

No. 642,868.

J. R. MILSON.

Patented Feb. 6, 1900.

TOP ROLL FOR SPINNING MACHINES.

(Application filed Feb. 9, 1899.)

(No Model.)

Fig. 1.

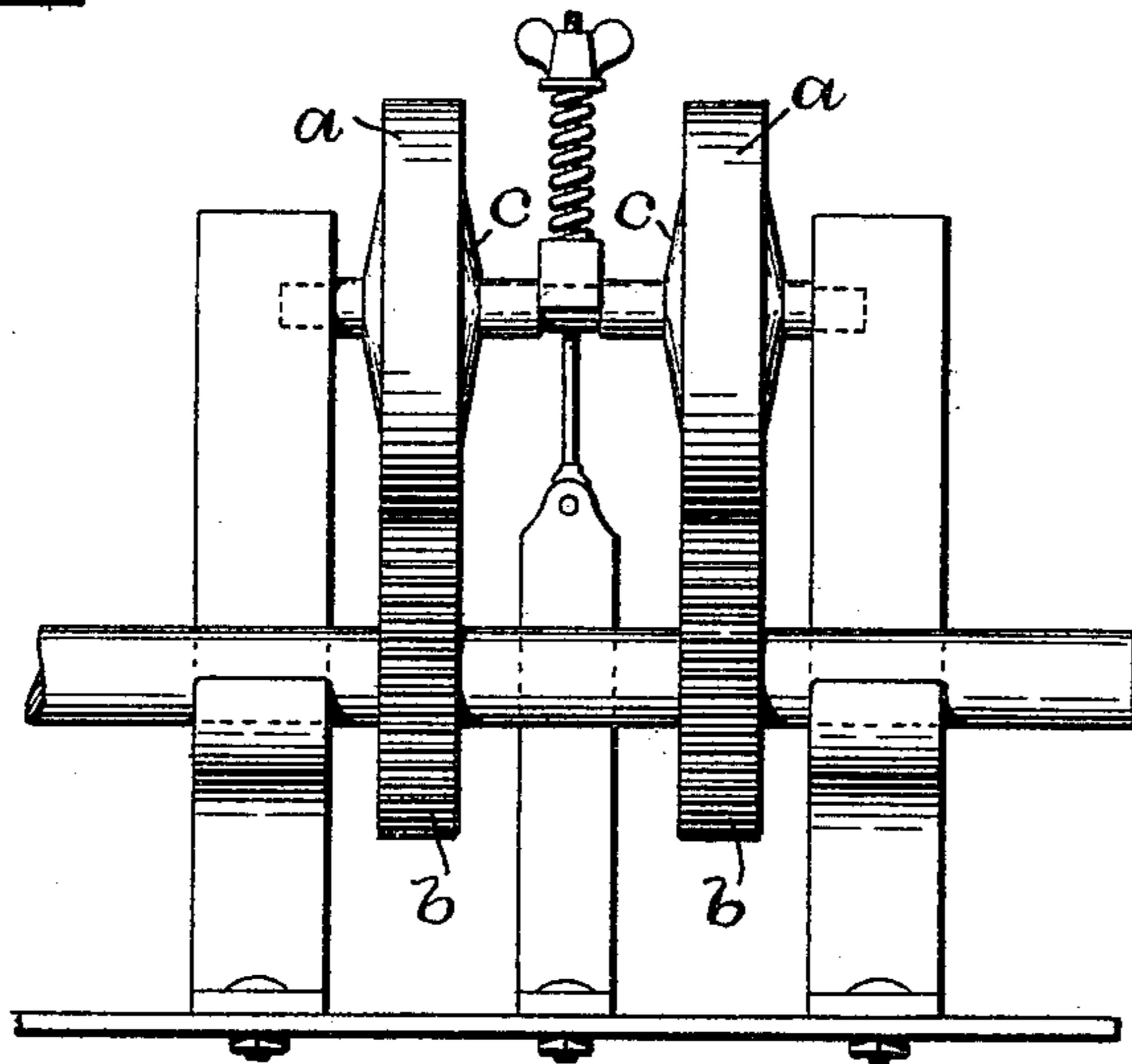


Fig. 2.

