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1,985,644

MACHINE FOR COATING ARTICLES WITH PARAFFIN OR THE LIKE

Filed April 24, 1933

2 Sheets-Sheet 1

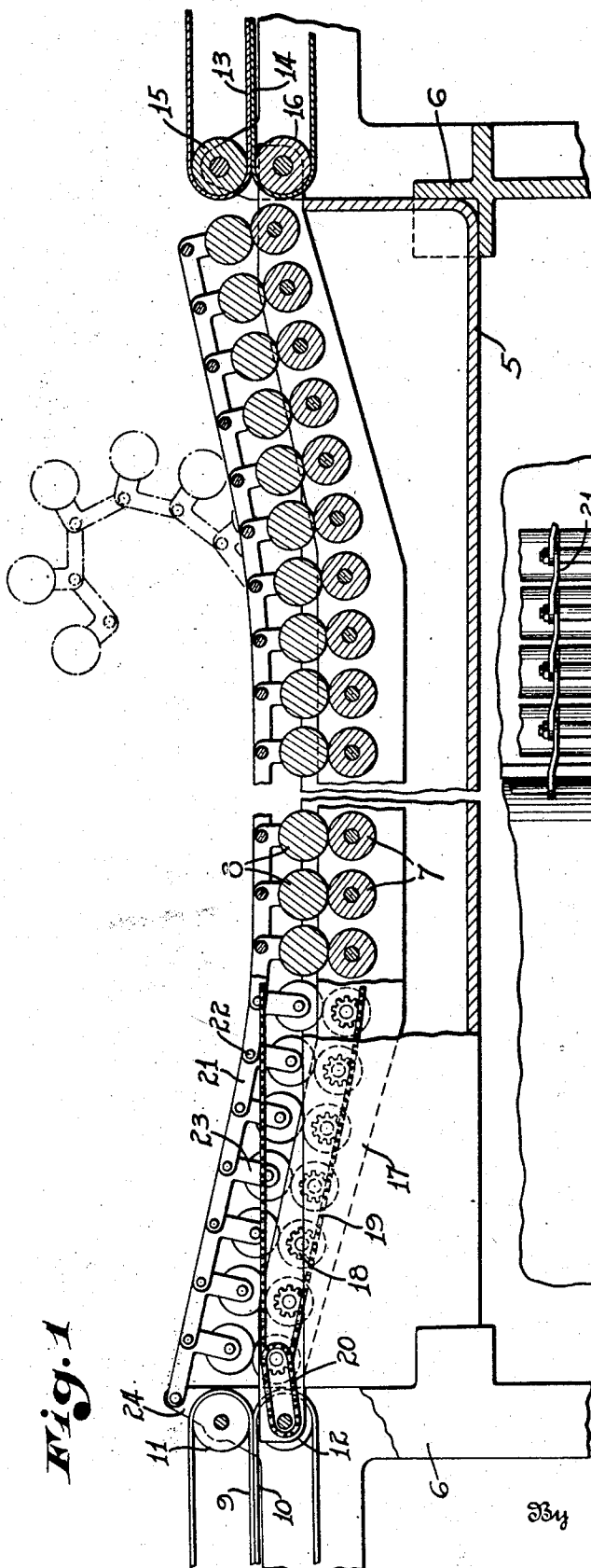


