No. 854,075. PATENTED MAY 21, 1907.

F. W. BURPEE.

CAN SALTING MACHINE.

APPLICATION FILED MAR. 1, 1905. RENEWED APR. 8, 1907.

4 SHEETS—SHEET 1.

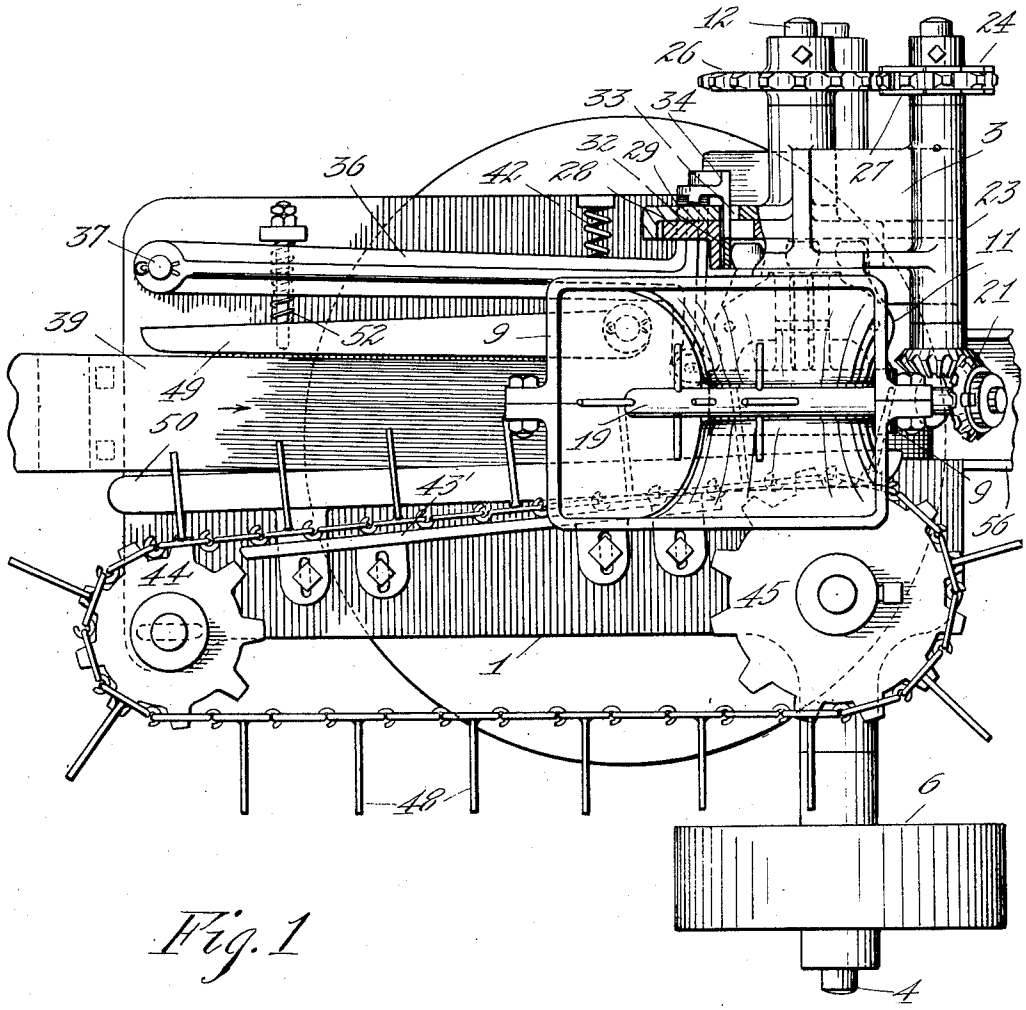


Fig. 1

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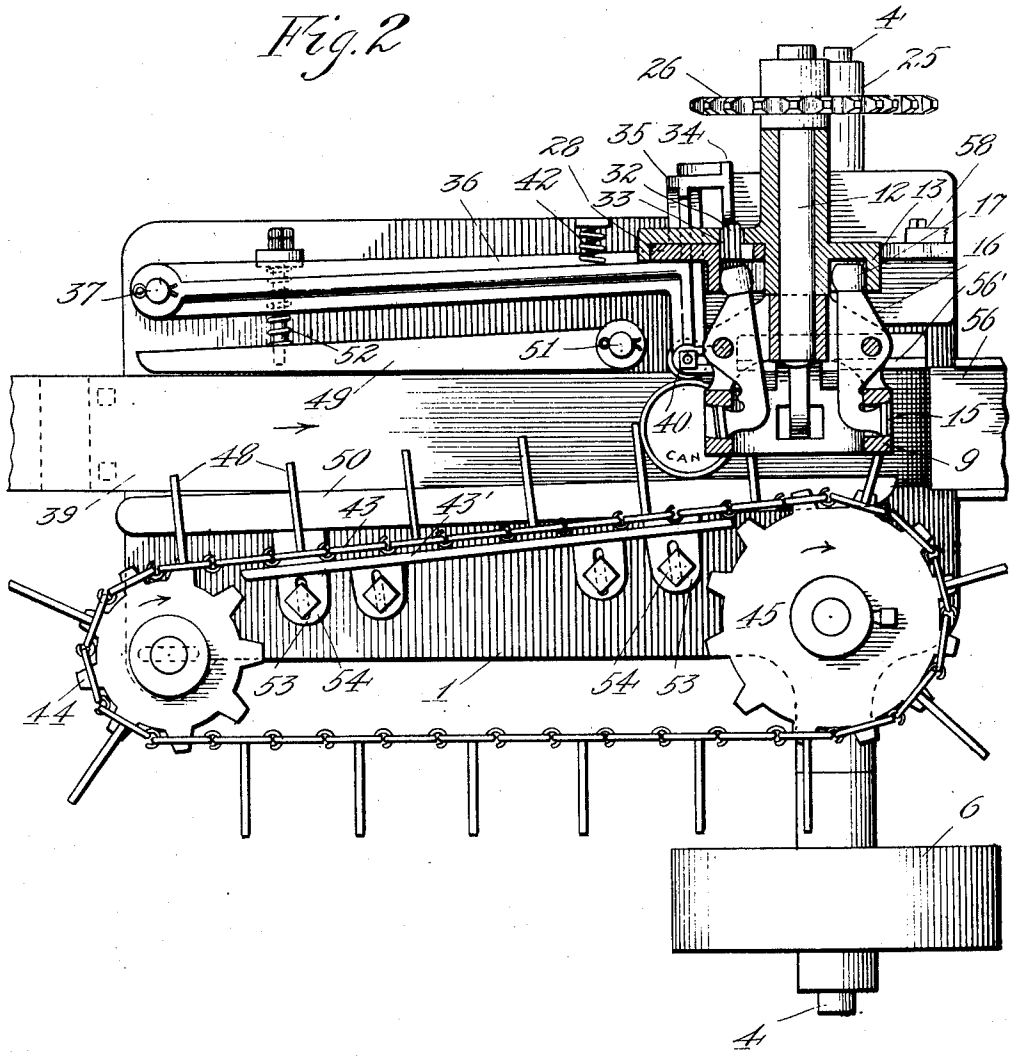
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4 SHEETS—SHEET 2.

Fig. 2



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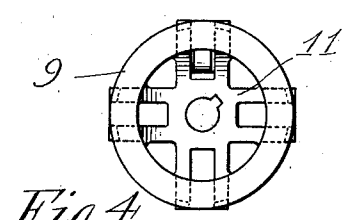


Fig. 4

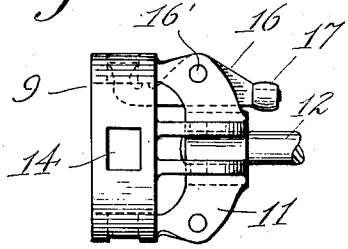


Fig. 5

Fig. 3

Fig. 6

Fig. 7

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4 SHEETS—SHEET 4.

