

Feb. 16, 1926.

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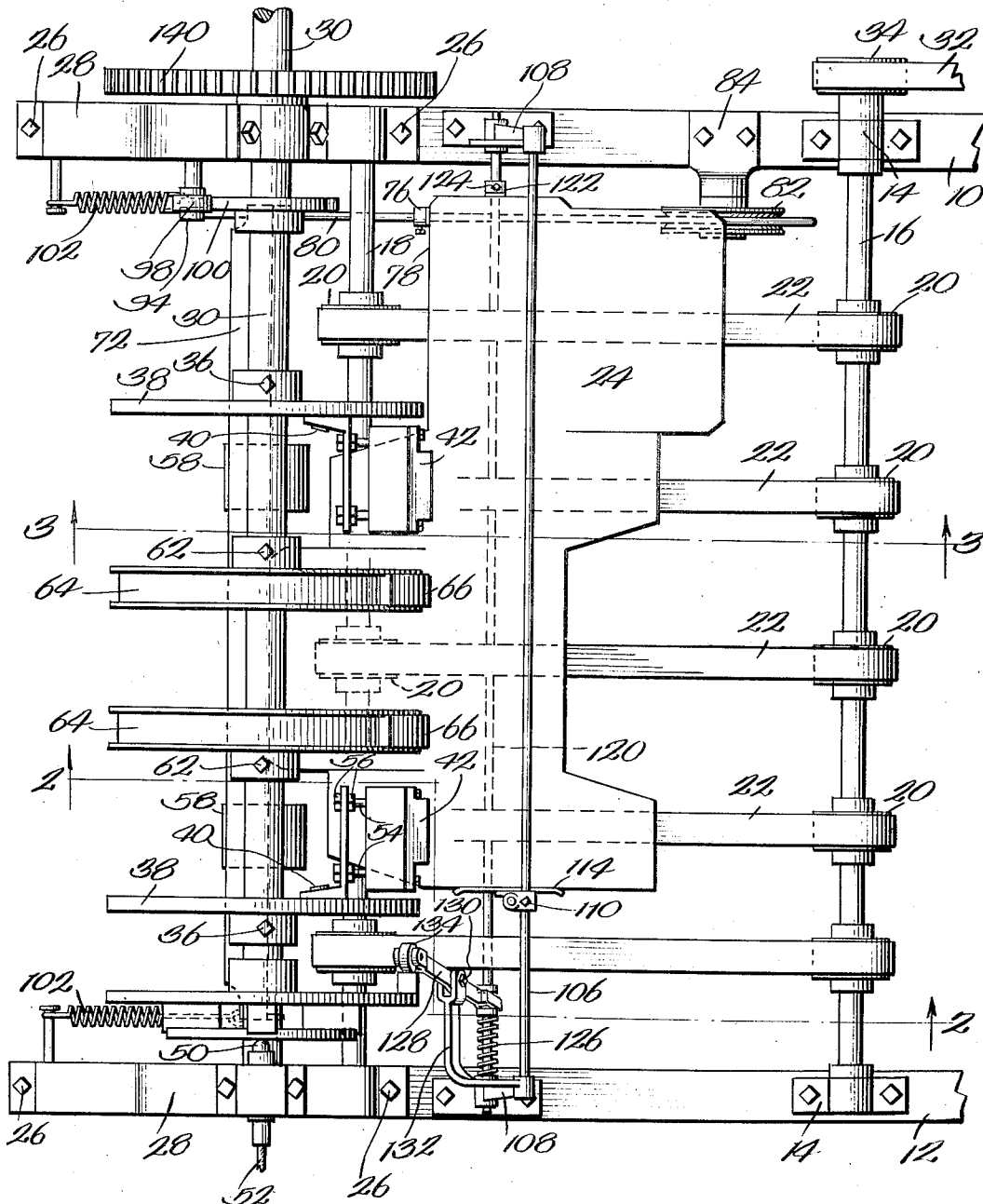
F. A. BEISEL

CARTON SPOT DEWAXER

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3 Sheets-Sheet 1

Fig. 1.



