Dec. 28, 1943. I. KOTCHER 2,337,610

CARTON PROCESSING

Original Filed March 11, 1938 6 Sheets-Sheet 1

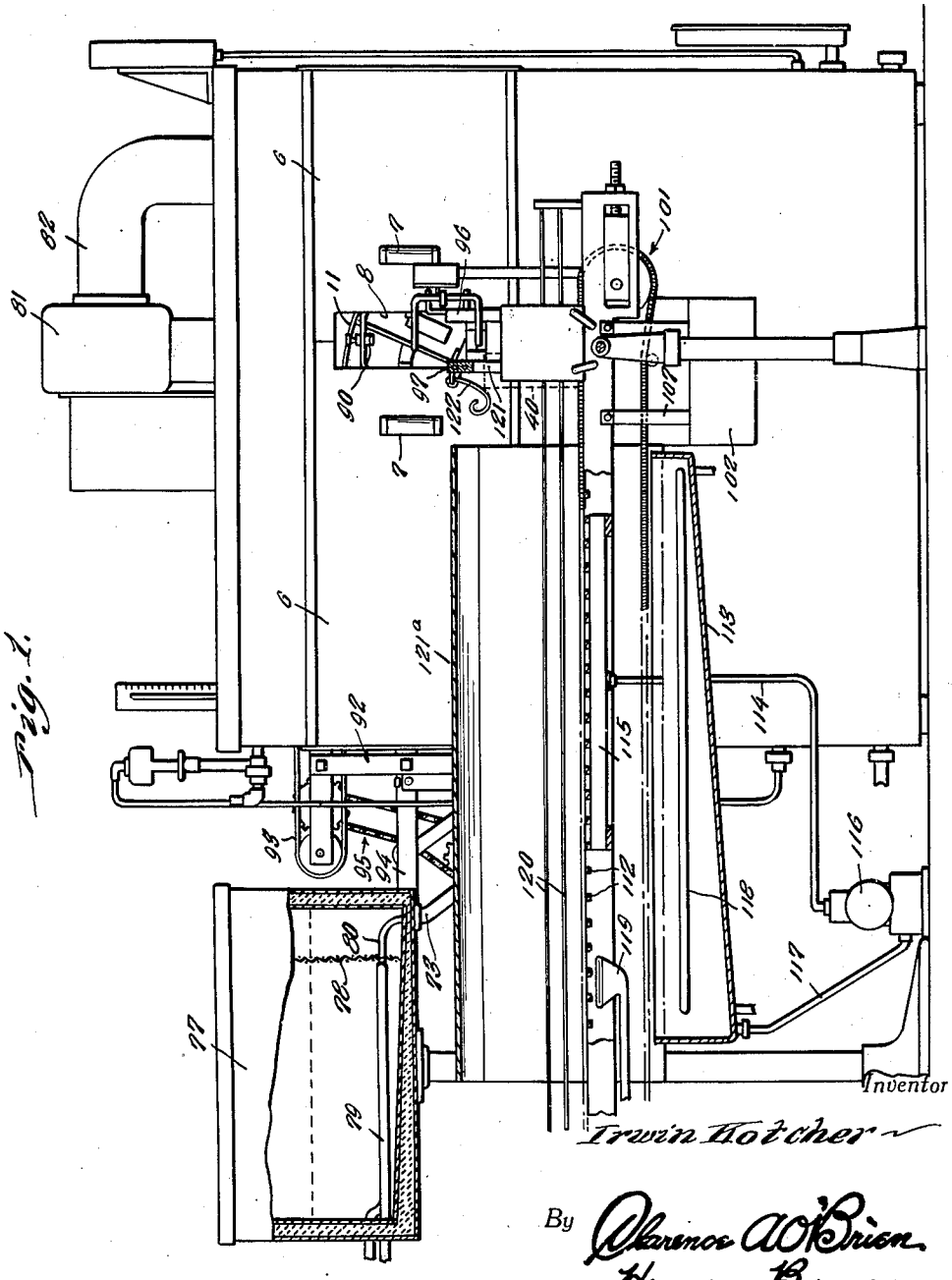


Fig. 1.

