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GODET

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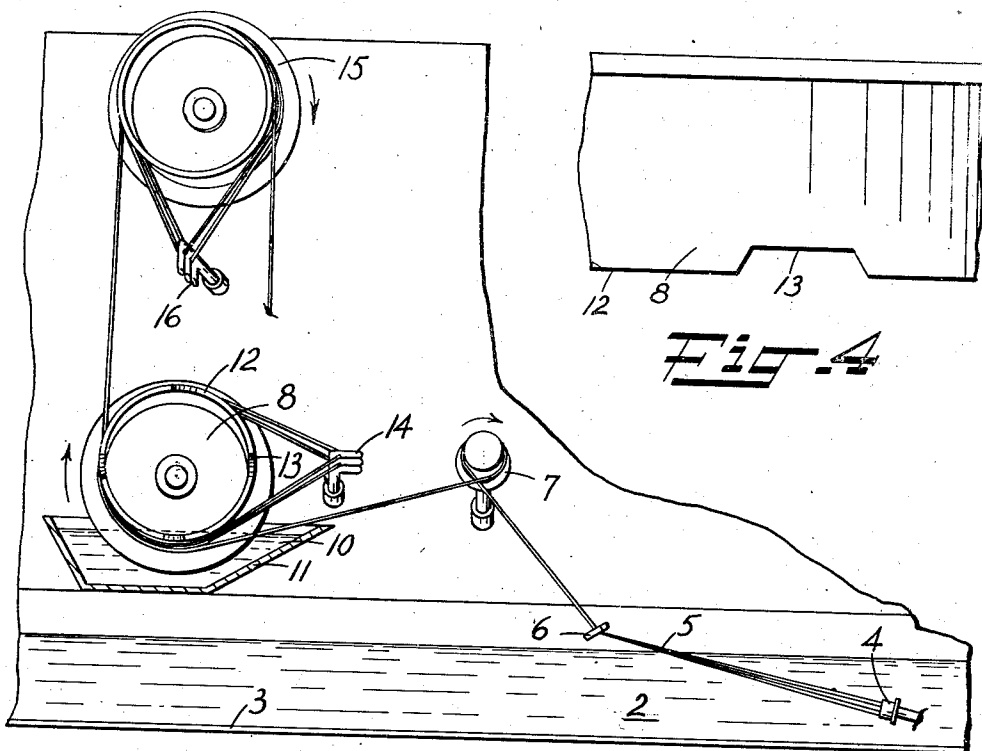
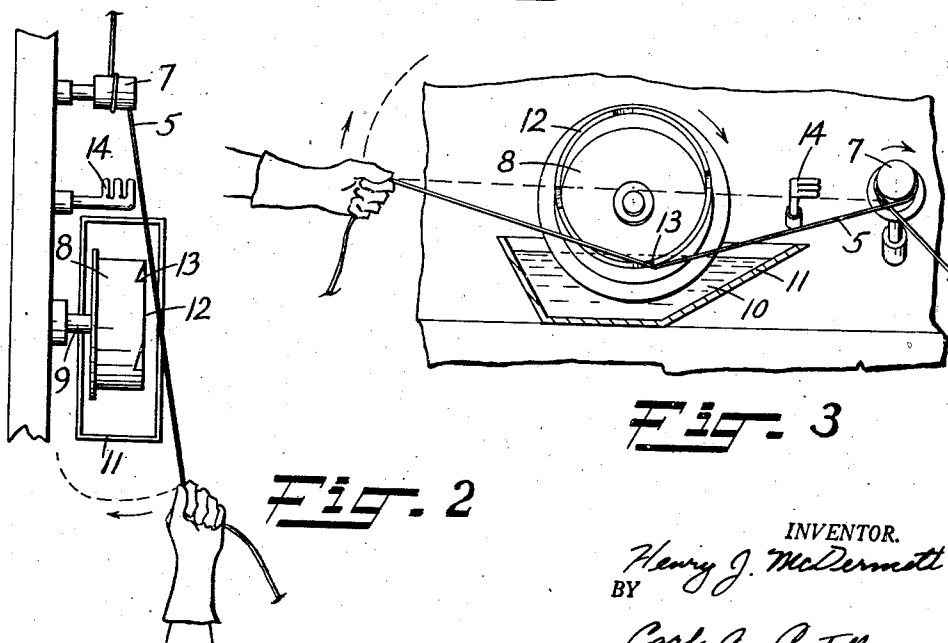