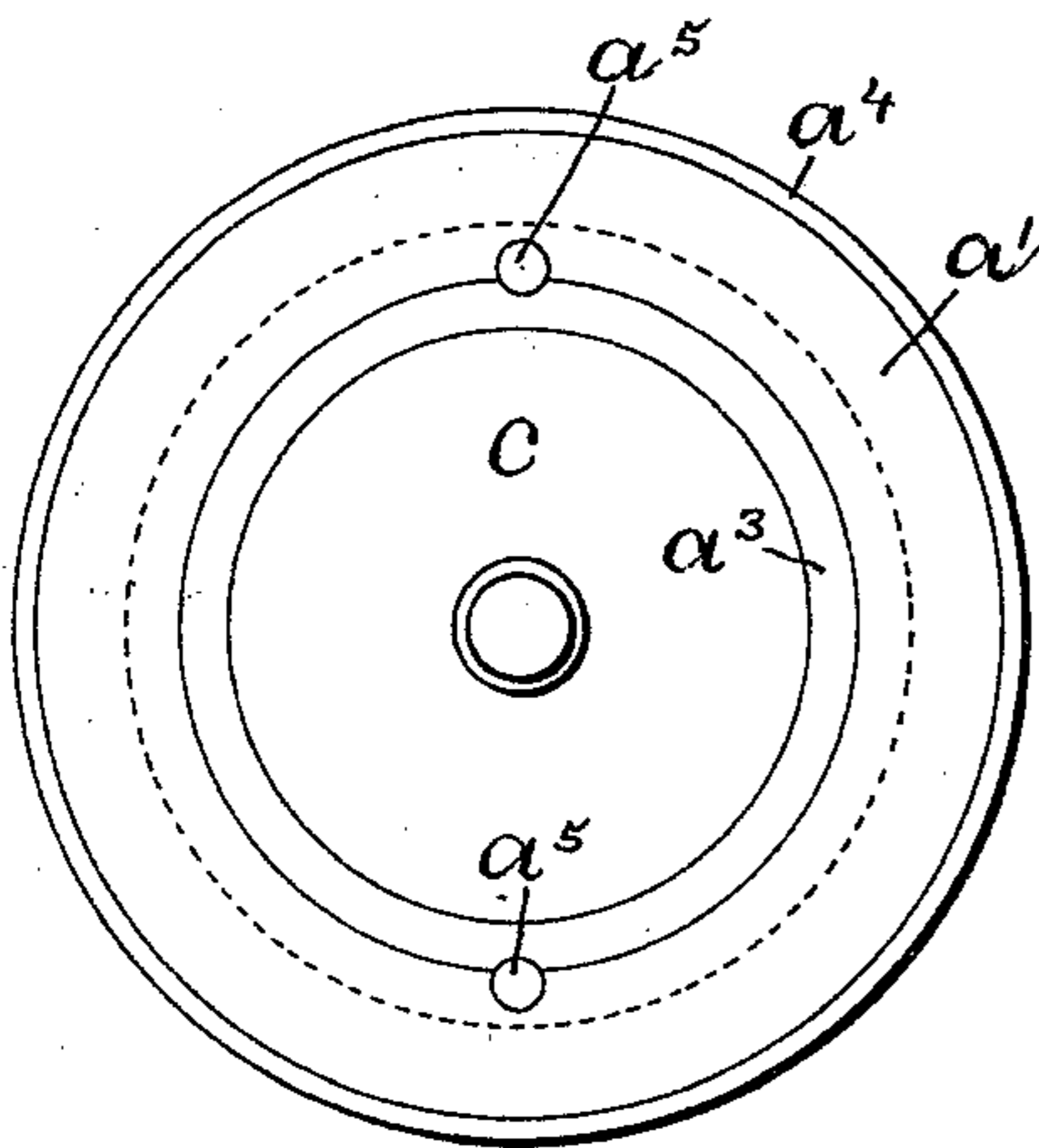


Fig. 3.