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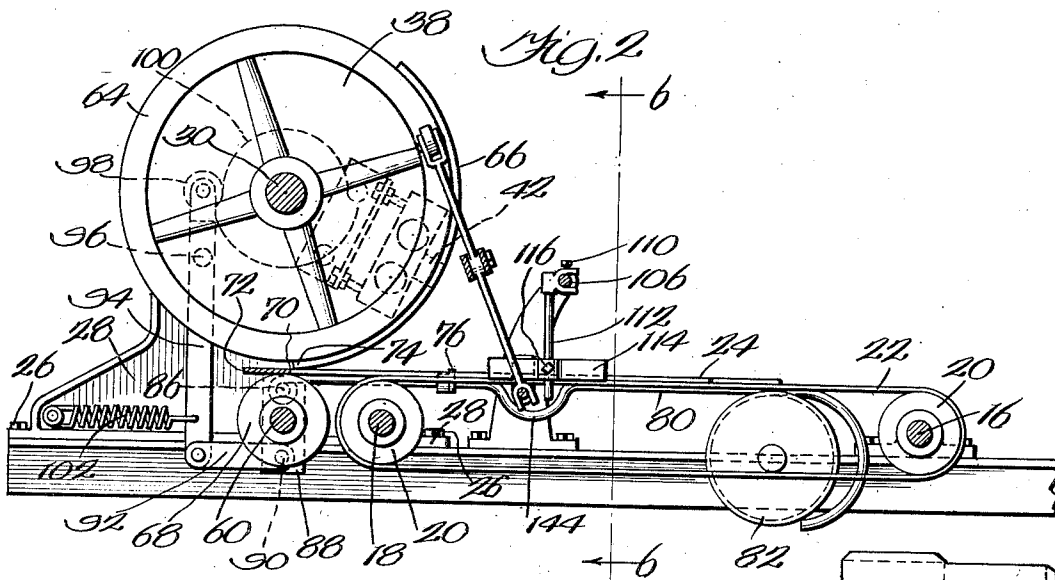
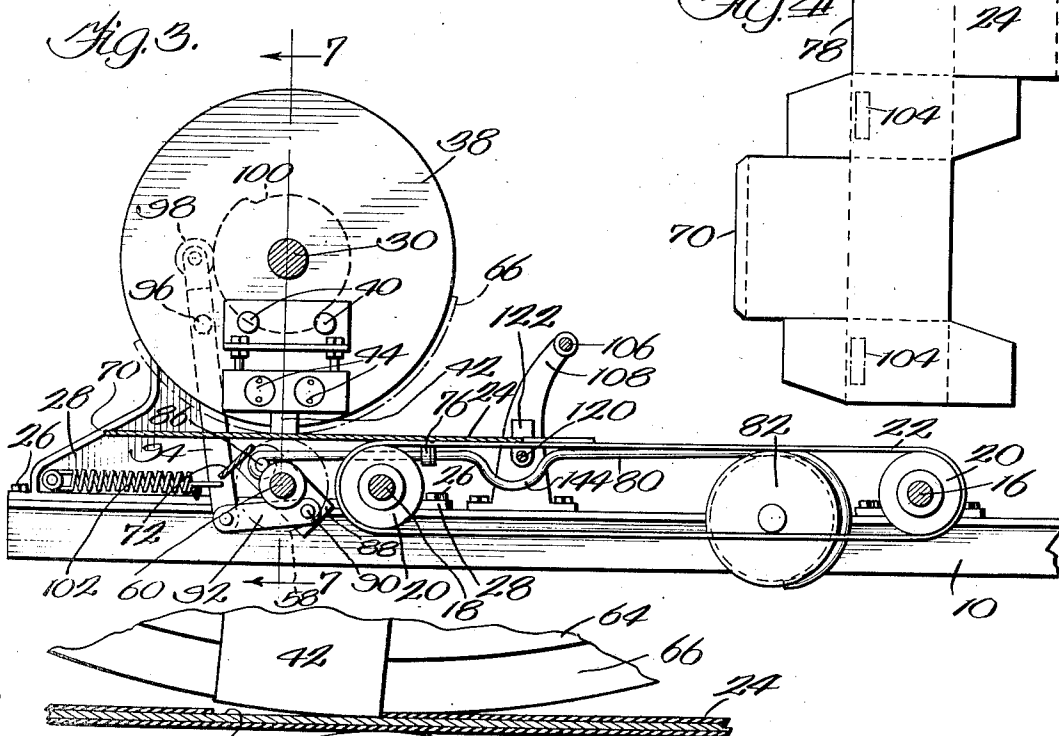