Fig. 1



Fif. 3

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GODET

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7 Claims. (Cl. 18-8)

This invention relates to apparatus for handling filamentary material. More particularly, the invention relates to apparatus for applying liquid to artificial filamentary material.

In the manufacture of artificial filamentary material in accordance with the viscose process, for example, where the spinning solution is extruded into a suitable coagulating medium, it is conventional practice to withdraw the thread from the bath and pass it around a pair of spaced apart rotating godets the first of which is partially immersed in a treating liquid. For obvious reasons of economy and space-saving it is preferred that the vessel containing the treating bath be as narrow as possible. However, when such narrow treating baths are utilized in conjunction with heretofore known godets, it is extremely difficult for the operator to lace-up the godet by hand alone, and this difficulty is greatly aggravated in those cases where the treating liquid is maintained at a high temperature, or is such that it has a corrosive action, since it is impossible for the operator to put his hand in the bath without suffering untoward effect.

The aforesaid difficulties are all avoided by the present invention which provides a novel godet, one face of which is open, and which has at least one notch in the peripheral rim about the open face.

In the drawing:

Figure 1 illustrates, diagrammatically, an arrangement including a godet according to the invention;

Figure 2 is a plan view of part of Figure 1 showing the lacing-up operation;

Figure 3 is another view of the lacing-up operation; and

Figure 4 is a plan view of a further embodiment of the invention.

Referring to the drawing, the layout of Figure 1 comprises a setting bath 2 contained in tank 3 into which the spinning solution is extruded through submerged jet 4. The thread 5 thus formed is led upwardly under a thread guide 6 and around roller 7, which is rotating in the direction of the arrow. Godet 8 supported on spindle 9 which is driven by suitable means (not shown) is mounted so that its open face is adjacent the spinning bath, and is partially immersed in a treating liquid 10 contained in vessel 11. The bath may be hot water, dilute acid, or any other appropriate treating liquid. In lacing-up, as shown more clearly in Figure 2, the leading end of thread 2 is drawn across the open face of godet 8 and held in contact with the peripheral

rim 12 thereof. As shown in Figure 3, the thread is caught in a notch 13 in the rim which carries it downwardly and then onto the periphery of the godet. A guide 14 is disposed adjacent the periphery of the godet and displaces the next lap laterally thereof. After such lapping, the thread may proceed directly to godet 15 or it may be wrapped once more about the guide 14 preparatory to displacement of an additional lap about godet 8. Any number of laps upon the godet may be used, the guide 14 insuring that the thread is laterally displaced on the periphery of the godet in such a manner that a non-slipping engagement between the thread and godet is obtained and to prevent the thread from riding upon itself on the periphery of the godet. A guide 16 is disposed adjacent godet 15, about which thread 5 is wrapped, after passing around godet 15 once, and before being lapped about godet 15 one or more additional times. From godet 15 the thread is passed to a suitable collecting device (not shown).

If desired godet 15 may be rotated at a higher peripheral speed than godet 8, so that the thread passing therebetween is stretched to any desired or permissible extent.

The godet of my invention has the advantages that it may be laced-up by hand alone in a facile manner and with a minimum expenditure of time and effort regardless of the conditions under which it is employed. It is particularly valuable for use in connection with liquid treating baths contained in narrow vessels, especially when the liquid is such that it is dangerous for the operator to permit his hands to come in contact with it. Once the godet has been laced up the thread passes uninterruptedly thereabout and the notches in the peripheral rim surrounding the open face thereof do not interfere with free, smooth and continuous travel of the thread from the setting bath to the periphery of the godet.