Fig. 1

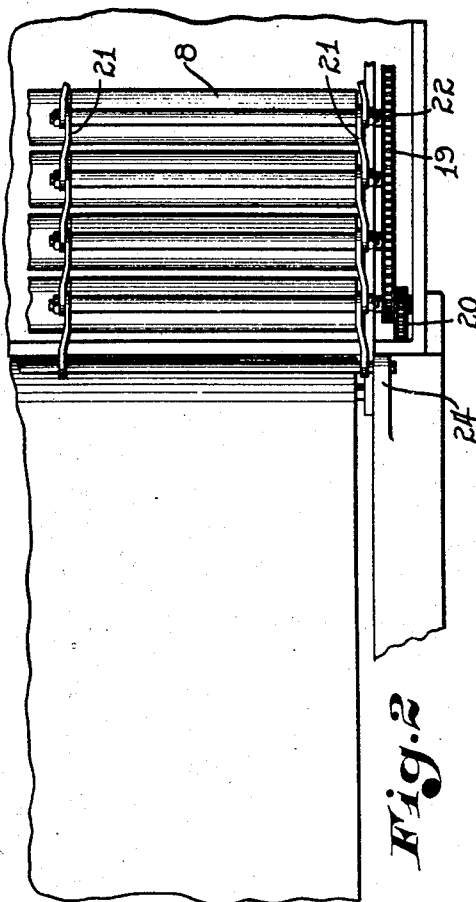


Fig. 2

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Fig. 3

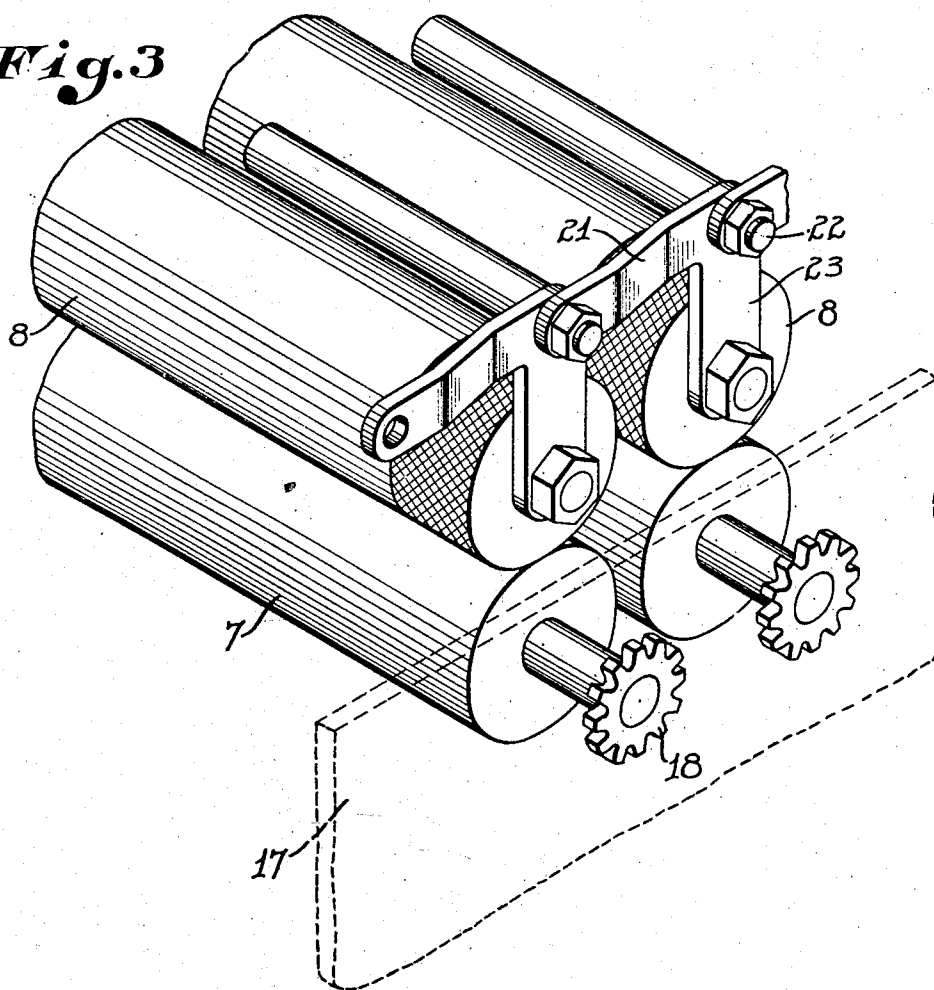
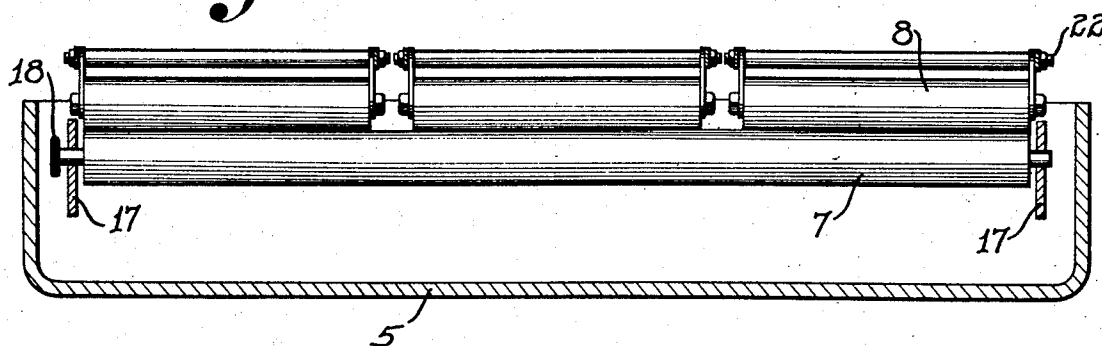