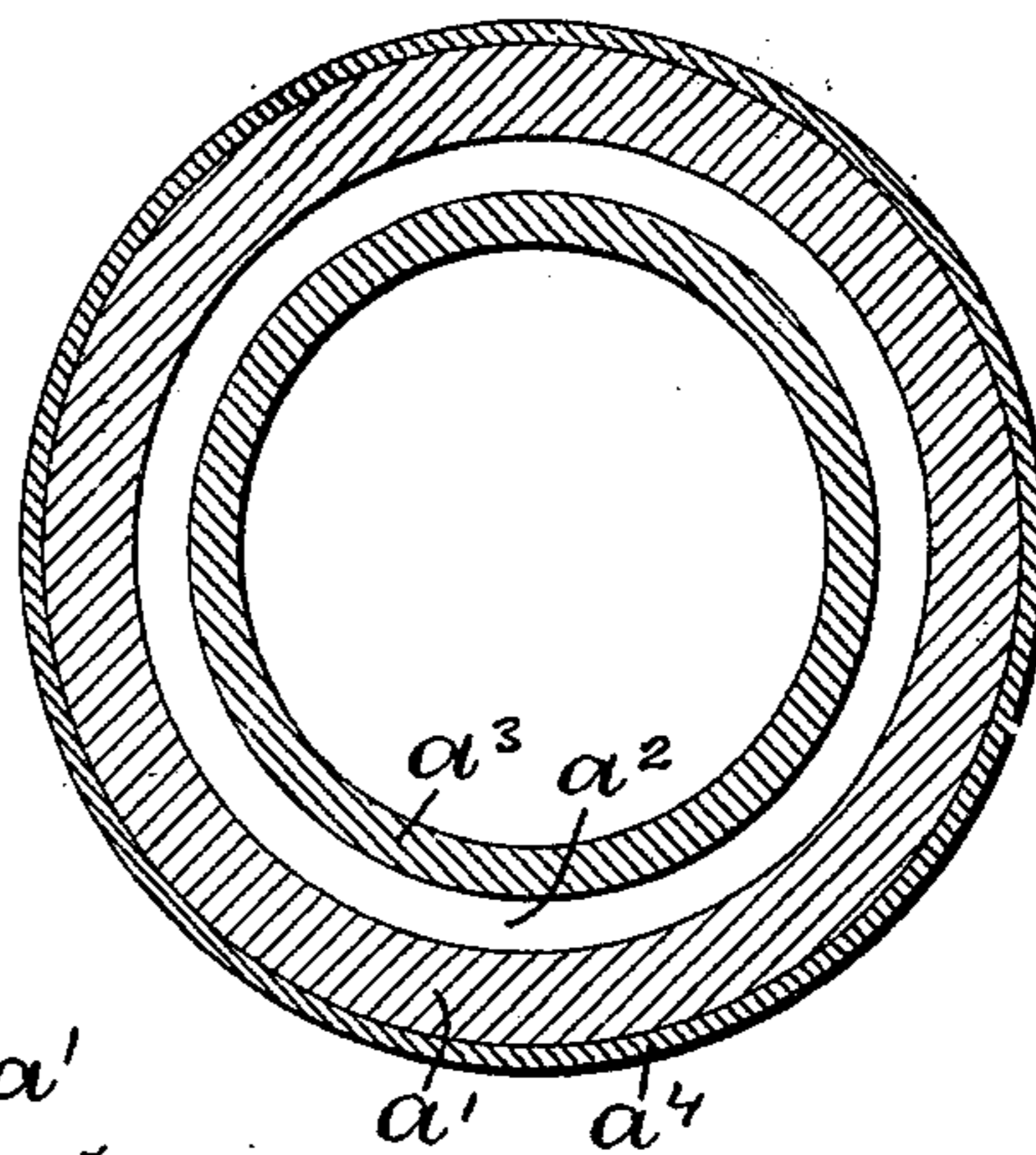