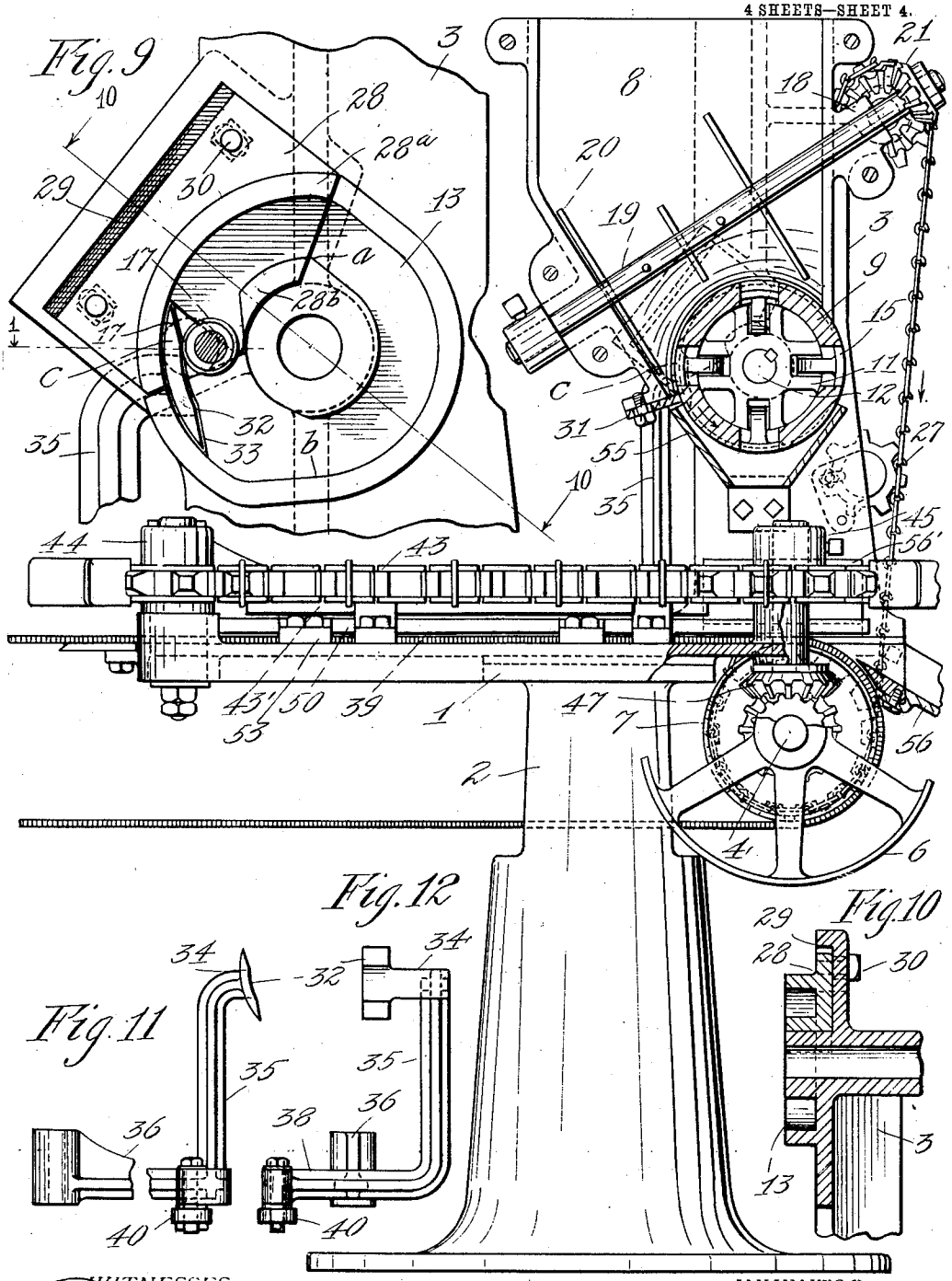


Fig. 8

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UNITED STATES PATENT OFFICE.

FRANK WATTS BURPEE, OF BELLINGHAM, WASHINGTON, ASSIGNOR TO BURPEE AND LETSON, LIMITED, OF BELLINGHAM, WASHINGTON, A CORPORATION OF WASHINGTON.

CAN-SALTING MACHINE.

No. 854,075. Specification of Letters Patent. Patented May 21, 1907.

Application filed March 1, 1905. Renewed April 8, 1907. Serial No. 367,107.

To all whom it may concern.

Be it known that I, FRANK WATTS BURPEE, a citizen of the Dominion of Canada, but who have declared my intention of becoming a citizen of the United States of America, residing at Bellingham, in the county of Whatcom and State of Washington, have invented certain new and useful Improvements in Can-Salting Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in salting machines of that type designed to deposit measured quantities of salt into cans prior to the packing thereof, and the primary object thereof is the production of a simplified and improved construction in which the waste of salt is reduced to a minimum.

Further objects and advantages will be set forth in the following description and those features of construction upon which I desire patent protection, defined in the appended claims.