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CARTON PROCESSING

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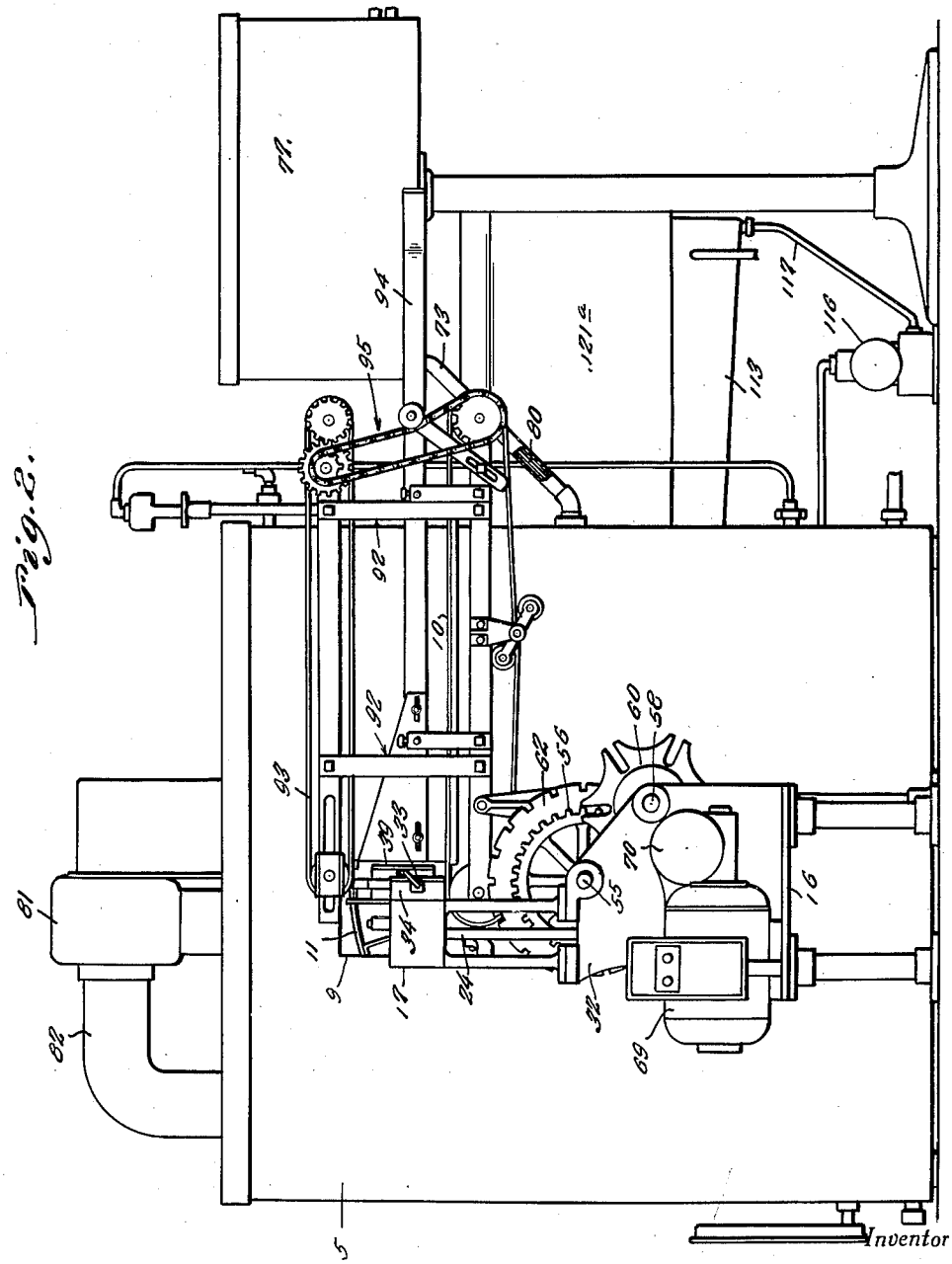


Fig. 2.

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CARTON PROCESSING

Original Filed March 11, 1938 6 Sheets-Sheet 3

Fig. 3.

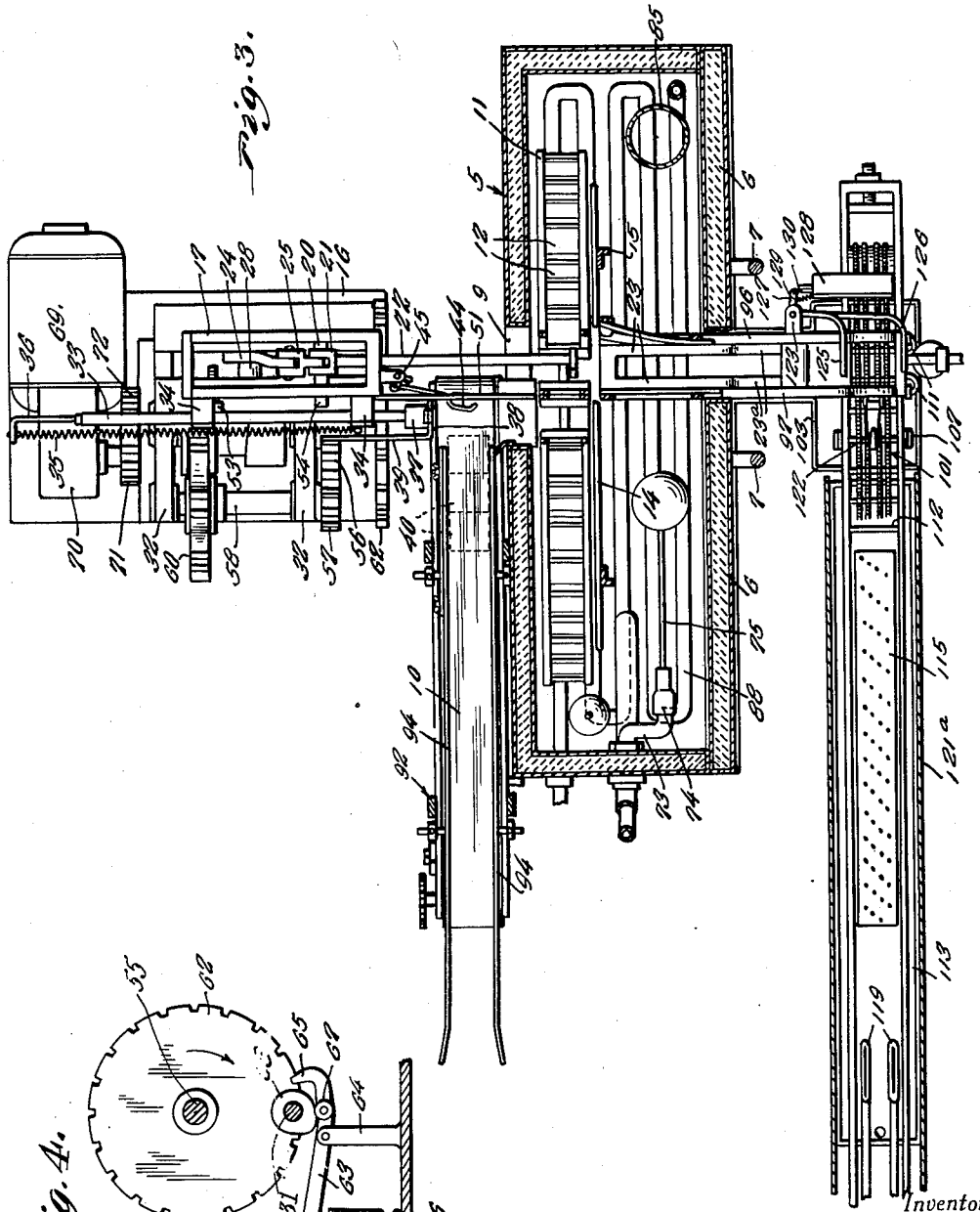


Fig. 4.

