Jan. 12, 1943. L. J. MADDEN 2,308,188

TABLET DISPENSING MACHINE

Filed Nov. 21, 1939 5 Sheets-Sheet 1

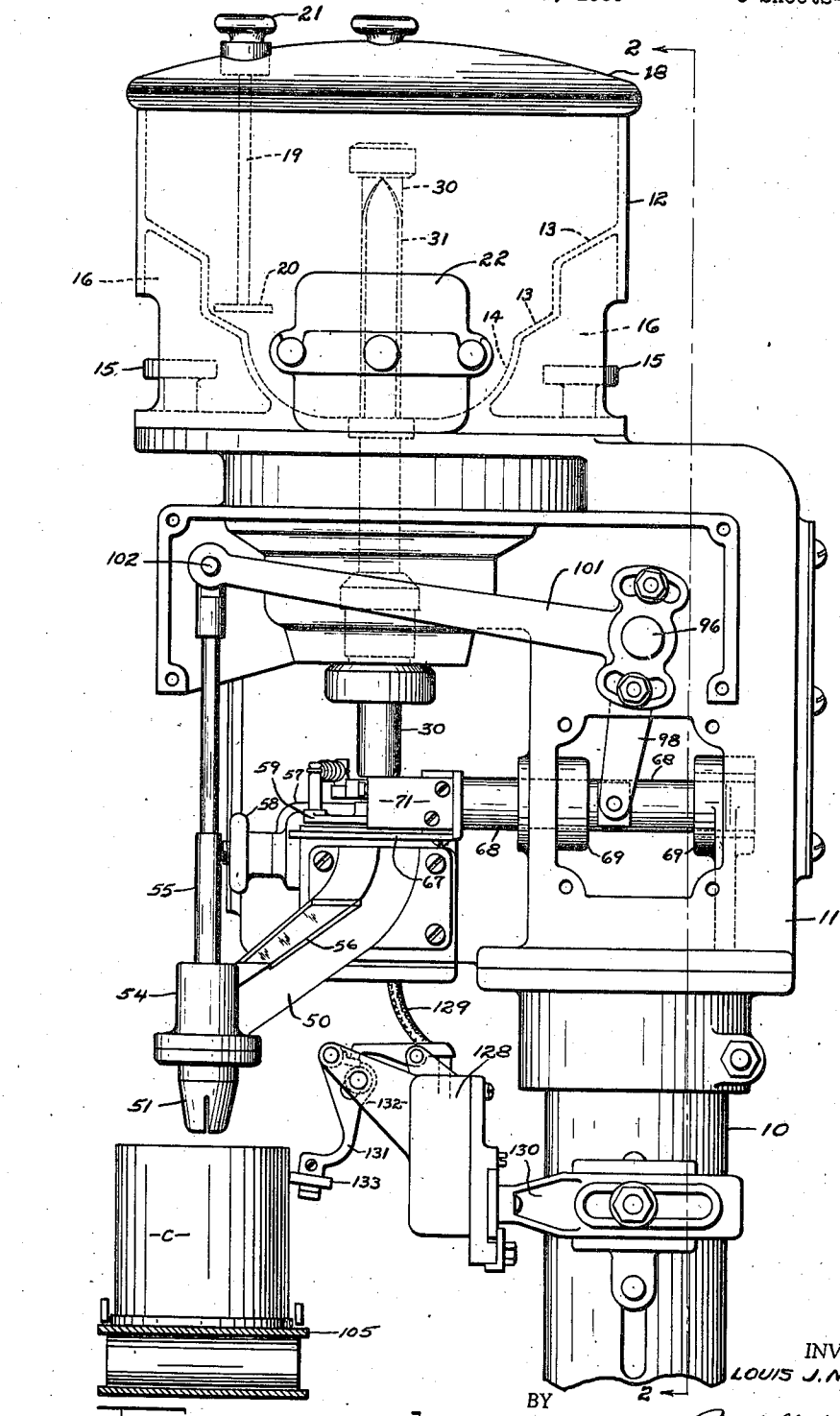


FIG. 1

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TABLET DISPENSING MACHINE