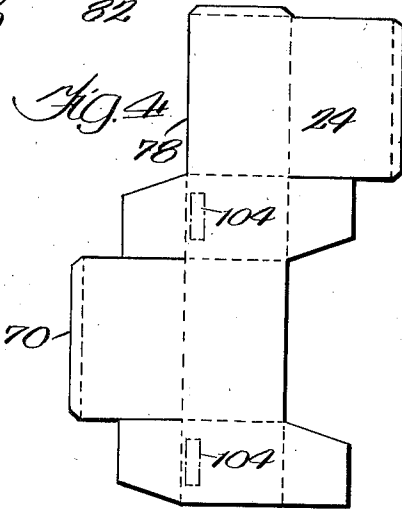
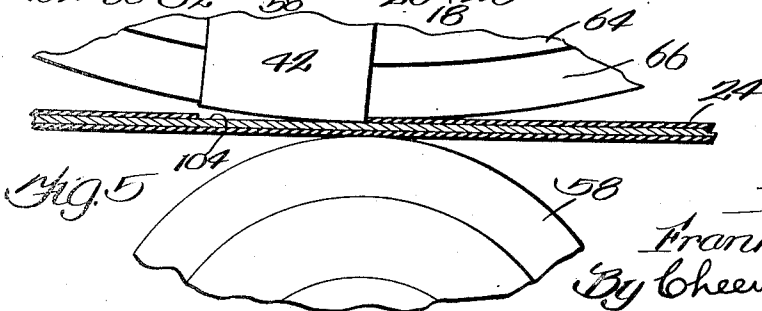
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