In the accompanying drawings in which like numerals of reference indicate like parts throughout the several views: Figure 1 is a plan view of my improved machine showing the cam for operating the ejectors mounted on the salt carrier in partial section taken on line 1 of Fig. 9. Fig. 2 is a similar view of the machine in horizontal section taken on line 2—2 of Fig. 3 with the salt receptacle and the chute removed and shows a can being fed, the same having effected the withdrawal of the supplemental track section of the cam. Fig. 3 is an end elevation of the machine shown in partial section taken through the salt carrier and adjacent parts. Figs. 4 and 5 are detail views of the rotary salt carrier. Figs. 6 and 7 are detail views of the adjustable section of the cam for operating the salt ejectors. Fig. 8 is a view in side elevation of my improved machine, one section of the salt receptacle being removed, and parts being shown in section. Fig. 9 is a fragmentary view showing the cam for operating the salt ejectors, with the supplemental track section in place, the cam roller of one of said ejectors being shown engaging said section. Fig. 10 is a section taken on line 10—10 of Fig. 9, and Figs. 11 and 12 are detail views of the supplemental track section of the cam and the means for movably supporting the same.

In carrying out my invention I provide a suitable frame including a base 1, supported on a pedestal 2 and having a stand 3 secured to the upper face thereof adjacent one corner.

4 indicates the drive shaft journaled in suitable hanger brackets 5 secured to the rear end of said bar and on this shaft a suitable drive pulley as 6 and a driven pulley 7 are secured.

Supported on the stand 3 is a salt receptacle 8, the bottom of which is formed with a discharge opening and curved inwardly on an arc of a circle, and the side walls of said receptacle are curved inwardly so as to present opposing curved inclined faces tending directly to said discharge opening.

9 indicates a salt carrier which forms a closure for said discharge opening, the rim thereof extending thereacross and having its edges snugly engaging in grooves 10 extending along the side edges of said opening. The rim of this carrier has secured to one edge, the arms of a spider 11, which is fixed on a shaft 12 journaled in the stand 3 and projecting through a cam section 13 formed integral with the inner face of said stand. 14 indicates pockets formed in said rim and in these pockets ejectors 15 operate, the latter being in the form of plungers having angularly disposed stems 16 pivoted intermediate their ends as at 16′ between the arms of said spiders and having their free ends provided with rollers 17 arranged in the groove of cam 13. These plungers therefore form bottoms for the pockets 14 and as they have an arc like movement, by reason of the pivotal connection of their stems, I curve the side walls of said pockets accordingly.

The salt receptacle is preferably formed in two vertical sections, as shown, and at the contiguous edges thereof I provide the half bearings 18, which when the two sections are bolted together form bearings for the agitator shaft 19. This shaft occupies an inclined position and is provided with end and intermediate fingers 20 which serve to prevent packing of the salt about the rim of the salt carrier. The outer fingers are of greater

length than the intermediate ones and as shown in Fig. 8, have movement into the narrow spaces between the rim of the salt carrier and the forward and rear walls of the salt receptacle. On the upper end of this shaft 19 I provide the bevel gear 21 which meshes with a similar gear fixed on the shaft 22, the latter being journaled in an elongated bearing 23 secured to said stand. A sprocket wheel 24 is mounted on the outer end of this shaft and similar wheels, as 25 and 26 are provided on the shafts 4 and 12 respectively and a sprocket chain 27 passes over the gears 24 and 25 and has the forward run thereof engaging sprocket wheel 26. By this construction, power being applied to the drive shaft 4, by means of a belt (not shown) passing over pulley 6, movement of this shaft will be transmitted to the shafts 12 and 22, thereby simultaneously rotating the agitator in the salt receptacle and the salt carrier. As the salt carrier is revolved the rollers of the stems 16 are moved around in the groove of the cam, which being irregular in formation serve to raise and lower the plungers 15. The cam groove is so shaped that the respective rollers will engage the part *a* thereof when the pockets come to their upper position, so that the plungers 15 are lowered and salt thereby allowed to drop into the pockets. When the rollers reach the point *b* of the track they are raised so as to move the plungers through their pockets to eject the salt therefrom.

