PATENT SPECIFICATION

664,968

Date of filing Complete Specification : June 26, 1950.

Application Date : July 4, 1949. No. 17580/49.

Complete Specification Published : Jan. 16, 1952.

Index at Acceptance :—Class 87(ii), A(1o : 2ax : 2d1x).

COMPLETE SPECIFICATION.

Improvements in and relating to Machines for Sheeting Rubber Coagulum.

We, GUTHRIE & Co. LIMITED, a Company incorporated in the Colony of Singapore, of 13 North Boat Quay, Singapore, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to machines for the sheeting of natural or synthetic rubber coagulum and of the kind in which there are ~~unified~~ furnished a plurality of pairs of rollers between which the material under treatment is caused to pass in sequence, the material passing from one pair of adjacent pairs of rollers to the other pair of the adjacent pairs of rollers over a tray or the like.

The object of the present invention is to provide an improved construction of tray having means for promoting the centralising of the sheet in the form of a plurality of convergent elevations extending in a direction from the rollers by which the sheet is supplied to the tray towards the pair of rollers to which the material is fed by its passage over the tray.

According to the present invention, the elevations are generally of elliptical or oval form in plan and exhibit surfaces which are convex both in the direction of the major axis of the ovoid or ellipse and in the direction of the minor axis thereof.

Thus, as an example of a tray in accordance with the invention, intermediate in the length of the tray there is provided two or more rows of elevations the elevations of each of the non-central members of the rows having their major axes inclined in a direction from the side towards the centre of the tray or the median plane of the rollers with optionally other elevations of similar section adjacent to the centre of the tray arranged with their axes at right angles to the axes of rotation of the rollers.

Further, in accordance with the invention, the sides of the trays may be inclined towards one another in a direction from the pair of rollers by which coagulum will be supplied to the tray to the position in which coagulum will be delivered to the next following pair of rollers.

Optionally, in accordance with the invention, throughout the width of the tray these portions which are immediately adjacent to the rollers may be plane, horizontal or substantially horizontal surfaces continuing into a surface which is inclined upwardly at a relatively small angle with the horizontal in the direction of the feed of the coagulum and then continuing downwardly at a steep angle with the horizontal portion of the tray adjacent to the roller to which the sheet of coagulum will be delivered by the tray.

The portion of the tray which is inclined at a relatively small angle with the horizontal may in addition be inclined in a downward direction from its centre towards the sides of the tray, the inclination being, for instance, one quarter inch in ten-and-a-half inches.

The ovoid or elliptical elevations may have a curvature of 5/8-inch radius in the direction of the major axis of the ovoid or ellipse, and 5/8-inch radius in the direction at right angles thereto, the two curved surfaces being radiussed into one another and all the curved surfaces being radiussed into the plane surfaces of the tray which in addition are preferably radiussed into the adjacent plane surfaces.

Referring to the accompanying drawings which illustrate by way of example a tray constructed according to the invention.

Figure 1 represents a plan view of one half of the tray (the half of the tray ending at line A—B); and

Figure 2 is a cross-sectional elevation taken on line A—B of Figure 1.

As shown the tray 1 is positioned between oppositely disposed pairs of rollers 2, 3 and 4, 5 respectively, the coagulum

being fed on to the tray by rollers 4, 5 for treatment between the rollers 2, 3.

The tray is provided with two rows of elliptical or ovoid surfaces 6 which are convex both in the direction of their major and minor axes.

The elliptical surfaces of the non-central members of the rows have their major axes inclined as shown in a direction from the sides towards the centre of the tray or the median plane of the rollers. Those elliptical surfaces 6*a* in the centre of the tray are so arranged as shown that the major axes of the surfaces are at right angles to the axes of rotation of the rollers

On either side of the tray there are provided side members 7 which are inclined towards one another in the direction from which the coagulum will be supplied to the tray from the rollers 4, 5 to the position in which the coagulum will be delivered to the rollers 2, 3.

Throughout the width of the tray those portions immediately adjacent to both pairs of rollers have horizontal surfaces 8 as shown in Figure 2 continuing into a surface 9 which is inclined upwardly at a relatively small angle with the horizontal in the direction of the feed of the coagulum and then continuing downwardly into the surface 9*a* which has a steep angle with the horizontal portion of the tray adjacent to the rollers 2, 3 to which the sheet coagulum is delivered by the tray.

The portion 9 of the tray 1 which is inclined at a relatively small angle with the horizontal is inclined also in a downward direction from the centre towards each side of the tray and meets side members 7 at line 12 above the level of the horizontal portion 8 as will be seen in Figure 2.

The tray 1 and side members 7 are provided with holes 11 by which they may be secured to the frame 10 of the machine by screw bolts as shown in Figure 2.

