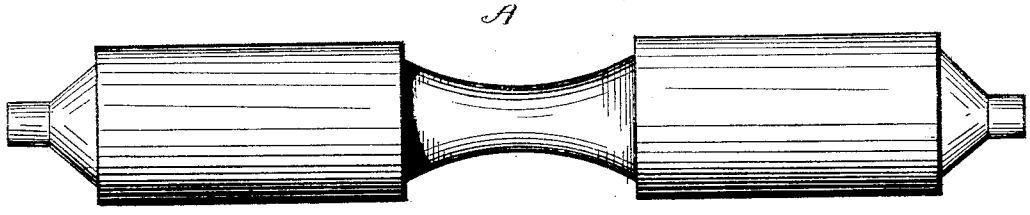
J. M. SMITH.

Composition-Roller for Drawing-Frames, &c.

No. 217,557. Patented July 15, 1879.



WITNESSES
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UNITED STATES PATENT OFFICE.

JOSEPH M. SMITH, OF MILFORD, NEW HAMPSHIRE.

IMPROVEMENT IN COMPOSITION ROLLERS FOR DRAWING-FRAMES, &c.

Specification forming part of Letters Patent No. **217,557**, dated July 15, 1879; application filed February 13, 1879.

To all whom it may concern:

Be it known that I, JOSEPH M. SMITH, of Milford, in the county of Hillsborough and State of New Hampshire, have invented a new and valuable Improvement in Composition Rollers for Drawing-Frames, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The drawing is a representation of a side elevation of one of a variety of forms of rollers to which my invention is applicable.

This invention has relation more particularly to that class of rollers employed in machines in which the slivers of cotton or other wool from the carding-machine are attenuated by passing through consecutive pairs of rollers.

The invention is also applicable to all classes of machines where rollers of like character may be found useful, such as drawing-frames, speeders, stretchers, mules, or wherever slivers or ends are to be drawn or distended.

Previous to my invention it was found difficult to construct a roller of the above character that would, when employed with the ordinary roll for drawing the cotton, prevent the electricity generated by the friction of the rolls from drawing the fibers of the cotton around the composition roll.

It is therefore the object or purpose of the present invention to remove the aforesaid difficulties, and produce a roller that will, when revolving in contact with the ordinary drawing-roll, generate electricity of the same kind in both rolls, which will cause the sliver passing between the rolls to be similarly electrified; and as like kinds of electricity repel each other, and both the rolls and sliver are similarly electrified, the fibers of the sliver will be repelled from the rolls, and thereby prevented from adhering to the surface of the roll and destroying the sticky substance in the gum, as well as preventing the effects of oil thereon, as will be hereinafter described, and subsequently pointed out in the claim.

In the accompanying drawing, A represents one of the many forms of rollers to which my invention may be applied, as I wish it understood that I do not confine myself to any particular form or size of roller, as it may be variously modified to suit the purpose for which it is to be used.

The composition or ingredients used in constructing a roller in conformity with my invention are as follows: twenty-five parts of fine rubber, twenty parts of gutta-percha, ten parts of calcined magnesia, thirty-five parts of lamp-black, five parts of shellac, and five parts of sulphur.

The above ingredients are united by grinding in the ordinary manner. After the ingredients are thoroughly ground and mixed, the composition is formed into sheets of suitable thickness. The sheet thus formed is cut into strips of the required width to surround the cotton tube upon a mandrel, the edges being chamfered, so as to form a perfect joint. Over this composition sheet or strip are tightly wound several thicknesses of cotton cloth to hold the tube in shape while it is being vulcanized, and after this process has been performed the cotton covering is removed, and a perfect tube remains. The tube is then cut into short sections, which are secured to the drawing-roller by any suitable cement.

The above method of forming the composition into tubes I consider best adapted to the purpose, although other means may be employed without departing from the spirit of my invention, and I desire it further understood that the proportions herein named may be modified, as I do not desire to confine myself to the precise quantity of the ingredients hereinbefore named.

The shellac and magnesia will effectually destroy the sticky substance in the rubber, and the gutta-percha will resist the oil.

I am aware that a roll composed of vulcanized rubber on its outer surface, with a semi-elastic core or inside made of india-rubber, rubber rags, sulphur, oxide of zinc, magnesia, and lamp-black, has heretofore been constructed; and I am also aware that a covering for rolls for drawing cotton has heretofore been made of india-rubber, magnesia, sulphur, and black-lead; and I am further aware that tub-

ing made of gum-mudar, india-rubber, and gutta-percha has heretofore been employed, and I therefore lay no claim to such inventions, which differ from mine in this, that I employ gutta-percha in combination with shellac and different ingredients from those employed by them.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The composition for covering drawing-rolls herein described, consisting of rubber, gutta-percha, magnesia, lamp-black, shellac, and sulphur, in about the proportions named, and for the purposes specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSEPH M. SMITH.

Witnesses:

SARAH L. SAWYER,

F. T. SAWYER.