28 indicates an adjustable cam section (see Figs. 6—7—9 and 10) which is formed with the flanges 28^a and 28^b forming continuations of similar flanges of the stationary cam section 13, and as this section 28 is adjusted in its guideway 29, formed on the stand 3, to and from the center of the cam, the outward movement of the rollers when engaging between said flanges 28^a and 28^b will obviously be varied and consequently a greater or less degree of movement, as the case may be, will be imparted to the plungers 15 so that the capacity of the pockets is varied. This cam section 28 is held in its adjusted position by means of bolts 30 which pass through slots in the wall of the guide way 29 (see Fig. 9).

By reference to Fig. 8 of the drawing it will be observed that although the pockets are filled with salt when they reach their upper position, yet they are still kept in communication with the supply until they pass the scraper plate 31. The object of this is that should there be an interruption in the continuous feeding of the cans, for instance one or more cans being omitted from a line of cans fed to be salted, the salt in those pockets, which would have been deposited in said cans, may be forced back into the salt receptacle at the point *c* of rotation of the carrier, and therefore the loss of salt which would otherwise have occurred, is prevented. The mechanism for operating the plunger at this point (*c*) of rotation of the carrier consists of a supplemental track section 32 which is movable through a slot 33 formed in the cam section 13 and back wall of guide way 29, over a portion of the outer flange of the cam which is supplemented thereby. This track section 32 is rigidly affixed to a horizontally disposed L-shaped extension 34 of the vertical arm 35, this latter arm being also rigidly secured to the free end of the swing arm 36 pivoted at 37 at one side of and adjacent the forward end of the machine. This arm 36 is also formed at its free portion with a horizontal branch arm 38 the free end of which extends over the active run of a conveyer belt 39 and is provided with a roller 40 which is adjustably mounted in the slot 41 of the arm 38. The swing arm is pressed toward the conveyer belt by a spring 42 so that the supplemental track section is normally disposed in the cam over a portion of its outer flange.

The belt 39 extends longitudinally of the base with the active run thereof overlying the upper face of the base, and passes over driven pulley 7 and a suitable idler pulley (not shown) disposed at a convenient distance from the machine.

43 indicates a link belt conveyer arranged on the upper face of the base and passing over an idler 44 and a driven sprocket wheel 45 which is mounted on a vertical shaft to which movement is transmitted from the drive shaft 4 through gears 46 and 47. This conveyer is provided with spaced apart plates 48 and is arranged with its active runs angularly disposed to the conveyer belt 39, the same extending toward said conveyer belt in a forward direction relatively to its travel. Extending along the rear side of the active run of the conveyer 43 is a backing plate 43′, which is suitably mounted on base 1 and holds the conveyer from sagging.

49 and 50 indicate guides which lie on opposite sides of conveyer 39, the former being pivoted at 51 and having its forward end yieldingly held by spring 52, and the latter guide being rigidly held upon the base beneath the path of travel of the plates 48. The guide 50 is adjustably mounted, a preferred means for accomplishing the result being shown, the same consisting in providing said guide with outwardly projecting slotted ears 53 through the slots of which bolts 54 project.

55 indicates a chute which is secured to the stand 3 and receives the lower portion of the salt carrier 9 so as to prevent any loss of salt from the pockets and insure of the same being properly deposited in the cans.

In operation the cans to be salted are placed on the conveyer belt 39 and thus fed between the guides 49 and 50 at which point they are engaged by the plates 48 a

brought one at a time, directly beneath chute 55. Each pocket holds just enough salt for one can and consequently the respective mechanisms are so timed that simultaneous with the moving of a can beneath the chute 55 a pocket 14 moves to a position directly thereabove and is then emptied by the ejector as heretofore set forth. It will be apparent that in the event of the salt not being firmly packed in a pocket entering the chute 55, that falling salt therefrom will be caught by the inclined side wall of said chute and directed thereby to the can which is then moving beneath the chute. During the movement of the cans thus far referred to, each can engages roller 40 thereby swinging arms 35 and 36 outward and as the cam track section is rigidly secured to the extension 34 of arm 35 it will be moved through slot 33 to the rear of cam section 13 and thus the plungers will not be operated until the rollers of their stems reach point *b* in their path of travel. If there fails, however, to be a can between any of the plates 48 the roller will obviously not be operated when said plates pass, and the supplemental track section 32 will therefore not be moved from engagement with the outer flange of the cam. Therefore when the roller on the stem 16 of the approaching plunger 15 engages said supplemental track section it causes said stem to move the plunger outward and eject the salt from the pocket back into the salt receptacle at the point marked *c*. When the cans are salted they are conveyed down a suitable discharge chute 56 at the rear of the machine, a guide 56′ being mounted on base 1 opposite to the rear portion of guide 50 to guide the cans as they pass from roller 40.