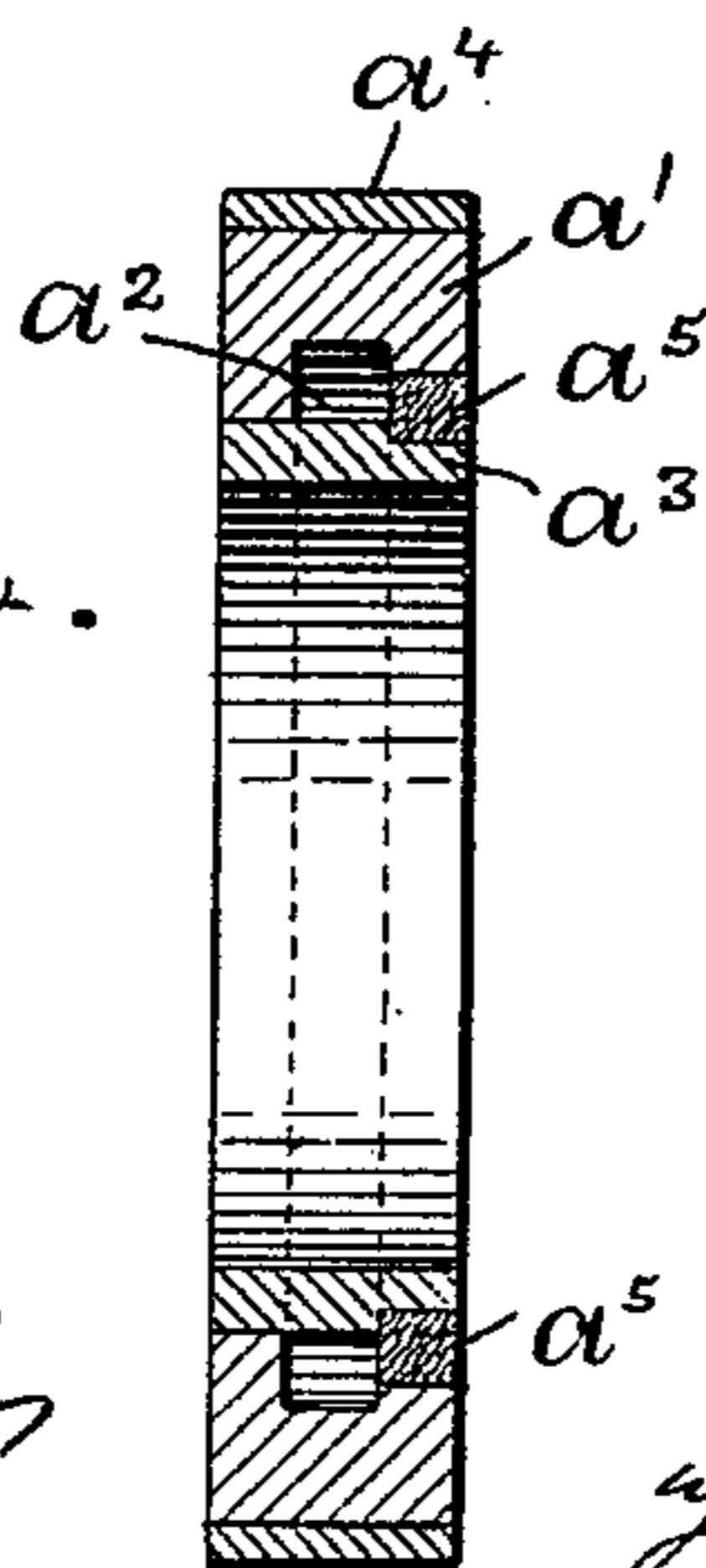