It is to be understood that if desired more than two rows of ovoid or elliptical elevations may be provided on the tray and instead of having only one centrally disposed line of elevations 6*a* as shown having their axes at right angles to the axes of rotation of the rollers a number of such lines may be dispensed with.

What we claim is:—

1. A machine for the sheeting of natural or synthetic rubber coagulum comprising a plurality of pairs of rollers between which the material under treatment is caused to pass in sequence, the material passing from one pair of adjacent pairs of rollers to the other pair of the adjacent pairs over a tray or the like, and wherein means are provided for promoting the centralizing of the sheet in the form of a plurality of convergent elevations extending in a direction from the rollers by which the sheet is supplied to the tray towards the pair of rollers to which the material is fed by its passage over the tray, characterized in that the centralising means comprises elevations of elliptical or oval form in plan and exhibit surfaces which are convex both in the direction of the major axis of the ovoid or ellipse and in the direction of the minor axis thereof.

2. The machine as claimed in Claim 1, wherein intermediate in the length of the tray there are provided two or more rows of elevations, the elevations of each of the non-central members of the rows having their major axes inclined in a direction from the side towards the centre of the tray or the median plane of the rollers with optionally other elevations of similar section adjacent to the centre of the tray arranged with their axes at right angles to the axes of rotation of the rollers.

3. The machine as claimed in Claim 1 or 2 wherein the sides of the tray are inclined towards one another in a direction from the pair of rollers by which coagulum will be supplied to the tray to the position in which coagulum will be delivered to the next following pair of rollers.

4. The machine as claimed in any of the preceding claims wherein throughout the width of the tray those portions which are immediately adjacent the rollers are plane, horizontal or substantially horizontal surfaces continuing into a surface which is inclined upwardly at a relatively small angle with the horizontal in the direction of the feed of the coagulum and then continuing downwardly at a steep angle with the horizontal portion of the tray adjacent to the rollers to which the sheet of coagulum will be delivered by the tray.

5. The machine as claimed in Claim 4 wherein the portion of the tray which is inclined at a relatively small angle with the horizontal is in addition inclined in a downward direction from its centre towards the sides of the tray, the inclination being, for instance, one quarter inch in ten and half inches.

6. A tray, for a machine for the sheeting of natural or synthetic rubber coagulum of the kind described, substantially as described with reference to the accompanying drawings.

Dated this 24th day of June, 1950.

MARKS & CLERK.

provided or such line or lines may be

PATENT OFFICE

being fed on to the tray by rollers 4, 5 for treatment between the rollers 2, 3.

The tray is provided with two rows of elliptical or ovoid surfaces 6 which are convex both in the direction of their major and minor axes.

The elliptical surfaces of the non-central members of the rows have their major axes inclined as shown in a direction from the sides towards the centre of the tray or the median plane of the rollers. Those elliptical surfaces 6*a* in the centre of the tray are so arranged as shown that the major axes of the surfaces are at right angles to the axes of rotation of the rollers

On either side of the tray there are provided side members 7 which are inclined towards one another in the direction from which the coagulum will be supplied to the tray from the rollers 4, 5 to the position in which the coagulum will be delivered to the rollers 2, 3.

Throughout the width of the tray those portions immediately adjacent to both pairs of rollers have horizontal surfaces 8 as shown in Figure 2 continuing into a surface 9 which is inclined upwardly at a relatively small angle with the horizontal in the direction of the feed of the coagulum and then continuing downwardly into the surface 9*a* which has a steep angle with the horizontal portion of the tray adjacent to the rollers 2, 3 to which the sheet coagulum is delivered by the tray.

The portion 9 of the tray 1 which is inclined at a relatively small angle with the horizontal is inclined also in a downward direction from the centre towards each side of the tray and meets side members 7 at line 12 above the level of the horizontal portion 8 as will be seen in Figure 2.

The tray 1 and side members 7 are provided with holes 11 by which they may be secured to the frame 10 of the machine by screw bolts as shown in Figure 2.

It is to be understood that if desired more than two rows of ovoid or elliptical elevations may be provided on the tray and instead of having only one centrally disposed line of elevations 6*a* as shown having their axes at right angles to the axes of rotation of the rollers a number of such lines may be dispensed with.

What we claim is:—

1. A machine for the sheeting of natural or synthetic rubber coagulum comprising a plurality of pairs of rollers between which the material under treatment is caused to pass in sequence, the material passing from one pair of adjacent pairs of rollers to the other pair of the adjacent pairs over a tray or the like, and wherein means are provided for promoting the centralizing of the sheet in the form of a plurality of convergent elevations extending in a direction from the rollers by which the sheet is supplied to the tray towards the pair of rollers to which the material is fed by its passage over the tray, characterized in that the centralising means comprises elevations of elliptical or oval form in plan and exhibit surfaces which are convex both in the direction of the major axis of the ovoid or ellipse and in the direction of the minor axis thereof.