It will be observed that by providing a yielding guide opposite the conveyer 43, that the cans will be prevented from being jammed by the plates 48, should the cans not be properly presented for said plates to move freely between them.

The guide 50 being adjustable it can be readily set so that the cans will be accurately fed relatively to the roller 40 to shift the supplemental track section clear of the path of travel of cam rollers.

In the present showing I have illustrated a convenient form of tightener for sprocket chain 27, the same embodying the sprocket wheel 57 engaging said chain at a convenient point and being mounted on a bracket 58 adjustably secured to stand 3.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is:—

1. In combination with a can conveyer, a receptacle for the material, a carrier for conveying the material for deposit in the cans on said conveyer, and mechanism for ejecting the material from the carrier at different points in the travel thereof, whereby the material can be deposited into the cans or at a point without the same.

2. In combination with a can conveyer, a salt receptacle, means for conveying salt from the receptacle to the cans, and mechanism for ejecting the salt from said conveyer, said mechanism being controlled by the cans.

3. In combination with a can conveyer, a receptacle for the material to be deposited in the cans, a carrier for conveying the material from said receptacle to the cans, ejector means for ejecting the material from the carrier, and mechanism for operating said ejector means to eject the material from the carrier, said mechanism being controlled to vary the point in the path of travel of the carrier at which the ejection normally occurs.

4. In a machine of the type set forth, in combination with a receptacle, a carrier in communication therewith for receiving and conveying a quantity of material therefrom, means for ejecting the material from said carrier and mechanism for controlling and operating said means to eject the material from the carrier before or after the same passes out of communication with said receptacle.

5. In a machine of the type set forth, in combination with a receptacle, a can conveyer, a carrier provided with a plurality of means adapted to receive material from the receptacle for deposit in successive cans, and mechanism for ejecting the material from the said carrier, said mechanism being normally set to effect the ejecting of the material before the carrier passes out of communication with said receptacle and being controlled by the cans.

6. In a machine of the type set forth, in combination with a receptacle, a carrier formed with pockets successively filled with material from said receptacle, and mechanism for automatically ejecting the material from said pockets back into the receptacle, or without the same.

7. In a machine of the type set forth, in combination with a receptacle having its bottom formed with an opening and being curved inwardly, a revolving carrier having its rim extending across said opening and being formed with pockets adapted to receive material from said receptacle, ejectors for said pockets, means for operating said ejectors after the pockets have passed out of communication with the opening, and means whereby said ejectors can be operated before the pockets pass out of communication with said receptacle.

8. In a machine of the type set forth, in combination with a receptacle formed with discharge opening, a rotary carrier formed with pockets moving into communication with said discharge opening as the carrier rotates, ejectors in said pockets, and means

whereby said ejector can be operated independently at different points in the path of travel of the carrier.

9. In combination with a receptacle having an opening in its bottom, a rotary carrier having pockets adapted to register with said opening, ejectors mounted in said pockets, levers connected with said ejectors, and a stationary cam engaging the free ends of said levers for reciprocating said ejectors during movement of the carrier.

10. In combination with a receptacle having a discharge opening, a carrier provided with means for receiving material to be deposited in cans, ejectors in said means, means for reciprocating said ejectors at a predetermined point of travel of the carrier to deposit the material into the cans, and means whereby said ejectors can be reciprocated before reaching such point in the travel of the carrier.

11. In combination with a receptacle, a rotary carrier for conveying material therefrom, said carrier being formed with pockets, ejectors in said pockets, a stationary sectional cam formed with a cam groove, levers connected at one end to said ejectors and having their other ends received in the groove of said cam, and means whereby one cam section can be adjusted to and from the other section whereby the movement of said levers will be varied.

12. In a machine of the type set forth, a receptacle having its bottom formed with an opening and curved inwardly on the arc of a circle, a rotary carrier having its rim extending across said opening and being formed with pockets, ejectors in said pockets, means for reciprocating the same, and an inclined agitator in said receptacle, said agitator having fingers extending into proximity to the opening of said receptacle.