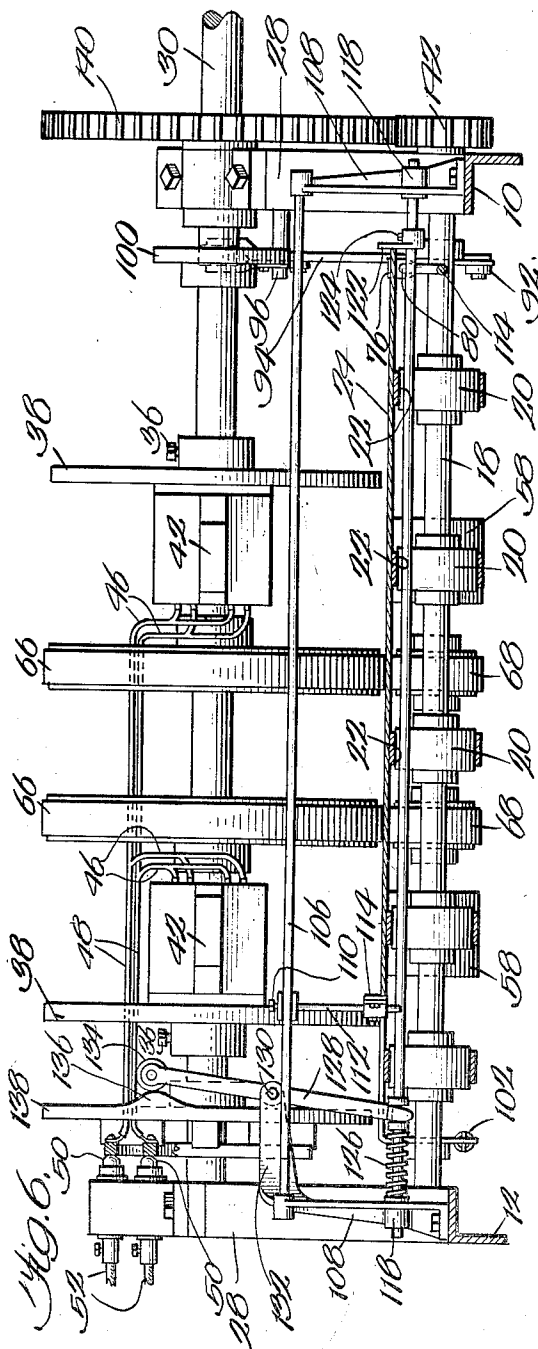
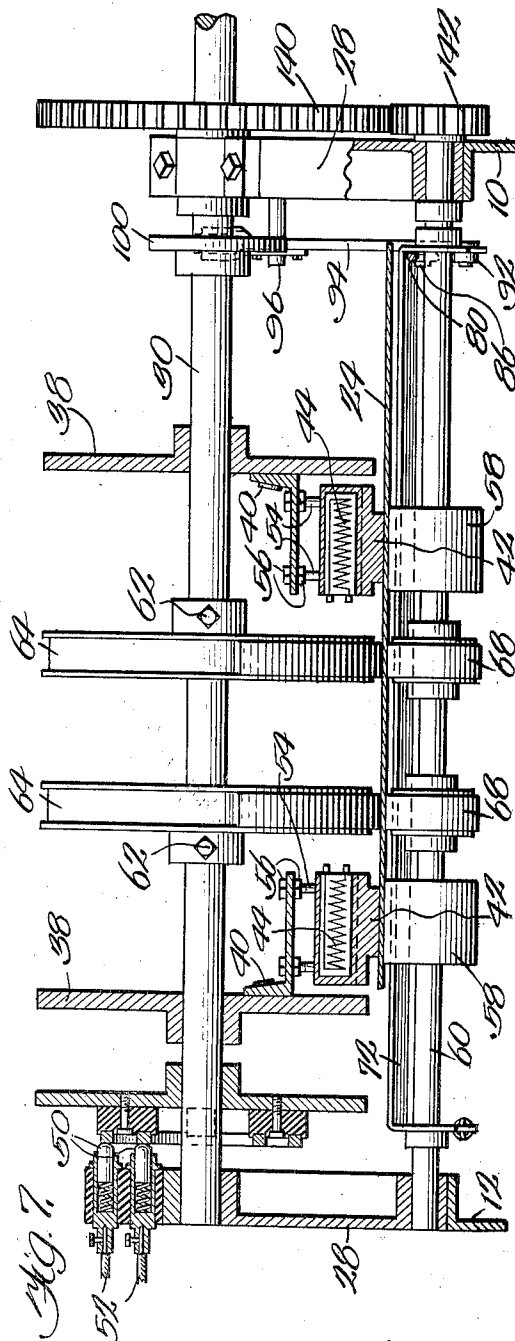
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CARTON SPOT DEWAXER