Fig. 4



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UNITED STATES PATENT OFFICE

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MACHINE FOR COATING ARTICLES WITH
PARAFFIN OR THE LIKEArthur R. Pollock, Toledo, Ohio, assignor to The
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11 Claims. (Cl. 91-46)

This invention relates to a machine for coating articles with paraffin or similar material by passing the articles between series of rolls, which carry them beneath the surface of the coating material. It has been designed with special reference to the treatment of small articles, such as milk bottle caps.

The primary object of the invention is to mount the rolls in such a manner that, if a bottle cap becomes stuck or lodged during its passage through the machine, it may be readily dislodged or straightened without disassembling any of the rolls or even stopping the operation of the machine.

In accordance with the invention, the lower series of rolls, some of which are immersed in the coating material, are all positively driven. The upper series of rolls, however, are mounted in a series of bearing elements which are connected in the manner of a mat anchored at one end only, so that any of the upper rolls may be easily lifted up to provide free access to whatever article may be beneath it. The upper rolls are preferably driven by frictional contact.

The invention will be more specifically described in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of the machine;

Figure 2 is a partial plan view of the same;

Figure 3 is an enlarged perspective view of a portion of the roll mechanism;

Figure 4 is a transverse, sectional view of the machine.

As illustrated in the drawings, the melted paraffin or other coating material is contained in a tank 5 which is supported by a framework 6. The bottle caps or other articles to be treated are passed between a lower series of rolls 7 and an upper series of rolls 8 which cooperate therewith. These rolls are so arranged that the bottle caps passing therebetween are carried downwardly into the bath and then upwardly and delivered therefrom.

The bottle caps are fed to one end of the series of rolls 7 and 8 by a pair of feed belts 9 and 10 which pass about upper and lower rolls 11 and 12 at one end of the machine. After passing through the bath, the caps are delivered from the rolls 7 and 8 and are carried away between delivery belts 13 and 14, which pass about upper and lower rolls 15 and 16.

The rolls 7 are journaled in plates 17 located at opposite sides of the tank 5 and each roll 7 is provided at one end with a sprocket 18, all of these sprockets being connected by a sprocket

chain 19 so that the rolls 7 are positively driven from the first roll which is driven by a sprocket gear connection 20 with the roll 12 or by some other equivalent driving means.

In order that ready access may be had to straighten out or dislodge any caps which become stuck in their passage through the machine, the upper rolls 8 are mounted in a flexible mat which comprises series of links 21 connected by pivot rods 22. The links 21 are L-shaped, with the legs 23 extending downwardly and providing bearings for the rolls 8. One end of the mat is anchored to an upwardly projecting portion 24 of the frame 6, while the other end is free to be raised and folded backwardly, as shown in dotted lines in Figure 1, without stopping the operation of the machine or disassembling any of the rolls.

