O. LATSCH.

HIGH SLIP DRAFT APPARATUS FOR SPINNING COTTON ROVINGS.

APPLICATION FILED FEB. 4, 1922.

1,421,965. Patented July 4, 1922.

FIG. 1.

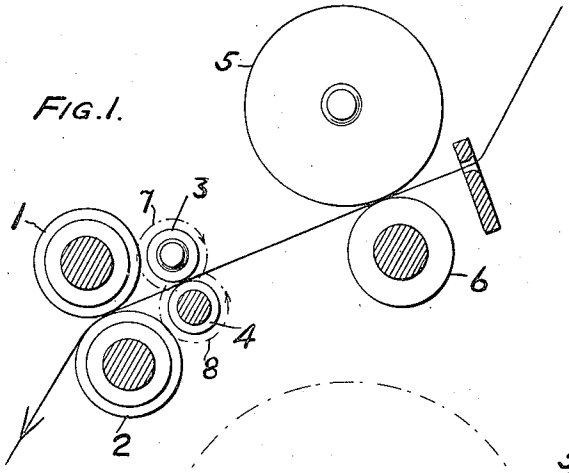
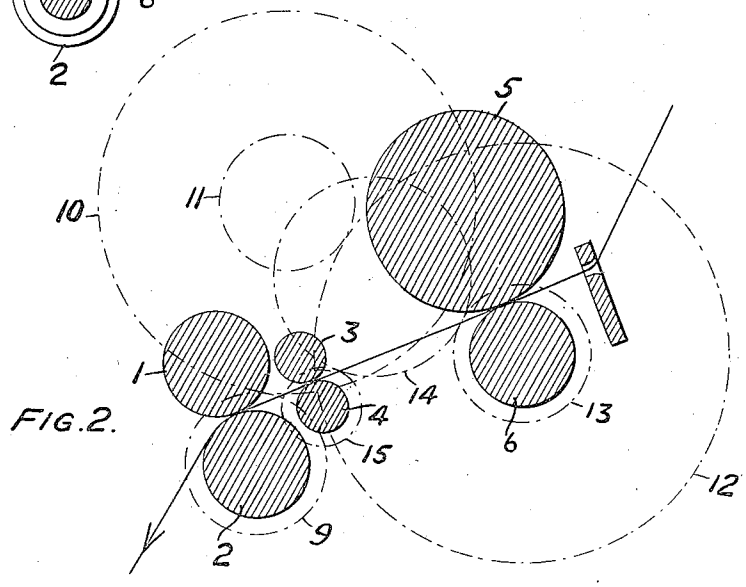


FIG. 2.



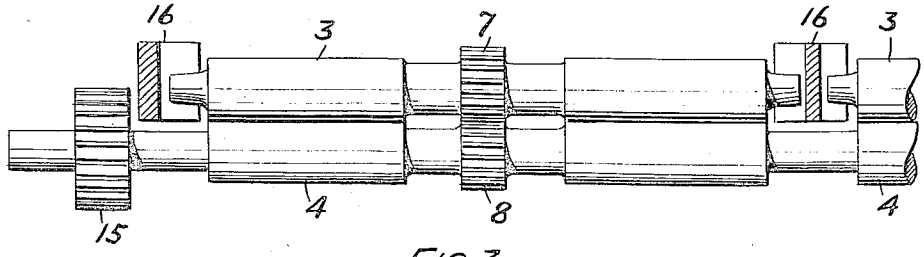


FIG. 3.

INVENTOR

Otto Latsch

BY

Augustus B. Stoughton

ATTORNEY.

WITNESS:

Robt. R. Fletcher.

UNITED STATES PATENT OFFICE.

OTTO LATSCH, OF OXFORD, ALABAMA, ASSIGNOR OF ONE-HALF TO GEORGE F. HOFFMAN, OF PHILADELPHIA, PENNSYLVANIA.

HIGH SLIP-DRAFT APPARATUS FOR SPINNING COTTON ROVINGS.

1,421,965. Specification of Letters Patent. Patented July 4, 1922.

Application filed February 4, 1922. Serial No. 534,018.

To all whom it may concern:

Be it known that I, OTTO LATSCH, a citizen of the United States, residing at Oxford, in the county of Calhoun and State of Alabama, have invented a new and useful Improvement in High Slip-Draft Apparatus for Spinning Cotton Rovings, of which the following is a specification.

High slip-draft apparatus for spinning cotton rovings includes smooth frictionally driven light weight top rolls set close up to the front rolls and therefore of small diameter, and if the roving be clean, even and soft twist the spinning operation is continuous and satisfactory, but if the roving or sliver is not absolutely even or contains impurities it will not go through the middle rolls but will stop and break in two.