Filed Nov. 21, 1939 5 Sheets-Sheet 2

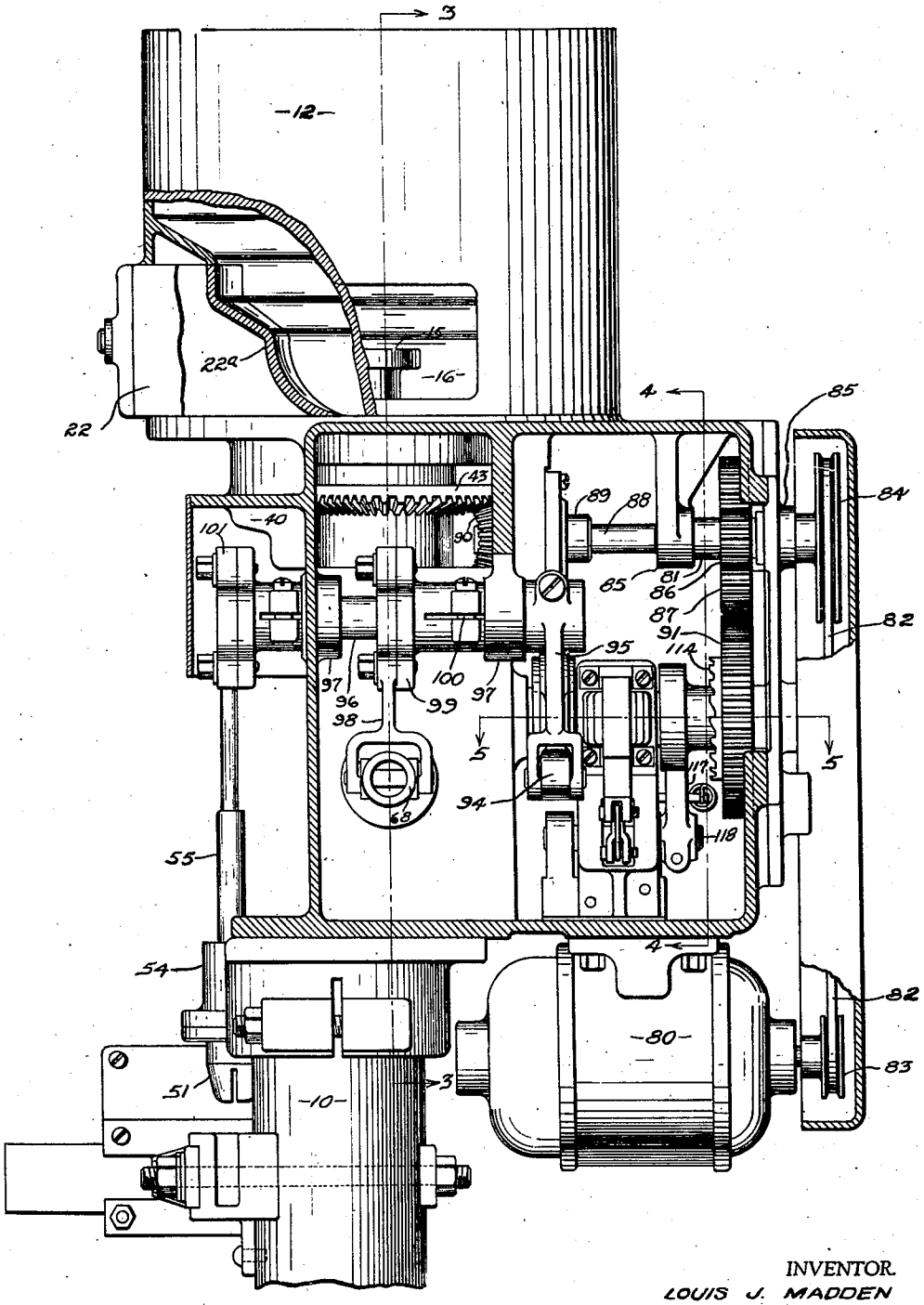


FIG. 2

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TABLET DISPENSING MACHINE

Filed Nov. 21, 1939 5 Sheets-Sheet 3