Fig. 4.



WITNESSES:

Chas. H. Luther Jr.  
O. M. Simms

INVENTOR:

John P. Milson  
Joseph A. Miller & Co.  
Atty.

# UNITED STATES PATENT OFFICE.

JOHN R. MILSON, OF BRISTOL, RHODE ISLAND.

## TOP ROLL FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 642,868, dated February 6, 1900.

Application filed February 9, 1899. Serial No. 705,106. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN R. MILSON, of Bristol, in the county of Bristol and State of Rhode Island, have invented a new and useful Improvement in Top Rolls for Spinning-Machines; and I 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.

This invention has reference to an improvement in the top rolls of spinning, drawing, and other machines in which a textile fiber is drawn out or controlled.

The invention consists in the peculiar and novel construction of the top roll whereby the peripheral surface of the roll presents a surface superior to the leather-covered roll and more durable, as will be more fully set forth hereinafter.

Figure 1 is a front view of a set of rolls consisting of two fluted rolls and two top rolls bearing on the fluted rolls. Fig. 2 is a side view of one of the top rolls. Fig. 3 is a vertical sectional view, and Fig. 4 a transverse sectional view, of one of the top rolls.

Top rolls for spinning and other textile machines are used to firmly hold the fiber in contact with the lower usually-fluted rolls, so that the sliver, formed of a number of fibers, may be drawn out and delivered at the speed at which the peripheral surfaces of the fluted rolls are driven.

Top rolls as heretofore used have their peripheral surface covered with a strip of leather specially selected to secure a firm hold on the fiber and to yield sufficiently to secure a firm hold on the fluted roll. Such a leather strip has to be jointed, and after use the same is liable to stretch and blister. The joints and the blisters affect the yarn and produce what is termed in the art "bad-roller yarn." The grain of a strip of leather is never uniform throughout. The covered roll soon wears in spots. The cover has, therefore, to be removed and replaced by a new one.

The object of this invention is to produce a top roll the peripheral surface of which presents the smooth velvety face required. It is more durable and presents the same condition of the surface at all points.

In the drawings, *a a* indicate the top rolls,

and *b b* the fluted rolls. The top rolls are held against the fluted rolls by spring-pressure, as shown in Fig. 1, or by means of weighted levers. The roll consists of a wooden ring made up in three parts, as will be more fully set forth hereinafter, and a central metal boss provided with bearings or adapted to be secured to a shaft.

The top roll consists of the ring *a'*, into the inner surface of which the groove *a<sup>2</sup>* is cut. The ring *a<sup>3</sup>* is secured within the ring *a'* and closes the open side of the groove *a<sup>2</sup>*. The inside of the ring *a<sup>3</sup>* is finished to closely fit the boss *c* with a driving fit. Over the peripheral face of the ring *a'* the ring *a<sup>4</sup>* is forced and secured by cementation. On one side holes *a<sup>5</sup>* are bored, communicating with the annular groove *a<sup>2</sup>*, and these holes *a<sup>5</sup>* are closed by suitable plugs. The rings *a'*, *a<sup>3</sup>*, and *a<sup>4</sup>* are cut from tubes turned and bored to the exact size required, in which the grain of the wood extends, preferably lengthwise, to the tube, the rings being separated by cutting across the grain of the wood. By this construction the grain of the wood on the peripheral surface of the roll extends transversely to the roll in line with the corrugations of the lower roll and presents a uniform condition of density. The so-constructed top roll is now thoroughly impregnated with wax by filling the annular groove *a<sup>2</sup>* with warm wax and subjecting the top roll to heat or in any other convenient manner. The groove *a<sup>2</sup>* is then filled with oil through the holes *a<sup>5</sup>*, which penetrates the wood and maintains the pliable and elastic condition of the same.

The extensive practical use of these top rolls has demonstrated that they secure better results than leather-covered pulleys and are more durable.

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

1. A top-roll cover consisting of a ring of permeable material and an inclosed annular chamber within the body of the permeable material there being an opening communicating with the chamber whereby oil may be supplied to the chamber; as described.

2. A top-roll cover consisting of wood impregnated with wax and an annular inclosed

chamber within the body of the wood there being an opening extending through the wood inclosing the chamber for filling the chamber with unctuous material, as described.

- 5 3. A top-roll cover composed of two or more concentric rings of wood, impregnated with wax or similar unctuous material, having an inclosed annular chamber formed in one of the rings; whereby unctuous material may be

supplied to the central portion of the wooden top-roll cover, as described.

In witness whereof I have hereunto set my hand.

JOHN R. MILSON.

Witnesses:

J. A. MILLER, Jr.,

B. M. SIMMS.