Filed Feb. 14, 1925

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Inventor:
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UNITED STATES PATENT OFFICE.

FRANK A. BEISEL, OF MENASHA, WISCONSIN, ASSIGNOR TO MENASHA PRINTING AND CARTON COMPANY, OF MENASHA, WISCONSIN, A CORPORATION OF WISCONSIN.

CARTON-SPOT DEWAXER.

Application filed February 14, 1925. Serial No. 9,363.

To all whom it may concern:

Be it known that I, FRANK A. BEISEL, a citizen of the United States, residing at Menasha, in the county of Winnebago and State of Wisconsin, have invented a certain new and useful Improvement in Carton-Spot Dewaxers, of which the following is a specification.

This invention relates to water-proofed containers for merchandise, more specifically paraffine cartons used in the vending of various sorts of food products, sometimes inherently more or less moist as in the case of ice cream, cottage cheese, etc. It is well understood in the art that such cartons can be prepared and then substantially the entire surface of one side of one or more flaps be de-paraffined for the purpose of sticking the flaps together to seal the package. It is, however, not always necessary or desirable to remove a large area of paraffine material from a surface portion of a carton in order to produce sufficient sealing for all practical purposes and the object of this invention is to provide a machine through which carton blanks can be passed which will efficiently remove the paraffine coating from specific, predetermined points only on the surface of the carton, either to allow for sealing or what is just as important provides spaces on which flavor titles or other descriptive matter relating to the contents of the particular parcel can be printed or written.

The further object of the invention is to provide such a machine which can be readily adjusted to handle carton blanks of various sizes and to vary the position of the dewaxed spots on the material passed through the machine.

The invention consists in mechanism for attaining the foregoing and other objects; which can be easily and comparatively cheaply made; which is highly satisfactory in use and is not readily liable to get out of order. More particularly the invention consists in numerous features and details of construction which will be hereafter more fully set forth in the specification and claims.

Referring to the drawings in which like numerals designate the same parts throughout the several views:

Figure 1 is a plan view of a machine illustrating this invention in its preferred form.

Figure 2 is an end view taken on the irregular line 2—2 of Figure 1.

Figure 3 is another end view taken on the line 3—3 of Figure 1.

Figure 4 is a plan view of one of many forms of carton blanks which may be passed through and operated upon by the machine.

Figure 5 is an enlarged, detail end view of a dewaxing mechanism at the completion of the dewaxing operation.

Figure 6 is a side elevation taken on the line 6—6 of Figure 2.

Figure 7 is a central, sectional, side view, taken on the line 7—7 of Figure 3.

The mechanism illustrating this invention is mounted upon any conventional form of machine frame, two opposite side members 10 and 12, appearing in Figure 1. Extending across these side members and suitably journaled thereon are two spaced, parallel shafts 16 and 18 equipped with multiple pulleys 20 carrying a multiplicity of parallel, spaced, work-feeding tape belts 22 of conventional construction adapted to carry cartons 24 to be operated upon from right to left through the machine as viewed in Figures 1, 2 and 3.

Rigidly attached to the frame members 10 and 12 by any suitable means, as, for instance, bolts 26, and at the left of the tape belts 22 just described, are parallel brackets 28 of substantial height, having journaled therein main shaft 30 driven by any suitable source of power, located outside the machine but not entering into this invention and therefore not shown. The tape devices 22 may be driven in any conventional manner desired, either from the same source of power or as conventionally shown in Figure 1 by a belt 32 and pulley 34 mechanism in operative relation with some other source of power not shown.

Detachably secured to shaft 30 by any suitable means as, for instance, set screws 36, are a multiplicity of separated disks 38 each having secured to it by any suitable means, as, for instance, the screws 40, a dewaxing tool 42, preferably but not necessarily an electrically controlled one, heated by the adjacent electric coil 44 supplied

with current through conveniently disposed wires 46 in communication with commutator wires 48 constantly supplied with current through a conventional form of commutator 50 in turn supplied through electric wires 52 leading away to any suitable source of electric current not shown. This dewaxing tool and its electric coil are preferably, but not necessarily, adjustable toward and from the carton 24 to be worked upon by means of proper manipulation of the bolts 54 and sets screws 56 thereon, clearly appearing in Figure 7. In actual dewaxing position, shown in Figure 7, the dewaxing tools 42 take bearing on the passing carton 24 while it is supported on rollers 58, carried by a shaft 60 journaled in the brackets 28.