The principal object of the present invention is to overcome this defect, difficulty or disadvantage and to spin any kind of roving, even roving made from very low grade waste and roving not absolutely clean and free from foreign matter, without interruption. According to my invention I accomplish this and other objects hereinafter set forth or apparent to those skilled in the art by compelling impurities or foreign matter in the sliver or roving not to stop at the middle rolls but to go through them, and this I do by positively driving the middle top rolls as will hereinafter more fully appear.

The invention further comprises the improvements to be presently described and finally claimed.

In the following description reference will be made to the accompanying drawings forming part hereof and in which—

Figure 1 is a diagrammatic sectional view illustrating features of the invention.

Fig. 2 is a similar view showing or intended to show the driving gear relation, and

Fig. 3 is an elevational view showing the middle top roll positively driven by gearing from the middle bottom roll.

In the drawings the front rolls 1 and 2 and the middle rolls 3 and 4 are on centers spaced from each other a distance equal to substantially the average length of the fiber of the roving or sliver. The middle rolls are smooth and of smaller diameter than the front rolls and the weight of the middle top roll is adjusted to permit such slippage as may be necessary to prevent rupture of the fiber. Those skilled in the art will understand what is meant when it is said that the middle top roll 3 is light and by varying its weight the number of the yarn or fineness of the yarn can be varied. 5 and 6 are back rolls and so far as the present invention is concerned they may be run at the same surface speed as the middle rolls but excellent results are obtained by running the back rolls 5 and 6 at a slower surface speed and when that is done there is tension but no substantial draft between the back and middle rolls, the weight of the top roll 3 and its smooth surface prevent there being any substantial draft because the top roll slips in respect to the roving while exerting some traction on it. The top middle roll 3 is positively driven and for that purpose intermeshing gears 7 and 8 are shown on the shafts of the top and bottom middle rolls. Referring to Fig. 2, the gear 9 on the bottom front roll is positively driven and it drives the idle gear 10 to which is fast the gear 11. The gear 11 drives the gear 12 which is fast to the rear bottom roll 6 and to a gear 13. The gear 13 drives the idle gear 14 which in turn drives the gear 15 fast on the shaft of the bottom middle rolls 4. The described gearing indicates or is intended to indicate that there is a difference in surface speed between the back and middle rolls sufficient to produce tension as has been said and that there is a very great difference in surface speed between the middle and front rolls to produce high draft. The top rolls 3 are afforded the usual rising and falling motion in the guides 16, and the teeth of the gears 7 and 8 are long enough to prevent their disengagement when the top roll rises.

In use if the roving or sliver presents an impurity to the middle rolls, the positively driven top middle roll will cause the impurity to pass between the rolls without stopping or injuring the roving so that rovings containing impurities and made from low grade cotton or waste can be successfully spun without interruption by reason of the described operation of the positively driven top middle roll. If the top middle

roll were not driven and by reason of its small diameter an impurity would stop the roving causing breakage and possibly lift the top roll, in which case the other roving would also be broken.

It will be obvious to those skilled in the art to which the invention relates that modifications may be made in details of construction and arrangement without departing from the spirit of the invention which is not limited as to those matters or otherwise than as the prior art and the appended claims may require.

I claim:

1. In high slip-draft apparatus for spinning cotton rovings the combination of a smooth top middle roll of weight and setting adjusted to permit slippage, means for positively driving said top middle roll, and a positively driven smooth bottom roll.

2. High slip-draft apparatus for spinning cotton rovings comprising in combination three pairs of drawing rolls of which the front and middle pair are on centers spaced a distance equal to substantially the average length of the fiber and the middle rolls being smooth and of smaller diameter than the front rolls and the weight of the top middle roll adjusted to permit of slippage of the roving, and means for driving both of the middle rolls to prevent stoppage due to impurities in the roving.

3. High slip-draft apparatus for spinning cotton rovings comprising in combination three pairs of drawing rolls of which the front and middle pair are on centers spaced a distance equal to substantially the average length of the fiber and the middle rolls being smooth and of smaller diameter than the front rolls and the weight of the top middle roll adjusted to permit of slippage of the roving, and intermeshing gears between the positively driven bottom middle roll and the top middle roll for driving the latter.

4. High slip-draft apparatus for spinning cotton rovings comprising in combination three pairs of drawing rolls of which the front and middle pair are on centers spaced a distance equal to substantially the average length of the fiber and the middle rolls being smooth and of smaller diameter than the front rolls and the weight of the top middle roll adjusted to permit of slippage of the roving, and means for driving both the top and bottom middle rolls at higher surface speed than the back rolls to put tension on the roving and prevent stoppage due to impurities.

OTTO LATSCH.