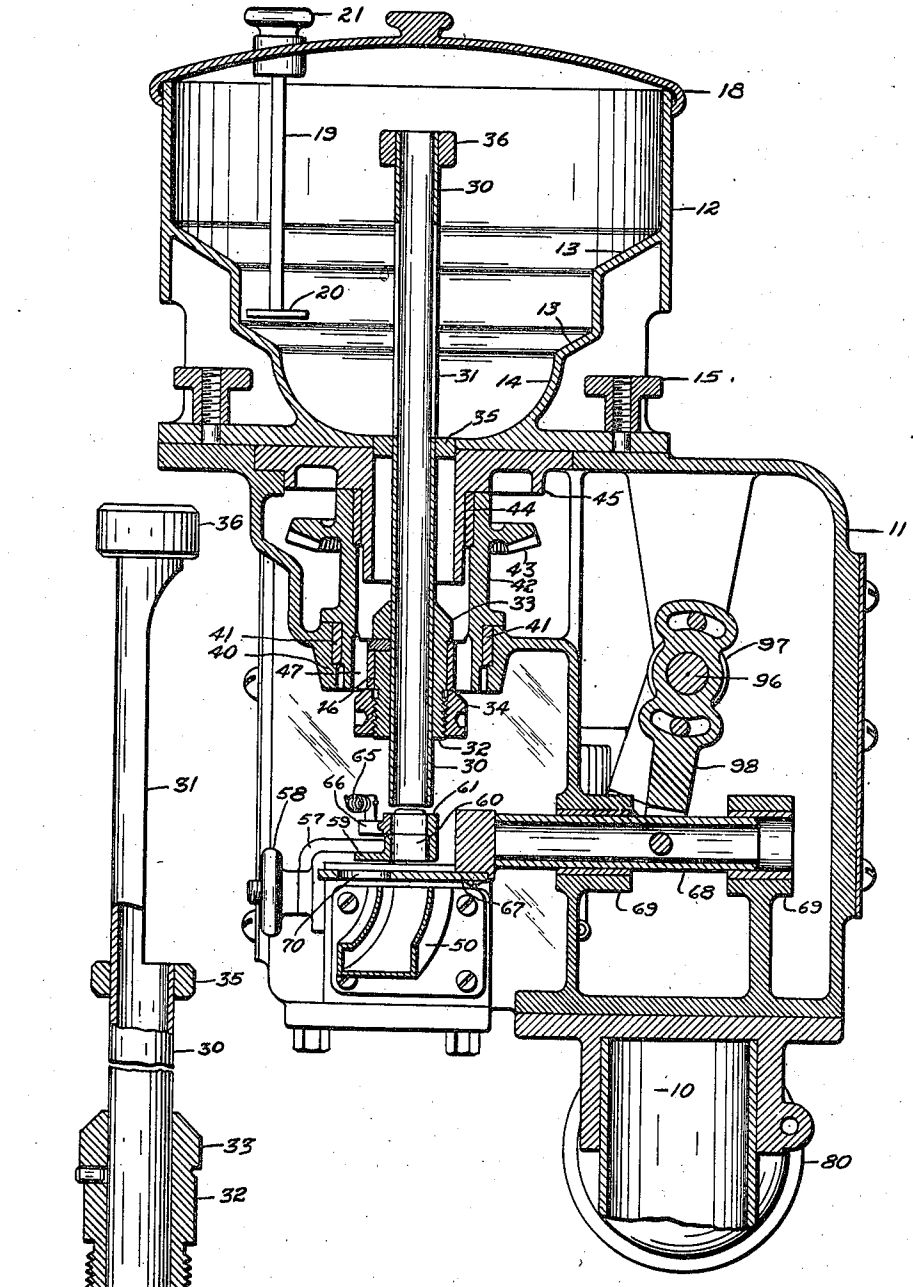


FIG. 3

FIG. 4

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TABLET DISPENSING MACHINE

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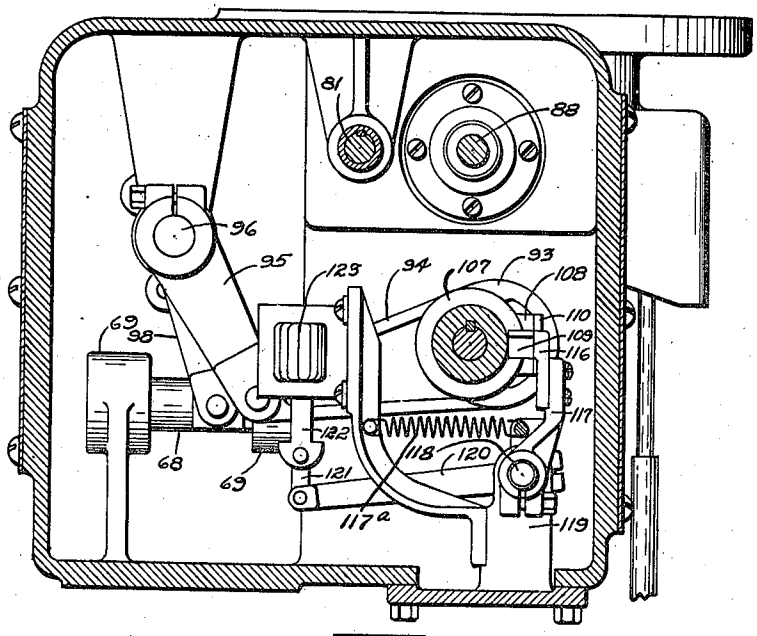