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CARTON PROCESSING

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Fig. 6.

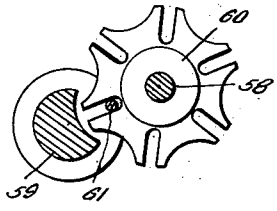


Fig. 5.

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CARTON PROCESSING

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Fig. 7.

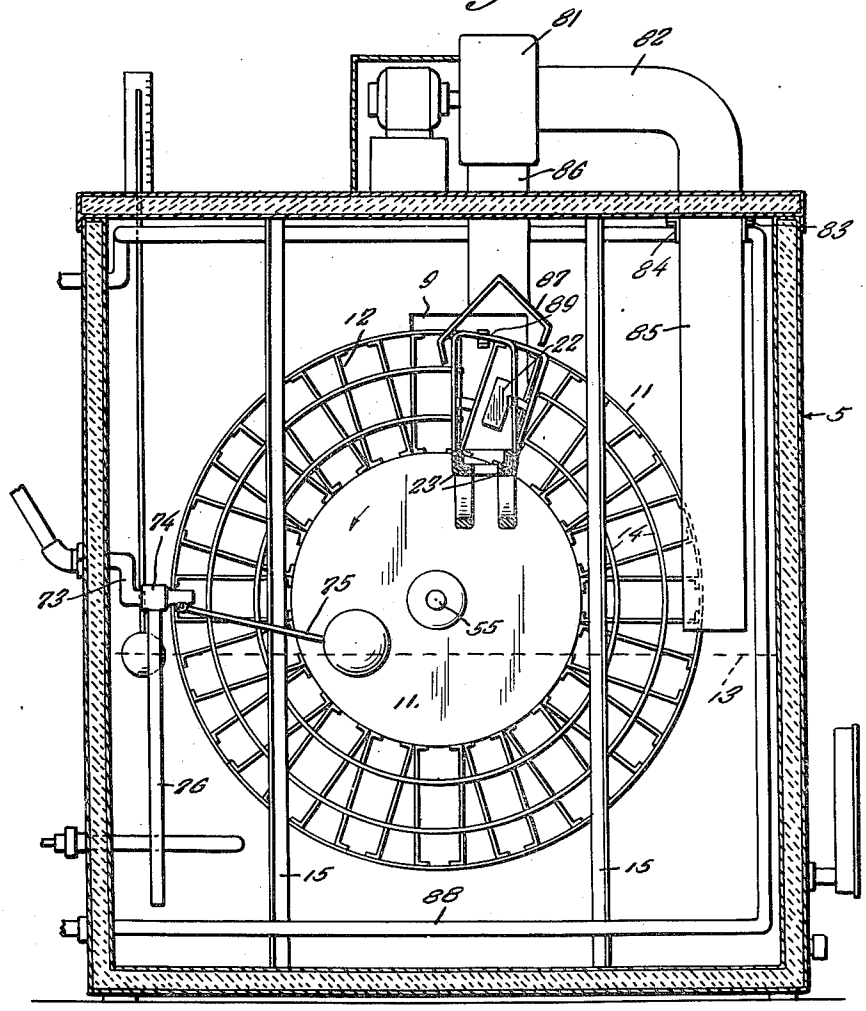


Fig. 8.

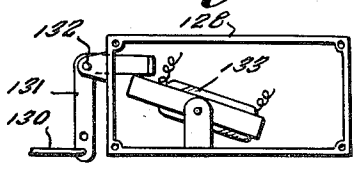
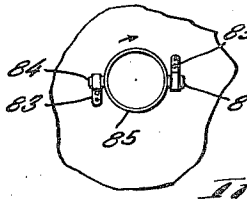


Fig. 9.



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CARTON PROCESSING

Original Filed March 11, 1938 6 Sheets-Sheet 6

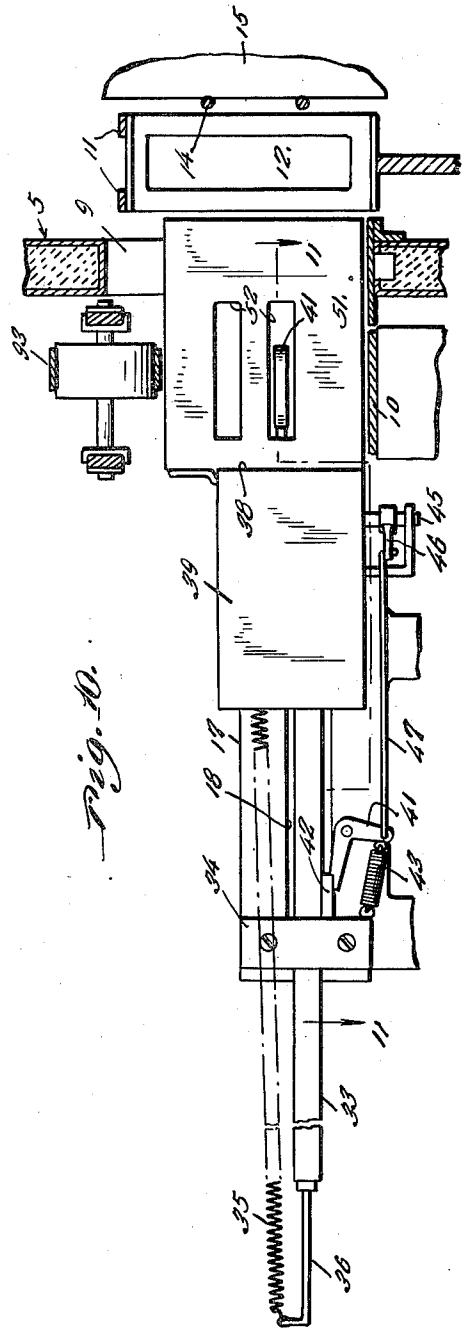


Fig. 10.

