6 is a top view, partly in section, of the oil-chamber. Fig. 7 is a transverse sectional view of the oil-chamber. Fig. 8 represents in perspective the bridge *a*, supporting the wick *b* and the clamp *c* in the oil-chamber, by which the oil is raised from the oil-chamber and is delivered to the spindle.

In the drawings, 8 indicates the stationary or dead spindle; 9, the reciprocating rail; 10, the oil-chamber; 11, the cover of the oil-chamber; 12, the whirl; 13, the tube extending through and above the whirl, over which the bobbin is placed; 14, a clamp-ring secured to the dovetailed dowels 14', extending above the top surface of the whirl. The clamp-ring 14 is provided with the dowels 14² 14², which enter the base of the bobbins in place of the usual dowels, so that when the dowels are worn a new ring may be clamped on the dovetailed dowels 14'. By inserting these into the recesses 14³ the spring of the open ring will secure the same firmly.

The internal diameter of the tube 13 is greater than the diameter of the dead-spindle 8, and a series of oil-chambers 15 15 are formed by securing within the tube 13 the bushings 16 and 16', one at the lower and one at the upper end of the whirl, and above the whirl the bushings 16² and 16³ are made of short sections of tube having frictional contact with the spindle and being secured to the inside of the tube 13. In the reciprocation of the tube the bushings act as wipers and prevent the accumulation of oil on the spindle, while the intermediate spaces 15 between the bushings act in reciprocating to distribute the oil on the spindle and insure its thorough lubrication. The oil-chamber 10 has the centrally-located and externally-threaded tube 17 extending upward to or slightly above the oil in the oil-chamber. The internally-screw-threaded annular ring 18 secures the packing-ring 19, made of cork, felt, or other similar material, to the end of the tube 17.

The bridge *a* in Fig. 8 consists of a sheet of metal having the flanges *a'* *a'*, the slits *a*² *a*², and the opening *a*³ for the spindle. The strip of wicking *b* has also the central hole *a*³. It is placed on the bridge *a*, and the ends are extended through the slits *a*² into the oil of the oil-chamber, as shown in Fig. 7, so that the oil is raised by capillary attraction and conveyed to the spindle. The clamp *c* consists in a sheet-metal ring and two strips of sheet metal on opposite sides of the ring. It is used to secure the wicking *b* to the bridge by bending the strip *c'* under the same. The washer 20 is placed between the lower end of the whirl 12 and the clamp *c*. The cover 11 has the two sectional flanges 11' 11', one of which is provided with a stop-pin which extends outward through an opening 21 in the side of the oil-chamber, through which the oil is supplied to the oil-chamber, and then the opening is closed by the partial rotation of the cover 11.

By this construction the tube forming the bobbin-support rotates freely on the dead-spindle. Each one of the bushings distributes the oil evenly on the spindle and carries any surplus oil upward and downward on the spindle, thereby insuring the thorough lubrication of all the bearings, while the oil in being

drawn upward from the oil-chamber is filtered by the wick.

Having thus described our invention, we claim as new and desire to secure by Letters
5 Patent—

1. In a lubricating device for cap-spinning machines, the combination with the oil-chamber 10, the cover 11, the central tube 17, the packing-ring 19, and the annular ring 18, of
10 the bridge *a* having the slits *a*² *a*² and the opening *a*³, the wick *b* the ends of which are passed through the slits in the bridge, and the clamp *c*, substantially as herein shown and described.

15 2. In a cap-spinning machine, the combination with the dead-spindle, the reciprocating

rail, and means for reciprocating the rail, of the chamber 10 provided with the opening 21, the cover 11 having the flanges 11' 11', the central tube 17, the packing-ring 19, the annular ring 18, the bridge *a*, the wick *b*, the clamp *c*, and the washer 20 interposed between the clamp *c* and the lower end of the whirl, as and for the purpose described.

In witness whereof we have hereunto set
our hands.

EDMUND S. WHITAKER.
JOHN CHADWICK.

Witnesses:

JOSEPH A. MILLER,
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