The notches 13 which are spaced about peripheral rim 12 of godet 8 may be so disposed therein that they comprise at least one surface which inclines steeply from the rim and opposes the direction of travel of the filamentary material when the godet is rotated in the direction indicated by the arrow, in the drawing, or the notches may be disposed in the rim so that they comprise at least one surface which inclines steeply from the rim and opposes the direction of travel of the material when the godet is rotated in a direction reverse to that shown in Figures 1 to 3, inclusive. Alternatively, as shown in Figure 4 the notch 13 may be bi-directional

and may comprise two surfaces which incline steeply from the rim 12 and one of which opposes the direction of travel of the material regardless of the direction of rotation of godet 8 so that the same godet may be rotated in either a clockwise or counterclockwise direction and effectively laced up in either case.

The godet may be formed of any suitable material such as glass, hard rubber, pyroxylin, Bakelite, etc. The periphery of the godet may be smooth or corrugated, and the notches which are provided in the peripheral rim surrounding the open face thereof in accordance with the invention may be cut or molded therein.

The above description is intended to be illustrative only and it is to be understood that changes and variations may be made without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. A rotatable godet for use in handling filamentary material, said godet having a supporting means, an open face away from the supporting means, and at least one notch in the peripheral rim surrounding the open face, the rim being free of projections.

2. A rotatable godet for use in handling filamentary material, said godet having a supporting shaft, an open face away from the shaft and at least one notch in the peripheral rim surrounding the open face comprising at least one surface which inclines steeply from said rim, the rim being free of projections.

3. A rotatable godet for use in handling filamentary material, said godet having a supporting shaft, an open face away from the shaft, and a plurality of spaced notches in the peripheral rim surrounding the open face each comprising at least one surface which inclines steeply from said rim, the rim being free of projections.

4. Means for applying liquid to filamentary material comprising a container for the liquid, a godet partially immersed in the liquid, said godet having a supporting means, an open face away from the supporting means, and at least one notch in the peripheral rim surrounding the open face which notch comprises at least one surface which inclines steeply from the rim, the

rim being free of projections, means for rotating the godet, and a draw-off device for continually withdrawing the liquid-treated filamentary material from the godet.

5. Means for applying liquid to filamentary material comprising a container for the liquid, a godet partially immersed in the liquid, said godet having a supporting means, an open face away from the godet, and at least one notch in the peripheral rim surrounding the open face, said notch comprising at least one surface which inclines steeply from the rim, the rim being free of projections, a guide means positioned adjacent the godet and adapted to remove the filamentary material from the godet and replace it thereon in a manner to effect lateral displacement of the material on the periphery of the godet, means for rotating the godet, and a draw-off device for continually withdrawing the liquid-treated filamentary material from the godet.

6. Means for applying liquid to filamentary material comprising a container for the liquid, a godet partially immersed in the liquid, said godet having a supporting means, an open face away from the supporting means, and at least one notch in the peripheral rim surrounding the open face which notch comprises at least one surface which inclines steeply from the rim, the rim being free of projections, a guide means positioned adjacent the godet and adapted to remove the filamentary material from the godet and replace it thereon in a manner to effect lateral displacement of the material on the godet, means for rotating the godet, a second godet for continually withdrawing the liquid-treated filamentary material from the first godet, and means for rotating the second godet at a higher peripheral speed than the first godet to effect stretching of the liquid-treated filamentary material therebetween.

7. A rotatable godet for use in handling filamentary material, said godet having a smooth cylindrical circumferential surface, a supporting means, an open face away from the supporting means, and at least one notch in the peripheral rim surrounding the open face, the rim being free of projections.

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