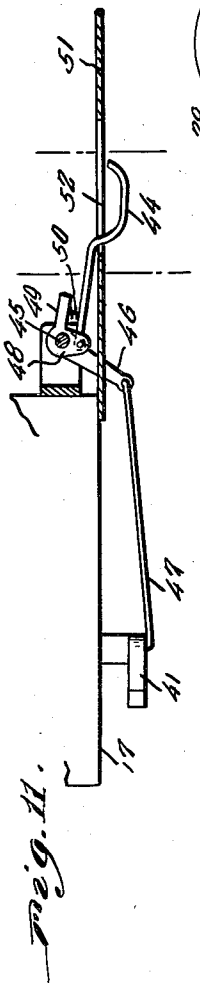


Fig. 11.

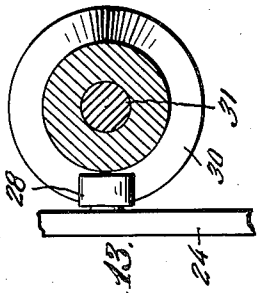


Fig. 13.

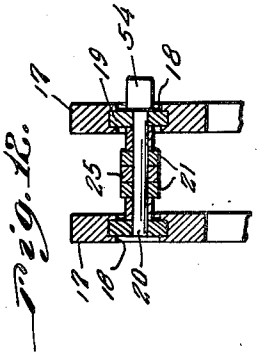


Fig. 12.

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Patented Dec. 28, 1943 2,337,610

UNITED STATES PATENT OFFICE

2,337,610

CARTON PROCESSING

Irwin Kotcher, Brooklyn, N. Y.

Substituted for abandoned application Serial No. 195,387, March 11, 1938. This application July 23, 1943, Serial No. 495,954

5 Claims. (Cl. 91—46)

This invention relates to the art of processing cartons, and the invention is concerned with the treating of paper cartons with paraffin.

An object of the invention is to provide improved means for subjecting the cartons to a bath of paraffin.

The invention together with its numerous objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a view of the invention mostly in elevation but with certain parts broken away and shown in section.

Figure 2 is an elevational view of the paraffin bath assembly at the feed side of said assembly.

Figure 3 is a view showing in top plan conveyor mechanisms, feed and ejection devices, and in horizontal section the paraffin bath, and illustrating certain details hereinafter more fully referred to.

Figure 4 is a detail view showing means provided in accordance with the invention for holding the pocket-equipped wheel against untoward movement as hereinafter more fully explained.

Figure 5 is a view mostly in vertical section through the paraffin bath and parts associated therewith.

Figure 6 is a detail of a Geneva movement hereinafter more fully referred to.

Figure 7 is a detail view showing mostly in elevation the wheel and other parts within the casing of the paraffin bath, said casing being shown in vertical section.

Figure 8 is a detail view of a mercury switch and associated parts, with the cover plate for the casing of the switch removed.

Figure 9 is a detail view showing the manner of detachably associating an auxiliary inlet pipe with the inlet pipe of a blower forming part of the invention.

Figure 10 is an enlarged detail view mostly in elevation showing the feeding device and trip therefor.

Figure 11 is a detail sectional view taken substantially on the line 11—11 of Figure 10.

Figure 12 is a detail sectional view taken substantially on the line 12—12 of Figure 5.

Figure 13 is a detail view of a cam and roller assembly forming part of the ejector mechanism.

In accordance with my invention the cartons pass directly from the carton forming machine into a device for coating the cartons internally and externally with wax. Such wax-coating device in the present instance comprises a suitable casing 6, the walls of which are suitably insulated. Access to the casing 5 is had at one side thereof through the medium of oppositely shiftable sliding doors 6—6 equipped with handles 7. At the meeting edges thereof the doors 6—6 are suitably notched to provide therebetween an opening 8 through which the wax-coated cartons exit from the casing 5.

At the opposite side thereof the casing 5 is provided with an entrance opening 9 and through which the cartons pass into the casing 5 from a conveyor 10. Conveyor 10, in actual practice will have its intake end suitably connected with or aligned with the discharge conveyor leading from the aforementioned carton-forming machine (not shown).

Suitably and rotatably mounted within the casing 5 adjacent one side thereof is a dipping wheel indicated generally by numeral 11.

The wheel 11 may be of any suitable construction and is provided on its periphery with a circular series of skeleton frame-like radial pockets 12 of a size and shape to accommodate the cartons. In this connection it will be understood that the respective pockets 12 are opened at opposite sides thereof so as to permit a carton to pass into the pocket from one side of the wheel and to discharge from the pocket at the opposite side of the wheel. Also the structure of the pocket is such as to insure a thorough immersion of the carton therein in the bath of liquid paraffin 13.

In order to prevent the cartons from slipping laterally out of the pockets 12 there are provided in the casing, and at one side of the wheel, substantially split circular, concentric retaining rods 14 mounted or supported by pairs of vertical standards 15.