Also detachably mounted on shaft 30 by any suitable means, as, for instance, set screws 62, are feed pulleys 64, equipped with circumferential, segmental carton engaging pads 66 adapted when operating, as hereafter described, to press the carton 24 passing through the machine onto registering pulleys 68 on shaft 60. The segments 66 are of cushion material adapted to readily engage the carton 24 and each segment is located on its pulley 64 in parallel, angular position so that the segments on different adjacent wheels move in unison through similar, parallel paths. These segments are so placed as shown in Figures 2 and 3 that they engage the carton during the time the dewaxing tool is in engagement with the carton and they are preferably so located, as shown, that the dewaxing tool 42 is at approximately the middle of their circumferential lengths as they extend over the wheels 64. However, by properly using the adjusting nuts 36 and 62, the relative positions of the dewaxing tools and these carton engaging pads 66 may be changed to any extent which may be required either by the shape of the particular carton 24 which is to be handled, or by other conditions of work.

In the preferred method of operation, the foremost edge 70 of the carton 24, being operated upon by the machine, is, on entering the machine moved up into engagement with a stop 72 and held against that stop until the front edge 74 of pad 66 is in register with it, as shown in Figure 2, whereupon the stop 72 is released as hereafter described, with the result that the rotating pad 66 carries the carton 24 under the dewaxing tool or tools 42 in proper position for desired results.

In order to insure the carton 24, which is of substantial length across the machine, as shown in the drawings, being maintained in proper alignment across the machine, another stop 76 is positioned to be engaged by a different edge 78 of carton 24, this stop 76 being operatively connected to be

released in unison with stop 72, heretofore referred to.

In accomplishing the desired result, just described, stop 76 is mounted on a horizontal rod 80 at the top of the machine, as viewed in Figure 1, one end of the rod resting in and being slidable in the surface of a V-shaped pulley 82, mounted at 84 on frame member 10 of the machine. The opposite end of rod 80 is pivotally connected to a crank pin 86 on a link plate 88, journaled on shaft 60, with which stop 72—which is a bar extending across the machine—is rigidly connected. The lower end of this link plate 88 has another crank pin 90, carrying a connecting rod 92 pivotally attached at its other end to the lower portion of a vertically disposed lever 94. Near the upper portion of this lever 94, it is pivoted on a stud 96 on an adjacent bracket 28, and the extreme upper end of the lever 94 carries a roller 98 traveling on a cam 100 rigid on shaft 30. Roller 98 is held in engagement with this cam by a retractile spring 102. Cam 100 is so shaped that in the position of Figure 2, stops 72 and 76 oppose the passage of a carton 24 through the machine, while in the position of Figure 3, both stops are dropped down out of the way of the carton so passing. The cam is so shaped that it returns the parts to the position of Figure 2 after each carton has passed under the dewaxing mechanism (shown in full operation in Figure 3) and is thence passed on to the left, as shown in Figure 3 out of the machine. Figure 5 shows the dewaxed spot 104 produced on the carton 24 as the dewaxing tool 42 engages it. These particular spots 104 which are on the body of the carton, as distinguished from flaps, are located for reception of flavor titles, such as "Lemon," "Strawberry" or the like relating to the ice cream supposed to ultimately go in this particular carton.

The machine of this invention also includes means for positioning the cartons 24 transversely of the machine as they come into it. This result is accomplished by providing the transversely extending rod 106, sustained well above the work on brackets 108 rising from the side frames, this rod carrying slidably adjustable thereon under the control of a nut 110 a depending stop rod 112 having an adjustable stop plate 114 selectively positionable under the control of an adjusting nut 116, said plate 114 being adapted to bear against and position the lower side of the carton 24 as it appears in Figure 1. By using the nut 110, the stop mechanism may be moved to any desired point along rod 106, and by adjusting nut 116, stop plate 114 may be elevated or lowered as may be required.

