C. E. RILEY.

TOP ROLL FOR SPEEDERS OR SPINNING MACHINES.

APPLICATION FILED NOV. 30, 1906.

899,807. Patented Sept. 29, 1908.

Fig. 1.

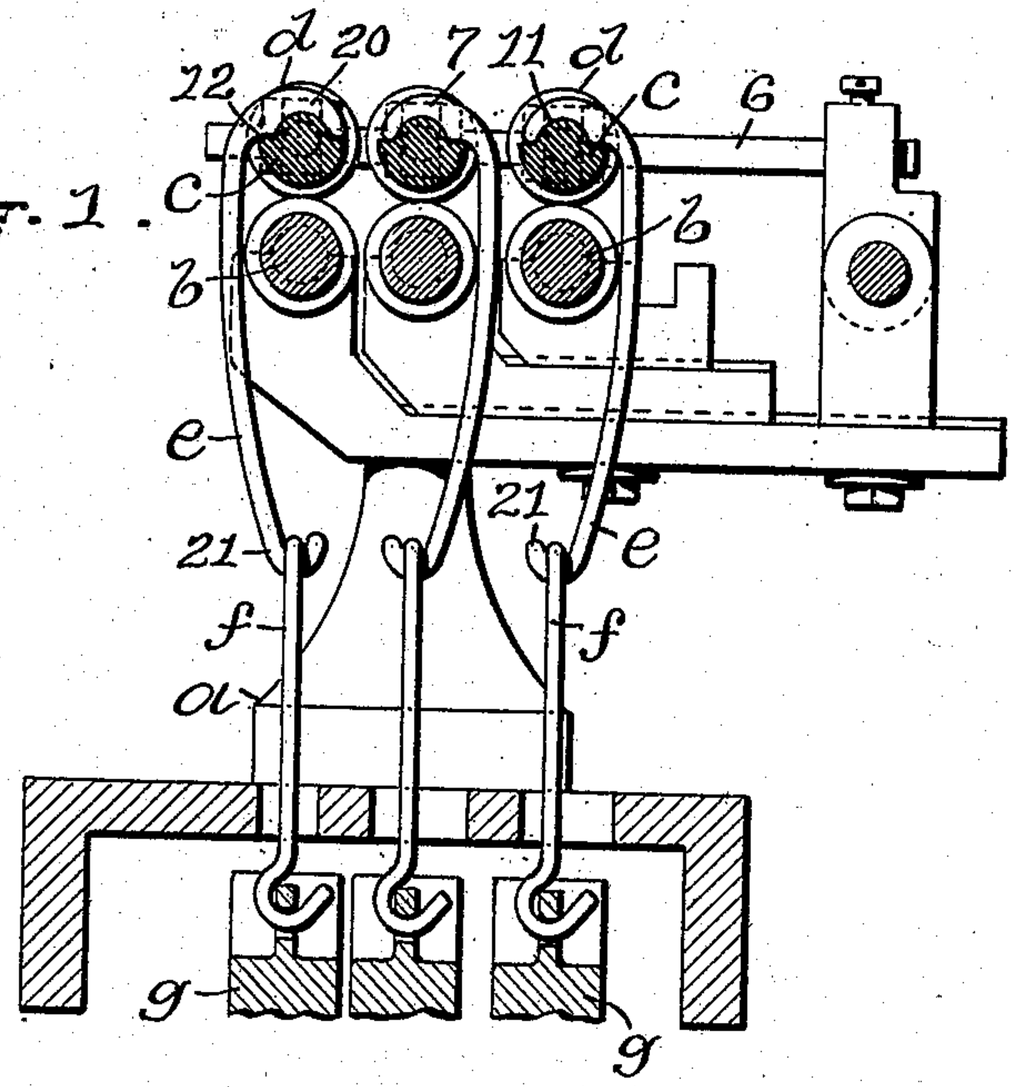


Fig. 2.