As shown in Figure 7 the retaining elements 14 have the ends thereof formed by the split spaced apart a distance sufficient to permit a carton to pass laterally outwardly from a pocket when that pocket reaches a point just prior to the highest position it reaches in one complete revolution of the wheel as will also be apparent from a study of Figure 7.

Means are provided for transferring the cartons, successively, from the conveyor 10 to the wheel 11 and for ejecting a treated carton from a pocket 12 simultaneously with the positioning of an untreated carton within a pocket 12. The mechanism whereby the foregoing is accomplished will now be described.

Located adjacent to one side of the casing 5 is a platform or stand 16 on which is mounted a suitable frame structure including a guide frame 17. Frame 17 has opposite sides thereof provided with slots 18 in which operate rollers 19 provided on the end of a shaft 20 (see Figure 12). Shaft 20 has pivoted thereto a yoke 21 provided on one end of an ejector rod 22. Rod 22 is provided for the purpose of ejecting a coated carton from a pocket 12, the ejected carton passing from its pocket 12 onto a trackway 23.

The cross rod or shaft 20 is caused to reciprocate within the guide 17 through the medium of a link 24 that at its upper end is pivoted to a yoke 25 carried by the cross shaft 20. At the lower end thereof the link 24 is pivoted as at 26 to a base 27 provided on the platform 16. Adjacent said lower end the link 24 is provided with a lateral roller 28 is is normally urged through the medium of a suitably provided coil spring 29 into engagement with a cam groove provided on a cam 30. Cam 30 is mounted on a driven shaft 31 suitably supported by bearing brackets 32 rising from the aforementioned base 27. Thus it will be seen that as shaft 31 rotates link 24 is caused to oscillate thus in turn causing the shaft 20 to reciprocate back and forth carrying with it the ejector arm 22. Obviously, as the arm 22 moves forwardly it passes through the opening 9 into the casing 5 to contact a carton in a pocket 12 as the said pocket passes into position opposite the opening 9. Contact of the arm 22 with said carton will cause the latter to be forced transversely with respect to the wheel 11 out of said pocket and onto the aforementioned track 23.

For transferring the cartons from the conveyor 10, and forcing the cartons successively into succeeding pockets 12 as the wheel 11 rotates there is provided an ejector arm 33. The arm 33 works in suitable guides 34 and is normally urged to a feeding position through the medium of a coil spring 35 anchored at one end to a guide 34 and at a relatively opposite end connected with the arm 33 through the medium of a hook-like rod extension 36. At the operating end thereof the rod 33 is provided with a head 37 to which is secured in any suitable manner one flange 38 of a substantially L-shaped plate the other flange or arm 39 of which is adapted to move with the arm 33 transversely across the conveyor 10 to act as a stop for the succeeding cartons 40 as the foremost carton is being passed from the conveyor 10 into a pocket 12.

The arm 33 is releasably retained in a retracted position through the medium of a latch dog 41 pivotally mounted in proximity to the arm 33 and having one end engaging a keeper block 42 carried by the arm 33 as shown in Figure 10. Said end of the dog 41 is normally urged into engagement with the keeper block 42 through the medium of a suitably provided coil spring 43.

The latch 41 is operated from a trip 44 and to that end there is suitably provided a vertical shaft 45 provided adjacent its lower end with an arm 46 connected to the latch 41 through the medium of a link 47. Adjacent the upper end thereof the shaft 45 is provided with an arm 48 to which is pivoted one end of the trip 44. Arm 48 has extending angularly therefrom a lug 49 between which and an end portion of the trip 44 a coil spring 50 is disposed.

At the end of the conveyor 10 terminating opposite the opening 9 there is disposed across the conveyor a perpendicular wall or plate member 51. Plate 51 is provided with a slot 52 through which the offset free end of the trip 44 normally extends to be engaged by the foremost carton 40 as the latter moves with the conveyor 10 to the discharge end of the conveyor.

From the above it will be seen that as the foremost carton 40 moves into contact with the trip 44 the latter will be caused to move inwardly through the slot 52 against the action of spring 50 resulting in a rocking of the shaft 45. Movement of the shaft 45 is transmitted through the link 47 to the latch 41 thus causing the latch 41 against the action of spring 43 to swing out of engagement with the keeper block 42. Upon disengagement of the latch 41 in this manner feed arm 33 will, under the action of spring 35, be caused to move in a direction to engage the flange 38 of the L-shaped head with the aforementioned foremost carton 40 forcing the latter through the opening 9 and into a pocket 12 of the wheel 11.

Carried by the arm 33 is a lateral lug 53 arranged in the path of a lug or projection 54 arranged on one end of the shaft 20. Thus it will be seen that with latch 41 in a released position lugs 53 and 54 will cooperate for transmitting return movement of the shaft 20 to the arm 33 for retracting the latter against the action of spring 35.

In connection with the above it will be understood that when the device is in operation arms 22 and 33 will be reciprocating rapidly so that during the operation of the device practically at no time are lugs 53 and 54 out of contact one with the other. Consequently as one pocket 12 is receiving a carton to be treated the next succeeding pocket is having a carton ejected therefrom.

The shaft on which the wheel 11 is mounted is indicated by the reference numeral 55 and has an end portion thereof supported by the bearings 32 as shown in Figure 5. On the shaft 55 there is provided a gear 56 that is in constant mesh with a gear 57 provided on one end of a jack shaft 58 (see Figure 3).

For driving the shaft 58 intermittently, or substantially step-by-step from the driven shaft 31, there is provided on the shafts 31 and 58 complemental elements forming a Geneva movement, said complemental elements including the wheel 59 carried by the shaft 31 and a slotted wheel 60 carried by the shaft 58. Wheel 59 has between the flanges thereof the usual tooth pin 61 that engages successively the slots provided in the usual manner in the wheel 60 as clearly shown in Figure 6. Thus it will be seen that the wheel 11 is caused to revolve in a step-by-step manner so that the wheel will be at rest during the actual positioning of a carton within a pocket 12 and the ejecting of a treated carton from a second pocket 12.