13. In a machine of the type set forth, in combination with a receptacle, a rotary carrier provided with means to receive material from said receptacle, ejectors in said means, a cam, levers connected at one end to said ejectors and having their other ends arranged in the track of said cam, said track being formed to oscillate said levers at predetermined points of their travel, a supplemental track section for oscillating said levers between said points of travel, and means for moving said supplemental track section onto and off of said cam track.

14. In a machine of the type set forth, in combination with a receptacle, a rotary carrier provided with means to receive material from said receptacle, ejectors in said means, a cam formed with a track, levers connected with said ejectors and having their other ends engaging said track, said track being formed to oscillate said levers at predetermined points of their travel and said cam being formed with an opening therebetween, a supplemental track section movable onto and off of said track through said opening of the cam, and means for operating said supplemental track section, substantially as and for the purpose specified.

15. In a machine of the type set forth, in combination with a receptacle, a can conveyer underlying the same, a continuously moving carrier for conveying material from said receptacle for deposit into cans on the conveyer, and means for controlling the depositing of the material from said carrier, said means including an element projecting into the path of travel of the cans.

16. In a machine of the type set forth, in combination with the receptacle and the carrier for discharging material therefrom, a conveyer movable beneath said carrier, and a second conveyer consisting of an endless belt provided with plates movable over the first named conveyer in a direction longitudinally thereof, substantially as and for the purpose set forth.

17. In a machine of the type set forth, in combination, a receptacle, a rotary means forming a conveyer for discharging material from said receptacle into the cans, a conveyer provided with engaging means for conveying cans to the receptacle, and means for controlling the discharging of material from said rotary means, said last named means embodying an element projecting into the path of movement of the cans.

18. In a machine of the type set forth, in combination with the base, a receptacle, and means mounted above the base for discharging material from the receptacle, can guides mounted on the base, one of said guides being pivoted and yieldingly pressed to its normal position, means for conveying the cans between said guides, and means for operating said last named means.

19. In a machine of the type set forth, a base, a belt conveyer mounted thereon, a second conveyer angularly disposed toward said first named conveyer and being provided with plates between which the cans are received, said plates projecting over said belt conveyer, and can guides on opposite sides of said belt conveyer, in combination with means arranged above the base for depositing material in the cans as they are moved therebeneath.

20. In a machine of the type set forth, a base, a belt conveyer mounted thereon, a second conveyer angularly disposed toward said first named conveyer and being provided with plates between which the cans are received, said plates projecting over said belt conveyer, and can guides diverging toward the rear end of the base and being arranged on opposite sides of said belt conveyer, one of said guides being fixed and the other yieldingly pressed, in combination with means arranged above the base for de-

positing materials in the cans as they are moved therebeneath.

21. In a machine of the type set forth, in combination, a base, a can conveyer mounted thereon, a receptacle arranged above the base, a carrier formed with a pocket to receive and discharge material from said receptacle, means for normally preventing any discharge of material from said receptacle, and means for operating said means comprising an arm pivoted to the base at one end, a vertical arm rigidly connected to the free end of said arm and having its upper end connected to said first named means, and a second arm rigidly connected to said swing arm and projecting into the path of movement of the cans.

22. In a machine of the type set forth, in combination with a base, and an endless conveyer movable thereon, a receptacle formed in its bottom with an opening, a carrier having its rim formed with pockets to receive material through the opening of said receptacle, ejectors mounted in said pockets, a cam formed with a track, means connected to said ejectors and engaged in said track for reciprocating said ejectors, a supplemental track section, normally overlying a portion of said track, and means for removing said supplemental track section from the track of the cam, said last means embodying an element arranged in the path of travel of the cans, substantially as and for the purpose specified.

23. In a machine of the type set forth, a can conveying and spacing means comprising an endless belt conveyer for reception of the cans, a second conveyer consisting of an endless belt disposed at an acute angle to said first conveyer and having plates movable thereover for engagement with the cans, and means for operating said conveyers.

24. In a machine of the type set forth, a base, a receptacle arranged above the same, means for discharging material from the receptacle, said means normally not being set to discharge material from the receptacle, and means for actuating said means to effect the discharge of material from the receptacle, said last means including an element arranged above the base, in combination with a conveyer for moving the cans into engagement with said element, and can guides, one of said guides being capable of adjustment relatively to said element, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK WATTS BURPEE.

Witnesses:

J. F. WELLS,

ALLEN CAMPBELL.