2. The machine as claimed in Claim 1, wherein intermediate in the length of the tray there are provided two or more rows of elevations, the elevations of each of the non-central members of the rows having their major axes inclined in a direction from the side towards the centre of the tray or the median plane of the rollers with optionally other elevations of similar section adjacent to the centre of the tray arranged with their axes at right angles to the axes of rotation of the rollers.

3. The machine as claimed in Claim 1 or 2 wherein the sides of the tray are inclined towards one another in a direction from the pair of rollers by which coagulum will be supplied to the tray to the position in which coagulum will be delivered to the next following pair of rollers.

4. The machine as claimed in any of the preceding claims wherein throughout the width of the tray those portions which are immediately adjacent the rollers are plane, horizontal or substantially horizontal surfaces continuing into a surface which is inclined upwardly at a relatively small angle with the horizontal in the direction of the feed of the coagulum and then continuing downwardly at a steep angle with the horizontal portion of the tray adjacent to the rollers to which the sheet of coagulum will be delivered by the tray.

5. The machine as claimed in Claim 4 wherein the portion of the tray which is inclined at a relatively small angle with the horizontal is in addition inclined in a downward direction from its centre towards the sides of the tray, the inclination being, for instance, one quarter inch in ten and half inches.

6. A tray, for a machine for the sheeting of natural or synthetic rubber coagulum of the kind described, substantially as described with reference to the accompanying drawings.

Dated this 24th day of June, 1950.

MARKS & CLERK.

provided or such line or lines may be

PATENT OFFICE

* C L M S *

PROVISIONAL SPECIFICATION.

Improvements in and relating to Machines for Sheeting Rubber Coagulum.

We, GUTHRIE & Co. LIMITED, a Company incorporated in the Colony of Singapore, of 13 North Boat Quay, Singapore, do hereby declare the nature of this invention to be as follows:—

This invention relates to machines for the sheeting of natural or synthetic rubber coagulum and of the kind in which there are furnished a plurality of pairs of rollers between which the material under treatment is caused to pass in sequence, the material passing from one pair of adjacent pairs of rollers to the other pair of the adjacent pairs over a tray or the like.

The object of the present invention is to provide an improved construction of tray having means for promoting the centralising of the sheet in the form of a plurality of convergent elevations extending in a direction from the rollers by which the sheet is supplied to the tray towards the pair of rollers to which the material is fed by its passage over the tray.

According to the present invention, the elevations are generally of elliptical or oval form in plan and exhibit surfaces which are convex both in the direction of the major axis of the ovoid or ellipse and in the direction of the minor axis thereof.

Thus, in accordance with the invention, intermediate in the length of the tray there may be provided two or more rows of elevations each extending in a direction lengthwise to the travel of the coagulum in passing from one set of rollers to a second set of rollers, the elevations of each of the rows adjacent to the sides of the tray having their major axes inclined in a direction from the side towards the centre of the tray or the median plane of the rollers with optionally other elevations of similar section adjacent to the centre of the tray arranged with their axes at right angles to the axes of rotation of the rollers.

Further, in accordance with the invention, the sides of the trays may be inclined inward in a direction from the pair of rollers by which coagulum will be supplied to the tray to the position in which the coagulum will be delivered from the sheet to the next following pair of rollers.

Optionally, in accordance with the invention, throughout the width of the tray these portions which are immediately adjacent to the rollers may be plane, horizontal or substantially horizontal surfaces continuing into a surface which is inclined upward at a relatively small angle with the horizontal and then downward at a sharper angle with the horizontal portion of the tray adjacent to the roller to which the sheet of coagulum will be delivered by the tray.

The portion of the tray which is inclined at a relatively small angle with the horizontal may in addition be inclined in a downward direction from its centre towards the sides of the tray, the inclination being, for instance, one quarter inch in ten and a half inches.

The ovoid or elliptical elevations may have a curvature of 5/8-inch radius in the direction of the major axis of the ovoid or ellipse, and 5/8-inch radius in the direction at right angles thereto, the two curved surfaces being radiussed into one another and all the curved surfaces being radiussed into the plane surfaces of the tray which in addition are preferably radiussed into the adjacent plane surfaces.

Dated this 4th day of July, 1949.

MARKS & CLERK.

Abingdon: Printed for His Majesty's Stationery Office, by Burgess & Son (Abingdon), Ltd.—1951
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies, price 2s. per copy; by post 2s. 1d. may be obtained.