To insure that the wheel 11 will be positively steady for each period of rest, and thereby assure a smooth operation of the device, there is also provided on the shaft 55 a notched wheel 62. The notches in the periphery of the wheel 62 correspond in number to the number of pockets 12 on the wheel 11 and cooperable with the notches in the wheel 62 is a spring biased dog 63.

As shown in Figure 4 dog 63 is pivotally mounted on a suitable post 64 provided therefor and has the bill 65 normally urged upwardly to en-

gage a notch in the periphery of the wheel 62 through the medium of a suitably provided spring 66.

Adjacent the bill end thereof dog 63 is equipped with a roller 67 that is engageable with the periphery of a cam 68 on the shaft 31. Thus it will be seen that cam 68 cooperates with the roller 67 for moving the bill 65 of the dog 63 out of engagement with a notch in the wheel 62 at the point of operation necessary to release the shaft 55 for revolving the wheel 11 the necessary fraction of a revolution for bringing the proper pocket into alignment with the respective ejector arm 22 and feed arm 33.

The driven shaft 31 is driven from an electric motor 69 mounted on the stand 16 and in driving engagement with the shaft 31 through the medium of gearing suitably provided in a gear box 70, and intermeshing gears 71, 72.

The casing 5 is filled to a proper level with wax and to maintain a constant level of the wax within the casing 5 there is provided on the discharge end of the feed pipe 73 a valve 74 equipped with a float 75. Valve 74 as shown in Figure 7 connects the pipe 73 with a discharge pipe 76 that extends downwardly to terminate at its discharge end at a point above the bottom of the casing 5.

For maintaining a supply of wax, in liquid form, to the casing 5 there is suitably provided a reservoir 77 (see Figure 1), in which the block of wax or paraffin is placed. Leading from the bottom of the reservoir 77 is the aforementioned feed pipe 73. The reservoir 77 is provided with a vertical transverse partition 78 in the form of a strainer and the block of wax or paraffin is placed in the reservoir at one side of the strainer, the liquid wax passing through the strainer 78 to flow from the reservoir 77 through the conduit 73 to the casing 5.

For melting the wax within the reservoir 77 there is provided a steam coil 79. Also to maintain the wax in a fluid or liquid state as it passes through the conduit 73 coil 79 has leading therefrom and extending through the conduit 73 a pipe 80.

Also provision is made for making use of the warm air above the paraffin level 13 in the casing 5 for freeing a treated carton of excessive wax or paraffin as the carton is being ejected from a pocket 12.

Such means as above referred to comprises a blower casing 81 suitably mounted on the top of the casing 5 and having an inlet conduit 82 that extends into an opening in the top of said casing. The top of said casing adjacent to said opening is provided with a pair of opposed oppositely facing brackets 83 as shown in Figure 9, and engageable with these brackets 83 are lugs 84 provided on opposite sides of an inlet pipe extension 85 that is positioned within the casing 5. Obviously to engage the lugs 84 with the brackets 83, pipe section 85 is rotated in one direction, and to disengage the lugs 84 from the brackets 83 pipe section 85 is rotated in a reverse direction. Thus provision is made whereby the pipe 85 may be used or not as found desirable and when used can be quickly secured in alignment with the blower intake 82. When used pipe 85 terminates at its lower end slightly above the level of the paraffin bath as shown in Figure 7.

It will thus be seen that when the device is in operation warm air from above the level of the liquid paraffin will, through the medium of the blower 81, be drawn up through the pipe 85 and forced by the blower downwardly through the outlet 86 of the blower onto the carton resting on the track 23. This warm air will serve to remove excess paraffin from the carton.

In connection with the above it will be seen that the outlet 86 of the blower extends downwardly through the top of the casing 5 and at its lower end merges into a suitably shaped shield 87 provided to prevent a too great diffusion of the warm air and thereby insuring the obtaining of the full benefits of the warm air blast in the removing of this excess paraffin.

For maintaining the paraffin within the casing 5 in suitable liquid state there is suitably provided within the casing 5 the steam coils 88, coils 88 and 79 being connected in any suitable manner with any suitable source of steam supply.

To insure the retaining of the cartons in a vertical position on the track 23 there is suitably mounted above the receiving end of the track, as shown in Figure 5, a carton-contact strip 89 having a suitably offset portion adapted to yieldably bear against the uppermost end of the carton. Also to maintain a suitable restraint on the carton as it approaches the incline 23a of the track 23 there is suitably mounted so as to extend into the upper portion of the opening 8 a relatively shorter carton-contact member 90 that has an offset end adapted to be adjusted downwardly as conditions may require through the medium of a suitably provided adjusting screw 91.

A suitable frame structure indicated generally by the reference numeral 92 is provided for supportng the aforementioned feed conveyor 10 and also for supporting a conveyor 93 disposed above and parallel to the conveyor 10. Conveyor belt 93 engages the uppermost ends of the cartons 40 on the conveyor 10 and serves to maintain the cartons perpendicularly on the conveyor 10 and to insure a proper "crowding" of the cartons as they feed from the carton-forming machine to the paraffining device of my invention.

Also there are provided in connection with the conveyor 10 a pair of parallel side rails 94 between which the cartons 40 pass and these rails serve to prevent the cartons from working laterally in either direction out of line.

The conveyor 10 is adapted to be driven in any suitable manner from the outlet conveyor (not shown) of the carton-forming machine, also not shown. Drive from the conveyor 10 is transmitted to the conveyor belt 93 through the medium of suitable chain and sprocket mechanism indicated generally by the reference numeral 95.

