

No. 724,954.

PATENTED APR. 7, 1903.

J. E. SCHMIDT.  
SPINNING APPARATUS WITH ROTATING HEAD.

APPLICATION FILED MAY 3, 1902.

NO MODEL.

Fig. 1.

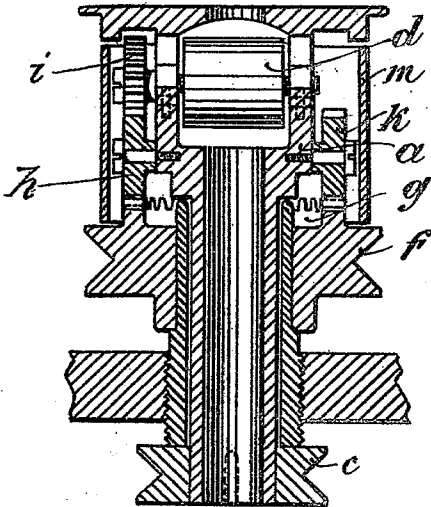


Fig. 2.

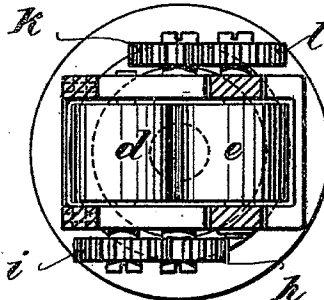


Fig. 3.

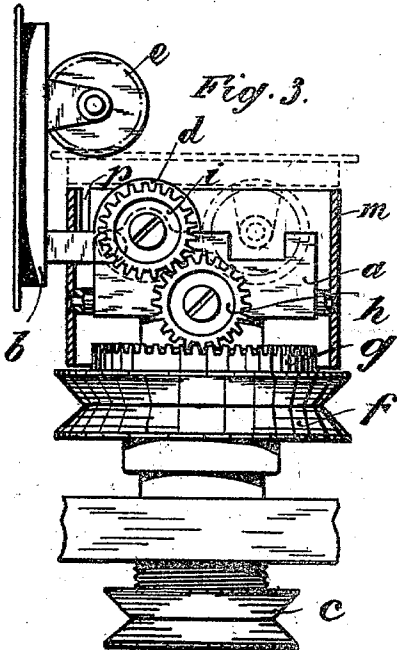
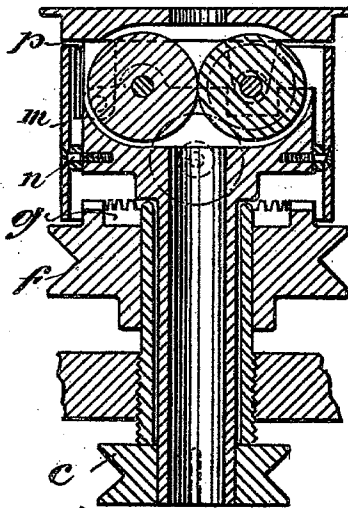


Fig. 4.



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# UNITED STATES PATENT OFFICE.

JULIUS EMIL SCHMIDT, OF SCHLOPPENHOF, AUSTRIA-HUNGARY.

## SPINNING APPARATUS WITH ROTATING HEAD.

SPECIFICATION forming part of Letters Patent No. 724,954, dated April 7, 1903.

Application filed May 3, 1902. Serial No. 105,804. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS EMIL SCHMIDT, manufacturer, a subject of the German Emperor, of Schloppenhof, b/Eger C 4, Bohemia, Austria-Hungary, have invented certain new and useful Improvements in Spinning Apparatus with Rotating Head; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

15 The herein-described invention relates to a spinning apparatus in which the drawing-rolls are journaled in the usual way in a rotating head in order to turn and draw the fibers regularly. In the ordinary devices for this purpose the rotation of the drawing-rolls about their own axes is effected by a gear-wheel, fast on one of the rolls, rolling upon a fixed worm. In order to vary the rotation speed, the gear-wheel must be changed or the pitch of the worm (usually consisting of an elastic metal band) must be altered.

