No. 767,026. PATENTED AUG. 9, 1904.

E. L. WHITE.

PARAFFINING APPARATUS.

APPLICATION FILED AUG. 8, 1903.

NO MODEL.

Fig. 1.

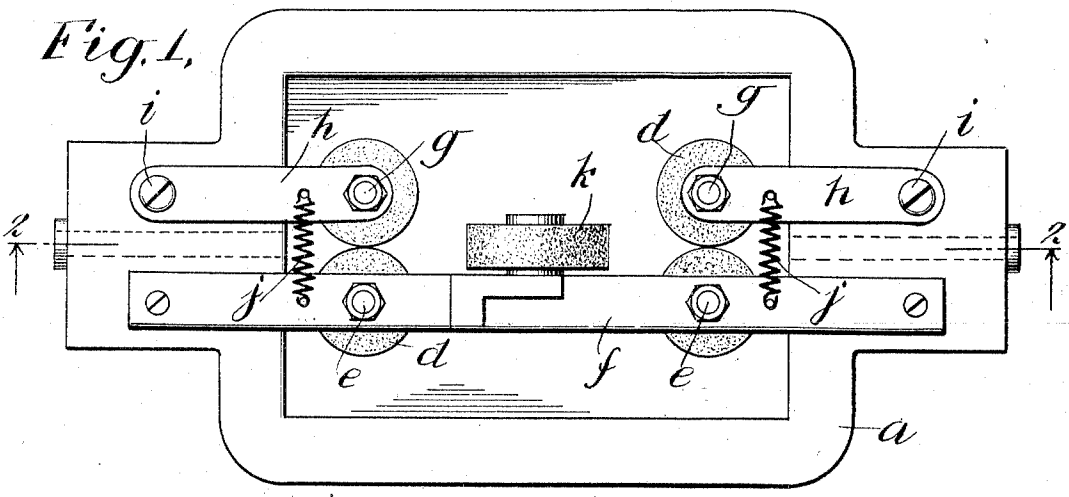


Fig. 2.

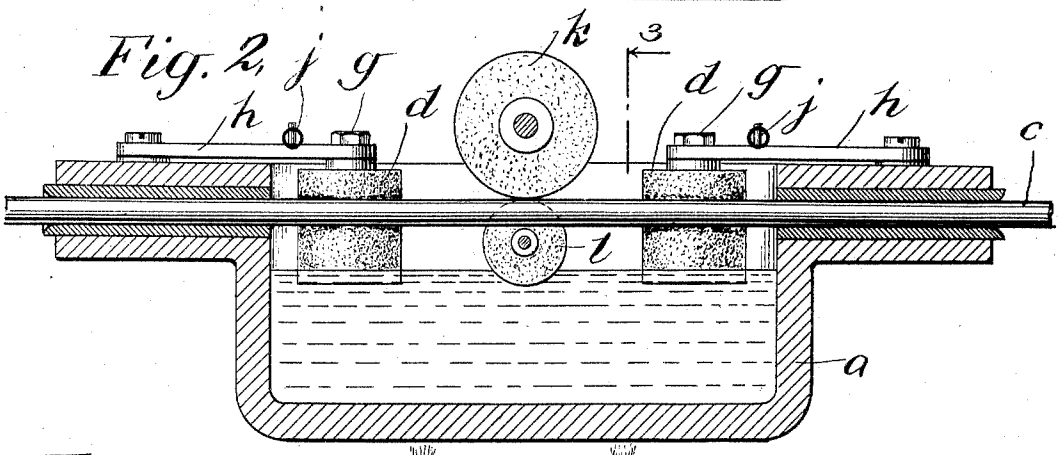


Fig. 3.

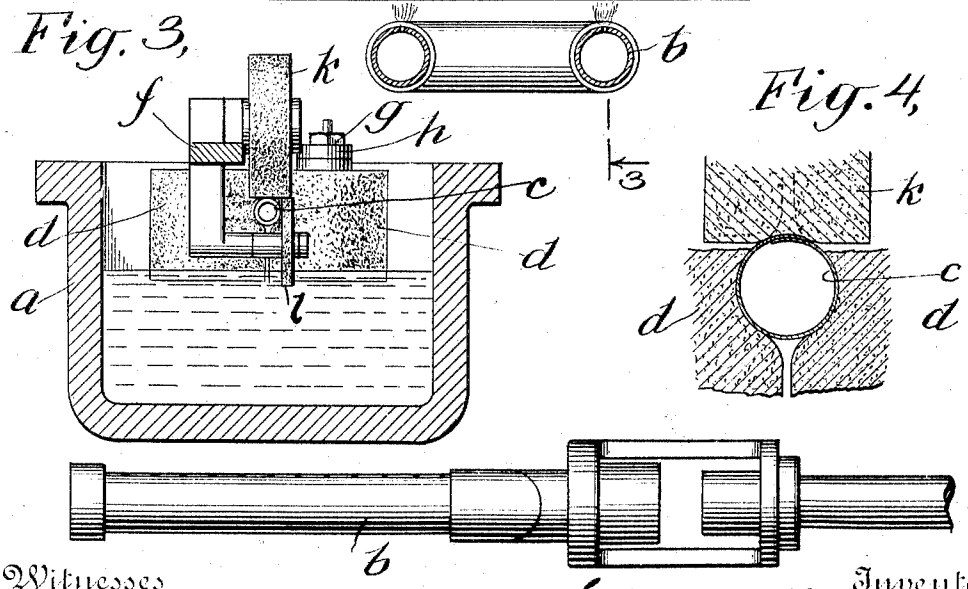


Fig. 4.

Witnesses

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No. 767,026. Patented August 9, 1904.

UNITED STATES PATENT OFFICE.