The extension 23a of track 23 extends outwardly of the casing 5 between a pair of opposed side walls 96, 97 which at their outer ends merge into a front wall 98 paralleling a wall 99 that forms with the wall 98 a receiving chamber for the cartons 40 as they pass from the track extension 23a.

In connection with the above it will be noted that the wall 99 curves rearwardly and in the direction of the track extension 23a at its upper edge, merging into an inclined abutment 100 that extends upwardly from the lower end of the track extension 23a. It will thus be seen that as the cartons 40 move downwardly on the track extension 23a they come into abrupt contact with the abutment 100 with the result, as clearly shown in Figure 5, the cartons are caused to upset and in an inverted position pass downwardly between the walls 98 and 99 so that in an upright position they are received on an endless conveyor 101.

Disposed beneath the receiving end of the conveyor 101 is a pan 102 which at the side thereof nearest to the casing 5 is extended upwardly a considerable distance as at 103. The wall 103 at its upper edge is provided with a flange extension 104 that at its edge is suitably secured to the adjacent side of the casing 5 below the opening 8 and forms a drip-shield for returning the paraffin drippings from the cartons 40 back to the casing 5 through an opening 105 provided in said wall of the casing 5 as clearly shown in Figure 5.

The pan 102 serves to receive the drippings from the upright cartons 40 as they come to rest on the conveyor 101.

Also accommodated within the pan 102 is a removable drip pan 106, the same being supported by suspension brackets 107 that depend from the side bars 108 forming part of the conveyor assembly 101.

Further in accordance with the present invention and as best shown in Figure 5, walls 98, 99 are provided with passages 109 and the track 23a is hollow so as to provide for a circulation of steam to the end that the paraffin on the cartons will not completely congeal at this stage of operation of the device.

Also in order to maintain the drippings within the pan 106 in a suitable fluid state a steam coil 110 extends into the pan 102 beneath the pan 106 and has suitable connections with the passages 109 in wall 98.

The conveyor assembly 101 embodies a series of parallel endless spring conveyor bands trained over suitable sheaves, and the upper ones of these bands are supported at intervals by cross bars 112.

Beneath the conveyor in proximity to the casing 5 there is disposed a pan 113 through which extends vertically one end of a pipe 114 that at its upper end is equipped with an elongated shell-like spray nozzle 115 provided for directing a spray of water upwardly and against the cartons for cooling the wax coatings of the cartons.

Obviously pan 113 will serve to catch the water admitted from the nozzle 15 and to provide for a continuous circulation of the water pipe 114 is connected to a pump 116 at the outlet end of the pump while a drain pipe 117 extending from the bottom of the pan 113 connects with the inlet side of the pump 116.

Also suitably arranged within the pan 113 is a refrigerating coil 118 that will serve to maintain the water at a very low temperature.

Immediately from this application of water thereto the cartons pass over nozzles 119 provided for subjecting the cartons to a cold air treatment, nozzles 119 being connected with a source of cold air supply.

For maintaining the cartons upright on the conveyor 101 there are provided in any suitable manner above the conveyor, and at opposite sides thereof, guide rails 120 of wire or other suitable material.

Also disposed in operative position to the conveyor 101 at the points where the cartons thereon are subjected to the aforementioned water and air sprays, is an inverted substantially U-shaped shield 121a.

To overcome any tendency of the cartons on the conveyor 101 to fall forwardly and thereby lay on the conveyor in a longitudinal direction there is provided at the upper end of an opening 121 in the wall 97 a suitable spring finger 122 that engages the upper end of the carton 40 as it passes through said opening, and in a manner clearly shown in Figure 1.

Means is also provided to prevent detrimental jamming of the machine in the event, for some reason or other, the cartons 40 should not properly pass from the track extension 23a onto the conveyor assembly 101. To that end there is provided adjacent the wall 96 a bracket structure 123 in which is journaled a vertical shaft 124. On the upper end thereof shaft 124 is provided with an arm 125 that is normally disposed in a position above the point of merger of the track extension 23a with the wall abutment extension 100, while on the lower end of the shaft 124 is a longer arm 126 that is disposed adjacent the forward end of the wall 96. The shaft 124 also has an arm 127 extending therefrom. Also mounted in proximity to the wall 96 is a switch box 128. A spring 129 is anchored at one end to the box 128 and is connected at its other end to the arm 127 and serves to normally urge the shaft 124 to rotate in a clockwise direction for positioning the arms 125 and 126 so that under circumstances hereinafter more fully explained one or the other of the arms will go into operation.

The arm 127 is connected through the medium of a suitable link 130 with one end of a bell crank 131. Bell crank 131 is pivotally mounted as at 132 on one end of the aforementioned switch box 128 and has a free arm extending into the box 128 to engage a mercury switch 133 suitably and pivotally mounted within the box 128 as shown in Figure 8.

From the above it will be seen that in the event a jamming of the cartons should occur either at the lower end of the track extension 23a or at the point where the cartons pass downwardly between the walls 98, 99 either the arm 125 in the first instance, or arm 126 in the second instance, would be contacted by the carton in such a manner as to cause the shaft 124 to swing against the action of spring 129. This would result in a swinging of the bell crank 131 in a direction to swing the switch 133 to a position interrupting the circuit to the motor 69, it being understood that switch 133 is suitably connected in circuit with the motor 69. Thus upon the interrupting of the circuit to the motor 69 in this manner the conveyors and the wheel 11 will be brought to a standstill thus preventing damage either to the machine or to the cartons.

When the cartons are again properly arranged, and the jam broken, switch 133 will be again tripped for completing the circuit to the motor 69 so that the device will again go into operation.