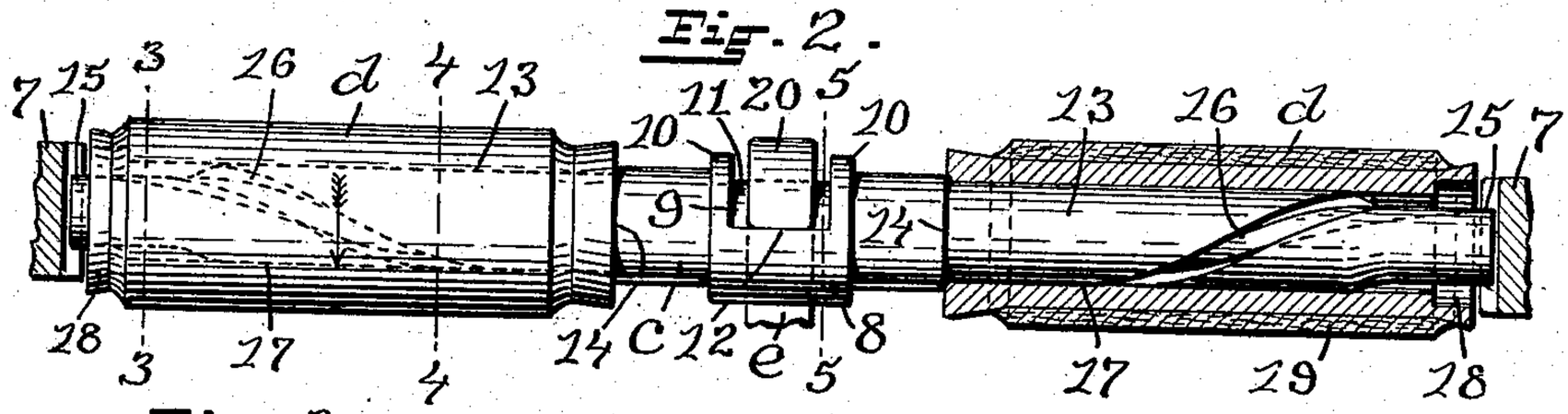


Fig. 3.

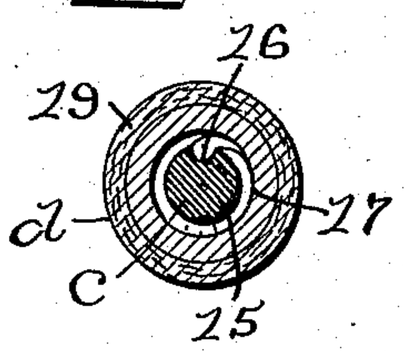


Fig. 4

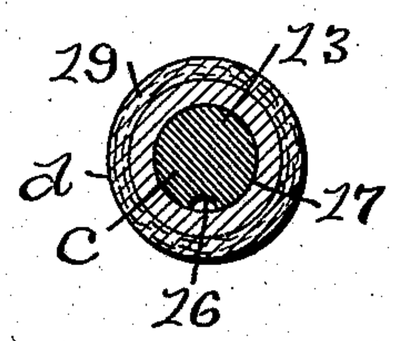
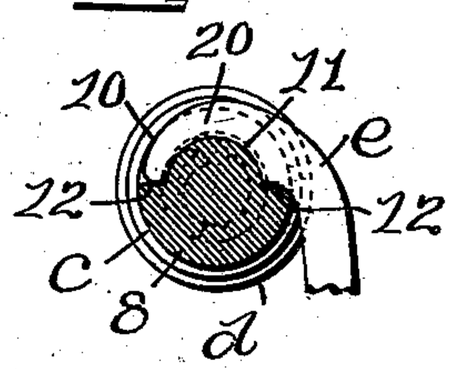


Fig. 5.



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UNITED STATES PATENT OFFICE.

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TOP ROLL FOR SPEEDERS OR SPINNING-MACHINES.

No. 899,807. Specification of Letters Patent. Patented Sept. 29, 1908.

Application filed November 30, 1906. Serial No. 345,802.

To all whom it may concern:

Be it known that I, CHARLES E. RILEY, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Top Rolls for Speeders or Spinning-Machines, of which the following is a specification.

This invention has reference to an improvement in spinning machines and more particularly to an improvement in top rolls for slubbing, intermediate, roving, jack frames and spinning frames, or similar spinning machines.

Top rolls for spinning machines, as ordinarily constructed, are formed integral with the arbor and revolve with the arbor, which is rotatably held at each end in the usual nebs on the cap bars. The weight hooks are also supported on the revolving arbor. In this construction there is considerable friction between the ends of the arbor and the nebs and between the arbor and the weight hooks, as neither the arbor, nebs nor weight hooks are constructed for lubrication and if oil is used to overcome friction at these points the oil will quickly run off or onto the rolls and ruin the yarn or roving.

The object of my invention is to improve the construction of top rolls for spinning machines by novel means, whereby the arbor is held stationary by the weight hook, and the top rolls or shells revolve on the arbor, and novel means are further provided for lubricating the top rolls or shells.

A further object of my invention is to construct a stationary arbor with revolving shells so that the stationary arbor and shells will replace the old revolving arbor and top rolls without in any way altering the roller stand, cap bars or nebs on the cap bars.

My invention consists in the peculiar and novel construction of top rolls for spinning machines and details of construction, as will be more fully set forth hereinafter and claimed.