The lower rolls 7 extend continuously from side to side of the machine, but the upper series of rolls may be divided into sections, as illustrated in Figure 4, so that any one of the sections may be raised up without interfering with the other sections.

From the foregoing description, it will be seen that as the caps are fed through the machine from left to right in Figure 1, they are carried downwardly into the paraffin bath between the series of rolls 7 and 8 and, after being completely coated, are delivered between the belts 13 and 14. The lower rolls 7 are positively driven, while the upper rolls 8 are driven by frictional contact with the lower rolls or with the caps as they pass between the rolls. It is preferred to make the lower rolls 7 of rubber compound and the upper rolls 8 of metal with a knurled surface but, of course, this construction is not material to the invention.

While the machine has been designed with special reference to the coating of milk bottle caps with paraffin, it may, of course, be used for coating other articles with liquid material. The present construction has been specifically described, but the same may be considerably modified without departing from the scope of the invention as claimed.

What I claim is:—

1. In a machine of the class described, a lower series of rolls, fixed members in which said rolls are journaled, an upper series of rolls, a mat in which said upper rolls are journaled, and means for anchoring said mat at one end only, whereby the other end of the mat may be raised to release any articles which become stuck or lodged between the rolls.

2. In a machine of the class described, a lower

series of rolls, fixed members in which said rolls are journaled, an upper series of rolls, and series of links connected one to the other and providing bearings for the upper rolls, said series of links
 5 being anchored at one end only, so that the upper rolls are freely movable upwardly to release any articles which become stuck or lodged between the rolls.

3. In a machine of the class described, a lower
 10 series of rolls, fixed members in which said rolls are journaled, an upper series of rolls, a plurality of links arranged in pairs, the first pair being pivoted to swing about a fixed axis and each successive pair of links being pivoted to the preceding
 15 pair, one of the upper rolls being journaled in each pair of links and resting on one of the lower rolls.

4. In a coating machine of the character described, a tank to contain the liquid coating material; a lower series of rolls, the intermediate
 20 rolls of the series being normally immersed in the liquid, an upper series of rolls, a mat in which said upper rolls are journaled, and means for anchoring said mat at one end only, whereby the
 25 other end of the mat may be raised to release any articles which become stuck or lodged between the rolls.

5. In a coating machine of the character described, a tank to contain the liquid coating material, a lower series of rolls, the intermediate
 30 rolls of the series being normally immersed in the liquid, an upper series of rolls, and series of links connected one to the other and providing bearings for the upper rolls, said series of
 35 links being anchored at one end only, so that the upper rolls are freely movable upwardly to provide access to any articles which become disarranged between the rolls.

6. In a coating machine of the character described, a tank to contain the liquid coating ma-

terial, a lower series of rolls, the intermediate rolls of the series being normally immersed in the liquid, an upper series of rolls, a plurality of links arranged in pairs, the first pair being pivoted to swing about a fixed axis and each successive pair of links being pivoted to the preceding pair, one of the upper rolls being journaled in each pair of links and resting on one of the lower rolls.

7. In a machine of the class described, upper
 10 and lower series of article carrying rolls, and flexible means connecting the upper rolls together to permit them to be raised from the lower rolls and revolutely moved with reference to each other.

8. In a machine of the class described, upper
 15 and lower series of article carrying rolls, and means connecting the rolls of each series and provided with bearings for the rolls, the connecting means for the upper rolls being movable to permit each successive roll to be swung upwardly
 20 in an arcuate path with reference to the preceding roll.

9. In a machine of the class described, upper
 and lower series of article carrying rolls, and a series of connected links provided with bearings
 25 in which the upper rolls are mounted, said series of links being anchored at one end.

10. In a machine of the class described, upper
 and lower series of article carrying rolls, and a series of connected L-shaped links provided with
 30 bearings in which the upper rolls are mounted, each successive link being pivotally movable about its connection with the preceding link.

11. In a machine of the class described, upper
 and lower series of article carrying rolls, and
 35 a series of pivotally connected links, each having a depending leg in which one of the upper rolls has a bearing, said series of links being anchored at one end.

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