In my invention the alteration of the rotation speed of the drawing-rolls is easily effected by suitable gearing—for instance, by gear-wheels on the aforesaid drawing-rolls, which wheels mesh directly or by an intermediate gear with a rotating toothed ring or crown-wheel. The rotation speed of the drawing-rolls about their own axes is therefore dependent upon the difference between the rotation speed of the head which bears the rolls and that of the crown-gear. The latter speed or both can be easily varied for the whole machine. In order to be able to bring the first twist or yarn easily between the two drawing-rolls, one of the latter is journaled in the hinged cover of the rotating head. This head has a case for the double purpose of protecting the operator from injury and of keeping the rolls and wheels free from fibers, oil, &c. In the accompanying drawings there is shown such an arrangement.

Figure 1 is a central vertical section between the drawing-rolls; Fig. 2, an end view with the upper part of the cover omitted; Fig. 3, a side elevation with the casing in sec-

tion, and Fig. 4 a vertical lengthwise section through the drawing-rolls.

In the rotating head *a*, which at its lower part has a grooved pulley *c*, the two drawing-rolls *d* and *e* are journaled, and the roll *e* is in this example journaled on the hinged cover *b* to facilitate bringing the first twist between the rolls.

On the head *a*, capable of rotating freely, is journaled the pulley *f*. The crown-gear *g* is fast with *f* or in one piece therewith. With the crown-gear *g* mesh the two gear-wheels *h* and *k*, which are on opposite sides of the head.

The intermediate gear-wheel *h* meshes with the wheel *i*, which is fast on the roll *d*, while the wheel *k* meshes with the gear *l* of the roll *e*. When the head rotates in the opposite direction to the crown-gear *g*, the wheels *h* *k* roll on the latter, so that the rolls *d* and *e* are positively driven in opposite directions to each other, but at the same speed. Variation of the speed of the pulley *f* alters that of the rolls *d* and *e*, (about their own axes.) The alteration of the speed of all the pulleys *f* on the machine can be effected by a simple change of one wheel, by which the relative velocity of the grooved pulleys *f* and *c* is altered, so that any incongruity between drawing and twisting speeds by reason of loose driving-cords, &c., is impossible.

Although I have shown the rolls *d* and *e* as positively driven by intermeshing gearing, it will be understood that other well-known means for rotating them may be substituted therefor.

To facilitate feeding the first twist between the drawing-rolls, the roll *e* of the example here given is journaled in the hinged cover, so that it can be lifted by the cover being raised from the other roll, *d*, as shown in Fig. 3.

On the head *a* there is attached, by the screws *n* or in other suitable manner, the annular casing *m*, Fig. 4, which extends from the cover *b* to the pulley *f*. This casing has incuts *p*, in which lie the arms that bear the cover when the latter is opened.

The rolls and the head-gearing are protected by this casing from fibers, oils, &c., and the casing also protects the operator from injury by the rapidly-rotating head. The casing has the further advantage that it effects a more equal distribution of weight

about the axis of the rotating head, and thus enables quieter running.

I claim as my invention—

- 5 1. A spinning apparatus comprising a rotating head, rotating drawing-rolls therefor and a cover for the rolls, one of said rolls being secured to said cover, substantially as and for the purpose described.
- 10 2. A spinning apparatus comprising a rotating head, drawing-rolls therefor, means to rotate the rolls and a hinged cover carrying one of the drawing-rolls, substantially as and for the purpose described.
- 15 3. A spinning apparatus comprising a rotating head, drawing-rolls therefor, a crown-piece on the head and means to drive it, independent means to drive the head, gears on

the drawing-rolls meshing with the crown-piece, and a hinged cover carrying one of the drawing-rolls, substantially as described. 20

4. A spinning apparatus comprising a rotating head, drawing-rolls therefor, mechanism carried by the head for rotating said rolls, an inclosing casing for the mechanism, and a cover therefor carrying one of the drawing-rolls, as and for the purpose described. 25

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JULIUS EMIL SCHMIDT.

Witnesses:

ADOLPH FISCHER,  
ARTHUR SCHURZ.