EDWARD L. WHITE, OF ENGLEWOOD, NEW JERSEY.

PARAFFINING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 767,026, dated August 9, 1904.

Application filed August 8, 1903. Serial No. 168,720. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. WHITE, a citizen of the United States of America, residing at Englewood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Paraffining Apparatus, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in paraffining apparatus, and particularly in apparatus arranged for supplying paraffin to paper tubes in the manufacture of artificial straws.

In the manufacture of artificial straws by forming a continuous tube and cutting same off into lengths the size of the finished straw it is impracticable to attempt to dip the tube or to pass same through the paraffin in a bath thereof. I have therefore designed the apparatus herein with a view to passing the tube over the bath of paraffin and supplying a predetermined quantity thereto by feeding-rollers partially immersed in the liquid paraffin and engaging the said tube. I have further provided means for supplying an additional quantity of paraffin to the tube at the joint, this being desirable for the purpose of stiffening the tube at this point and rendering the joint entirely waterproof.

To these ends my invention consists in certain novel details of construction and combination of parts, as fully described and illustrated herein.

I will now proceed to describe a paraffining apparatus embodying my invention and will then point out the novel features in claims.

In the drawings, Figure 1 is a top view of a paraffining apparatus embodying my invention. Fig. 2 is a view in central vertical longitudinal section of same. Fig. 3 is a view in transverse vertical section, the plane of section being taken substantially upon the line 3 3 of Fig. 2. Fig. 4 is a diagrammatic view, on an enlarged scale, showing the paper tube, and particularly the joint therein and the relation of the feed-wheels thereto.

Referring to the embodiment of my invention illustrated in the drawings and to the parts therein by their designating reference characters, *a* represents a tank arranged to contain paraffin which is kept in a liquid condition by a heater or burner *b*. The paper tube *c* is arranged to pass through the said tank above the normal level of the paraffin, and feeding devices are arranged to convey the paraffin from the tank to the said tube. These feeding devices comprise a plurality of rollers *d*, two of which are mounted to rotate about vertical studs *e*, rigidly secured to a bearing-strip *f*, and two of which are mounted to rotate about vertical studs *g*, secured to the ends of arms *h*, pivoted at *i* to the said tank. The rollers carried by the arms *h* are pressed toward those carried by the strip *f* by means of coil-springs *j* with a yielding pressure. The faces of the rollers *d* are composed of an absorbent material, and their lower ends are constantly immersed in the liquid paraffin in the said tank *a*. Capillary attraction causes the paraffin to saturate the rollers from one end to the other, and the tube *c* is arranged to pass between the said rollers, and thereby receives a coating of paraffin therefrom. This arrangement of feeding-wheels for the tube *c* has the effect of supplying the tube with a substantially uniform coat of paraffin throughout. It is found desirable, however, to supply a larger quantity of paraffin to one portion of the tube than to the other, such portion being at the lapped joint or seam of the tube, and for this purpose I have provided supplementary feed-wheels *k*, arranged in contact with the tube at the jointed portion thereof. (See particularly Fig. 4.) I have provided a small supply-wheel *l*, partially immersed at its lower side in the paraffin and in contact at its upper side with the lower side of the wheel *k*. Movement of the tube *c* causes rotation of the wheels *d* and of the wheel *k*, the wheel *k* transmitting its movement to the supply-wheel *l*. The supply-wheel *l* will thus continuously supply paraffin to the wheels *k*, causing the same to become saturated throughout by capillary attraction, and thus transmitting the desired quantity of paraffin to that part of the tube engaged by the said wheel *k*. The wheels *k* and *l* are journaled in bearings carried by the strip *f*, and so far I have not found it necessary to

supply spring tension thereto. I may, of course, supply such spring tension, if desired, within the spirit and scope of my invention in a similar manner to that supplied to the feed-wheels *d*.

While for simplicity I have described my present invention as adapted for the purpose of applying paraffin, it is of course to be understood that it may be employed for applying other material and that the apparatus is in no sense limited to the application of paraffin alone.

What I claim is—

1. In a paraffining apparatus, the combination with a paraffining-tank, of a plurality of feed-wheels each rotatable about a vertical axis and having their lower ends immersed in the paraffin in said tank, the faces of said wheels being composed of an absorbent material.

2. In a paraffining apparatus, the combination with a paraffining-tank, of a plurality of feed-wheels each rotatable about a vertical axis and having their lower ends immersed in the paraffin in said tank, the faces of said wheels being composed of an absorbent material, said wheels being spring-pressed toward each other.

3. In a paraffining apparatus, the combination with a paraffining-tank, of a plurality of feed-wheels each rotatable about a vertical axis and having their lower ends immersed in the paraffin in said tank, the faces of said wheels being composed of an absorbent material, and a supplementary feed-wheel rotating about an axis transverse of the axis of the first said feed-wheel.

4. In a paraffining apparatus, the combination with a paraffining-tank, of a plurality of feed-wheels each rotatable about a vertical axis and having their lower ends immersed in the paraffin in said tank, the faces of said wheels being composed of an absorbent material, a supplementary feed-wheel rotating about an axis transverse of the axis of the first said feed-wheel, and a supply-wheel for the said supplementary feed-wheel.

5. In a paraffining apparatus, the combination with a tank *a*, through which a tube is adapted to be fed, and adapted to contain liquid paraffin, of feed-wheels *d* each mounted to rotate about a vertical axis, and arranged to be partially immersed in the said liquid, a supplementary feed-wheel *k* mounted to rotate about a horizontal axis, and arranged above the point at which the tube is adapted to pass through the said tank, and a supply-wheel *l* arranged to be partially immersed in the paraffin and to be in contact with the said supplementary feed-wheel, the faces of all the said wheels being composed of absorbent material.

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Witnesses:
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