This application is a substitute for a corresponding application filed by me under date of March 11, 1938, and identified as Serial No. 195,387, the same having been allowed May 22, 1940, and now abandoned.

Having described the invention, what is claimed as new is:

1. In an apparatus for coating cartons interiorly and exteriorly, a casing having liquid paraffin therein to a suitable level, a wheel rotatable in the casing for passing cartons through the wax during rotation of the wheel, said wheel being provided on the periphery thereof with a circular series of carton-receiving pockets substantially open on all sides thereof, conveyor mechanism for feeding the cartons to said casing, a plunger for ejecting a carton from a pocket after the carton has been coated, motor driven

means for reciprocating the plunger, a second plunger for moving cartons from the conveyor mechanism into the pockets after the cartons have been ejected therefrom, spring means for actuating the second plunger, latch means for holding the second plunger retracted against the action of the spring means, trip neans actuated by a carton approaching the rear end of the conveying mechanism for releasing the latch means, coacting means on the two plungers for retracting the second plunger by retracting movement of the first plunger and means for rotating the wheel step by step from the motor driven means, said wheel remaining idle while the two plungers are engaging the cartons.

2. In an apparatus for coating cartons interiorly and exteriorly, a casing having liquid paraffin therein to a suitable level, a wheel rotatable in the casing for passing cartons through the wax during rotation of the wheel, said wheel being provided on the periphery thereof with a circular series of carton-receiving pockets substantially open on all sides thereof, conveyor mechanism for feeding the cartons to said casing, a plunger for ejecting a carton from a pocket after the carton has been coated, motor driven means for reciprocating the plunger, a second plunger for moving cartons from the conveyor mechanism into the pockets after the cartons have been ejected therefrom, spring means for actuating the second plunger, latch means for holding the second plunger retracted against the action of the spring means, trip means actuated by a carton approaching the rear end of the conveying mechanism for releasing the latch means, coating means on the two plungers for retracting the second plunger by retracting movement of the first plunger and means for rotating the wheel step by step from the motor driven means, said wheel remaining idle while the two plungers are engaging the cartons, said second plunger having a stop thereon for preventing movement of the cartons on the conveyor mechanism while one carton is being pushed by the plunger into a pocket.

3. In an apparatus for coating cartons interiorly and exteriorly, a casing having liquid paraffin therein to a suitable level, a wheel rotatable in the casing for passing cartons through the wax during rotation of the wheel, said wheel being provided on the periphery thereof with a circular series of carton-receiving pockets substantially open on all sides thereof, conveyor mechanism for feeding the cartons to said casing, a plunger for ejecting a carton from a pocket after the carton has been coated, motor driven means for reciprocating the plunger, a second plunger for moving cartons from the conveyor mechanism into the pockets after the cartons have been ejected therefrom, spring means for actuating the second plunger, latch means for holding the second plunger retracted against the action of the spring means, trip means actuated by a carton approaching the rear end of the conveying mechanism for releasing the latch means, coacting means on the two plungers for retracting the second plunger by retracting movement of the first plunger and means for rotating the wheel step by step from the motor driven means, said wheel remaining idle while the two plungers are engaging the cartons, and means for holding the wheel against movement at the end of each step of its movement.

4. In an apparatus for coating cartons interiorly and exteriorly, a casing having liquid paraffin therein to a suitable level, a wheel rotatable in the casing for passing cartons through the wax during rotation of the wheel, said wheel being provided on the periphery thereof with a circular series of carton-receiving pockets substantially open on all sides thereof, conveyor mechanism for feeding the cartons to said casing and to the pockets of said wheel, feeding mechanism arranged in operative position to said conveyor and casing for successively transferring the cartons from said conveyor to succeeding pockets as the wheel rotates, ejector mechanism for ejecting a carton from a pocket simultaneously with the positioning of a carton within a pocket, conveyor means arranged at one side of the casing for receiving the cartons ejected from the wheel pocket, motor actuated means for rotating the wheel step by step and for operating the feeding and ejector means, and means extending over the conveyor means which receive the cartons ejected from the wheel, for stopping the motor, when such means are engaged by a piling up of the cartons leaving the wheel.

5. In a device of the character described, a casing adapted to hold liquid paraffin to a desired depth, a wheel rotatably mounted within said casing with the lower portion of the wheel passing through the paraffin, said wheel being provided on the periphery thereof with a continuous circular series of radially extending pockets open substantially on all sides thereof and adapted to receive cartons for passing the cartons through the paraffin, mechanism for driving the wheel including means for rotating the wheel step by step and for securing the wheel positively against movement in either direction when the wheel is at rest incidental to the reception and discharge of cartons relative to the pockets, said casing being provided at one side thereof with an entrance opening, and at an opposite side thereof with a discharge opening, a conveyor disposed alongside of the casing for feeding cartons to be treated to a position opposite the first-named opening reciprocating feeding means arranged substantially at right angles to said conveyor and said casing and including a member movable across the conveyor for engaging a carton to transfer the carton from the conveyor to the first-mentioned opening in the casing and into one of the pockets of said wheel, ejector means paralleling said feed means and including a reciprocating member movable through the first-mentioned opening to engage a treated carton for ejecting the latter from said pocket, mechanism for operating said feeding and ejecting means in synchronism, a track extending outwardly out of the casing through the opening in the second-named side of the casing and arranged to receive cartons ejected from said pocket, said track having an inclined portion and an abutment at the lower end of said inclined portion of the track for upsetting the cartons as they pass from said track, a conveyor arranged in operative position to said abutment for receiving the upset cartons, a motor for operating the wheel actuating means and the feeding and ejector actuating means, a movable member extending over a portion of the track and located above single cartons moving over the track but engaged by a carton if the cartons should pile up as the reach the casing, and means actuated by movement of said movable member for stopping the motor.

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