Figure 1 is a vertical sectional view of a roller stand provided with my improved top rolls. Fig. 2 is an enlarged face view of a stationary arbor with revolving shells, showing the nebs and one of the shells in section. Fig. 3 is a transverse sectional view taken on line 3 3 of Fig. 2 through the arbor and shell and showing the position of the oil groove at the outer end of the arbor. Fig. 4 is a transverse sectional view through the arbor and shell taken on line 4 4 of Fig. 2 and showing the position of the inner end of the oil groove, and Fig. 5 is a transverse sectional view taken on line 5 5 of Fig. 2 through the arbor and showing the construction of the arbor and upper end of the weight hook for holding the arbor stationary.

In the drawings, *a* indicates a roller stand of a spinning machine, *b b* the drawing rolls, *c c* the stationary arbors, *d d* the shells, *e e* the weight hooks, *f f* the weight wires, and *g g* the weights.

The roller stand *a* is of the usual construction having roller slides with bearings for the drawing rolls *b b* and pivoted cap bars 6 6 having the usual nebs 7 7 for the ends of the arbor *c*, as shown in dotted lines in Fig. 1 and in section in Fig. 2.

The stationary arbors *c c* are each constructed in the form of a round bar having the round central boss 8 in which is a top cavity 9 having the semi-circular end walls 10 10 and the smaller convex semi-circular bottom 11 forming the oppositely-disposed stop shoulders 12 12 on the bottom edges of the cavity. The bar is now reduced in diameter from a point adjacent the boss 8 outward toward the ends to form the bearings 13 13 for the shells *d d* and the annular shoulders 14 14 and then again reduced in diameter to form the smaller ends 15 15 adapted to be held in the nebs 7 7 on the cap bars 6 6. A semi-spiral oil groove 16 is formed in the bearings 13 13 and extends from the top of the ends 15 15 to the bottom of the bearings 13 13 and slightly beyond the center of the bearings, as shown in Figs. 2, 3 and 4.

The shells *d d* are cylindrical in form, each having the central bore 17 adapted to have a rotatable fit on a bearing 13 and merging into an enlarged annular cavity 18 at the outer end and covered with leather 19 in the usual way. These shells *d d* extend the length of the bearings 13 13, as shown in Fig. 2.

The weight hooks *e e* each have the upper hook-shaped end 20 shaped to fit over the convex semi-circular bottom 11 and bear on the stop shoulders 12 12, as shown in Fig. 5, and the lower hook-shaped end 21. The upper end 20 of the weight hook is held from

longitudinal movement on the arbor *c* by the semi-circular end walls 10 10 on the arbor, as shown in Fig. 2. The weight hooks may be sufficiently long for the lower hook-shaped ends 21 21 to hook directly into the weights *g g*, or intermediate weight wires *f f* may be used for connecting the weight hooks *e e* with the weights *g g*, as shown in Fig. 1, and the weight hooks *e e* may be hooked onto the arbor from either side of the arbor, but are preferably hooked on from the back, as shown in Fig. 1.

In the operation of my improved top rolls the arbor *c* is held from rotation by the hook-shaped end 20 of the weight hook *e* engaging with the stop shoulders 12 12 on the arbor, and the shells *d d* revolved on the arbor *c* by the drawing rolls *b b*. The bearings 13 13 are lubricated by dropping oil into the outer end of the oil grooves 16 16, the revolving of the shells on the bearings carrying the oil down to the bottom of the bearings from which it is distributed over the bearings. This operation of oiling is greatly facilitated by the annular cavities 18 18 in the outer ends of the shells which allow of the easy insertion of the oiler between the nebs 7 7 and the ends of the shells.

It is evident that the ends 15 15 of the arbor *c* may be squared and shaped to fit in the nebs 7 7, or any other means may be used to hold the arbor stationary without materially affecting the spirit of my invention.

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

1. In top rolls for spinning machines, in combination, a non-rotatable arbor, supporting nebs therefor, a shell rotatably surrounding the arbor, said arbor being constructed with an enlarged boss having upstanding spaced side walls, a semi-cylindrical convex bearing face therebetween and shoulders between said walls at the ends of said bearing face, a depending weight hook having its upper end bent to conformably lie upon said bearing face and said shoulders and a weight suspended from the lower end of said hook.

2. In top rolls for spinning machines, in combination, an arbor, supporting nebs therefor, means for holding the arbor against rotation, said arbor having a reduced end portion affording a shoulder, said arbor also having a further reduced trunnion at the extremity of said end portion and engaged in one of the nebs, said reduced end portion being formed with a spiral groove extending throughout its length and through the length of said trunnion and a shell rotatably surrounding said reduced end portion and having its bore wholly in contact therewith, said shell having at its outer end an enlarged cavity alined with the bore and surrounding the trunnion, in spaced relation, said shell bearing against said shoulder.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. RILEY.

Witnesses:
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