Slidable longitudinally through bearings

118 in the brackets 108 is a rod 120 carrying a stop 122 engaging the upper side of the carton 24 as viewed in Figure 1, said stop being adjustable on the rod through the agency of a conventional set screw 124. This rod 120 is normally shoved by a spring 126 away from the carton blank 24 to thereby permit ready entrance of the carton into position between the stops 114 and 122. It is automatically moved in the opposite direction by means of a lever 128 pivoted at 130 on a suitable bracket 132 provided for the purpose, whenever a roller 134 on the upper end of the lever is engaged momentarily by a cam 136 on a wheel 138 rigid upon shaft 30. This cam 136 is of such a short, effective length as to cause the stop 122 to have what amounts to a tapping action on the side of passing cartons 24 to move each one in succession against stop 114.

As clearly shown in Figure 6, shafts 30 and 60 are driven at proper speeds with reference to each other by a gear 140 on shaft 30 meshing with a pinion 142 on shaft 60. In the complete operation of the machine, an operator standing at the right of the machine, as viewed in Figure 1 places cartons 24, one after the other, on the tape belts 22 by which the carton is carried along up against the stops 72 and 76, each said carton being tapped into proper longitudinal position crosswise of the machine by the stop 122 on rod 120. The speed of the tape belts 22 is such that one carton is always held against these stops 72 and 76, as the front edges 74 of the pad 66 approach the position of Figure 2. When the last mentioned position is reached, cam 100 operates roller 98 and attached mechanism to move the stops 72 and 76 from the position of Figure 2 to that of Figure 3 thereby permitting the pads to carry the carton under the dewaxing tools 42 which, on reaching the position of Figure 3, do their work and pass on with resultant removal of that particular carton from the machine and the returning of the parts to the original position of Figure 2, ready for work upon another carton.

The dewaxing tools 42 may be of any selected size and shape, different tools being substitutable if desired on releasing the nuts 56 and making the necessary temporary detachment from the electric wiring system.

By properly selecting the size and shape of dewaxing tool 42 to be used and properly adjusting the wheels 38 and 64 and the various stops, as described, the operator can make this machine dewax spots of almost any predetermined size at almost any predetermined point on the cartons which are to be passed through the machine, the result being that one machine is usable for a very large variety of work.

The dewaxed spots are shown in the drawing as located inside the border edges of

the carton 24, something which has heretofore been impossible in machines of the prior art.

The bend 144 in rod 80 is merely to accommodate 120 without interference between the two rods.

Attention is called to the fact that the width of each dewaxed spot 104 is substantially less than the width of carton blank passed through the machine measured along the line of travel of the carton past the heat applying device, viz.: the dewaxing tool 42, this as distinguished from devices of the prior art in which a carrier and a dewaxing tool are so arranged that as the carrier propels a carton over the dewaxer, the dewaxer removes wax from a narrow strip extending entirely across the line of travel of the carton over the dewaxer. Because of this feature, it is possible to locate the dewaxed spots 104 inside all borders of the carton, a highly important feature when the dewaxed spot is to be used for flavor or other descriptive printing.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In mechanism of the class described, means feeding a waxed article along, dewaxing means to remove wax from a spot of predetermined size and location on the article, and means for adjusting the feeding means to vary the position of the dewaxed spot on the article.

2. In mechanism of the class described, means for feeding a waxed article along, dewaxing means to remove wax from a spot of predetermined size and location in the article, and means for adjusting the dewaxing means to vary the position of the dewaxed spot on the article.

3. In mechanism of the class described, means for feeding an article along, a revolving dewaxing tool adapted to progressively contact with waxed articles carried by the feeding means to remove wax from a spot of predetermined size and location on each article, and means for angularly adjusting said dewaxing tool about its axis of revolution to vary the position of the dewaxed spot on each article.

4. In mechanism of the class described, means feeding a waxed article along and means applying heat to remove wax from a spot of predetermined size and location on the article, and means for adjusting the feeding means to vary the position of the dewaxed spot on the waxed article.

5. In mechanism of the class described, means feeding a waxed article along and means applying heat to remove wax from a spot of predetermined size and location on the article at a point inside all outside border lines of the article, and means for adjusting the feeding means to vary the

position of the dewaxed spot on the waxed article.

6. In mechanism of the class described, means feeding a waxed article along and means applying heat to remove wax from a spot of predetermined size and location on the article, and means for adjusting the position of the heat applying means to other parts of the machine to vary the position of the dewaxed spot on the waxed article.

7. In mechanism of the class described, means feeding a waxed article along and means applying heat to remove wax from a spot of predetermined size and location on the article at a point inside all outside border lines of the article, and means for adjusting the position of the heat applying means to other parts of the machine to vary the position of the dewaxed spot on the waxed article.

8. In mechanism of the class described, means feeding a waxed article along and means applying heat to remove wax from a spot of predetermined size and location on the article, means for adjusting the feeding means to vary the position of the dewaxed spot on the waxed article, and means for adjusting the position of the heat applying means to other parts of the machine to vary the position of the dewaxed spot on the waxed article.

9. In mechanism of the class described, means feeding a waxed article along and means applying heat to remove wax from a spot of predetermined size and location on the article at a point inside all outside border lines of the article, means for adjusting the feeding means to vary the position of the dewaxed spot on the waxed article, and means for adjusting the position of the heat applying means to other parts of the machine to vary the position of the dewaxed spot on the waxed article.

10. In mechanism of the class described, a traveling dewaxing tool, a stop adjacent to the path of travel of said tool, means urging an article to be dewaxed against said stop, automatic means to release said stop, and means for then carrying the article to be dewaxed into operative engagement with the dewaxing tool.

11. In mechanism of the class described, a traveling dewaxing tool, a pair of stops out of line crosswise and out of line lengthwise of the article to be dewaxed, adjacent to the path of travel of said tool, means urging an article to be dewaxed against said stops, automatic means to release said stops, and means for then carrying the ar-

ticle to be dewaxed into operative engagement with the dewaxing tool.

12. In mechanism of the class described, a rotatable wheel carrying a dewaxing tool, a parallel wheel carrying a segmental pad to engage and feed an article to be treated under the dewaxing tool and means selectively varying the angular positions of said wheels and their distances apart.

13. In mechanism of the class described, in combination, means feeding a carton along, an elongated stop extending across the path of the carton, a rod extending from the first stop at right angles thereto along the carton, a second carton engaging stop on the bar remote from the first stop and a single means moving both the stops out of the way of a carton on the feeding means.

14. In mechanism of the class described, in combination, means feeding a carton along, an elongated stop extending across the path of the carton, a rod extending from the first stop at right angles thereto along the carton, a second carton engaging stop on the bar remote from the first stop and a single means operating on and at the first stop moving both the stops out of the way of a carton on the feeding means.

15. In mechanism of the class described, in combination, means feeding a carton along, an elongated stop extending across the path of the carton, a rod extending from the first stop at right angles thereto along the carton, a second carton engaging stop on the bar remote from the first stop, a single means moving both the stops out of the way of a carton on the feeding means, means positioning a carton on the feeding means parallel to the first stop and automatic means simultaneously operating the stops and positioning means.

16. In mechanism of the class described, in combination, means feeding a carton along, an elongated stop extending across the path of the carton, a rod extending from the first stop at right angles thereto along the carton, a second carton engaging stop on the bar remote from the first stop, a single means operating on and at the first stop moving both the stops out of the way of a carton on the feeding means, means positioning a carton on the feeding means parallel to the first stop and automatic means simultaneously operating the stops and positioning means.

In witness whereof, I have hereunto subscribed my name.

FRANK A. BEISEL.