FIG. 4

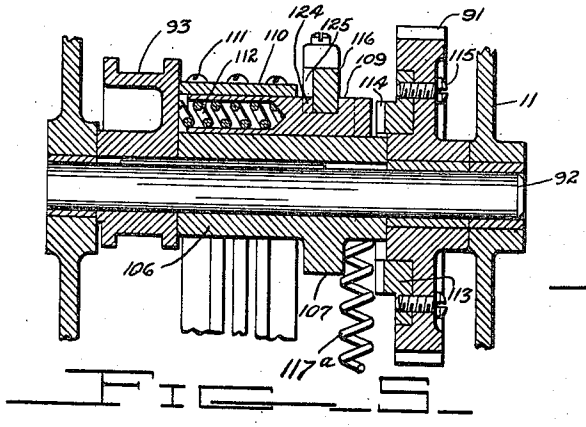


FIG. 5

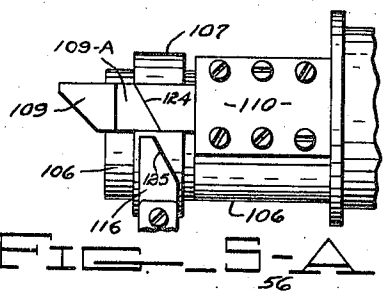


FIG. 5-A

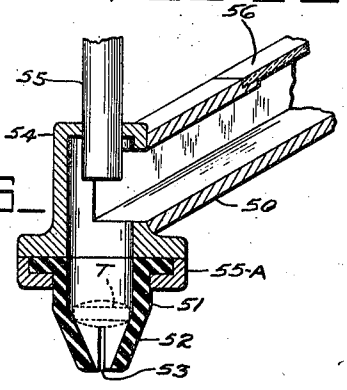


FIG. 6

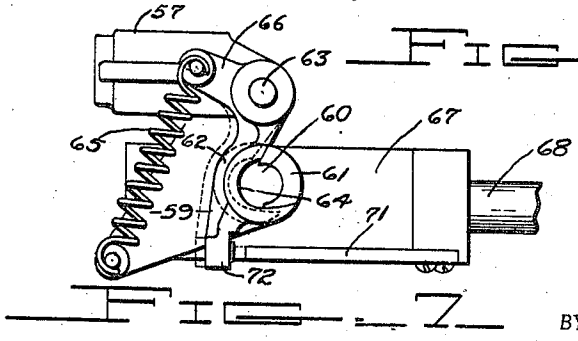


FIG. 7

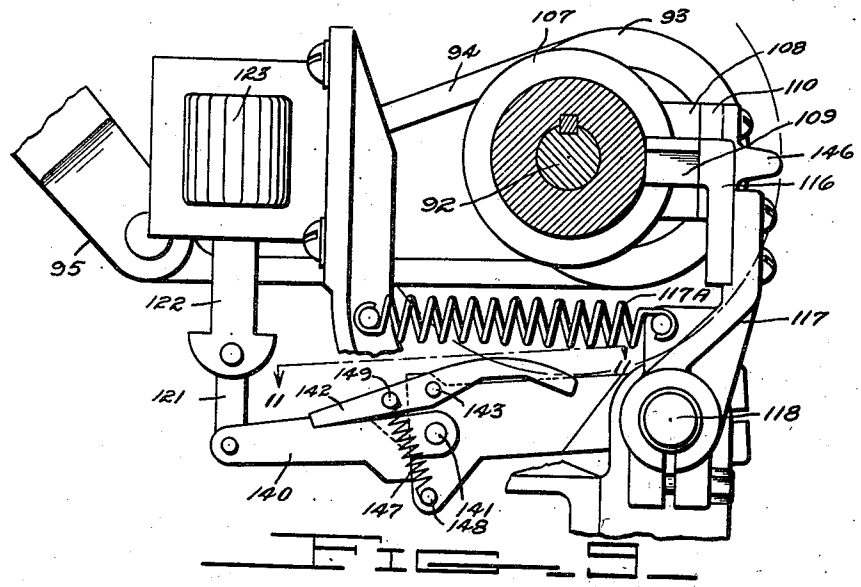
INVENTOR.
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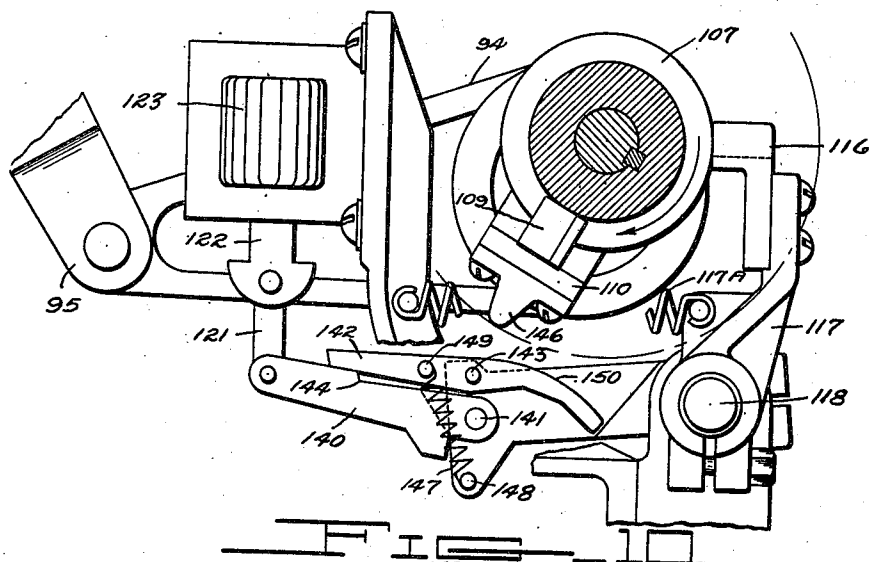
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Jan. 12, 1943. L. J. MADDEN 2,308,188

TABLET DISPENSING MACHINE

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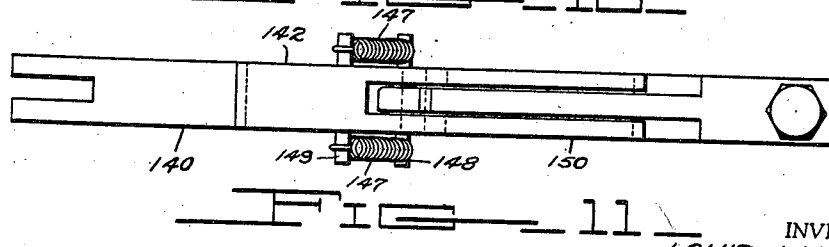


FIG. 11

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Patented Jan. 12, 1943 2,308,188

UNITED STATES PATENT OFFICE

2,308,188

TABLET DISPENSING MACHINE

Louis J. Madden, Syracuse, N. Y., assignor to International Salt Co., Inc., Ithaca, N. Y., a corporation of New York

Application November 21, 1939, Serial No. 305,539

1 Claim. (Cl. 226—2)

This invention relates to a machine for dispensing tablets and is intended particularly to dispense one or more tablets formed of easily granulated material, such as salt, into a container while a procession of containers are advanced in juxtaposition to the machine.

In the canning industry, it is customary to dispense a given quanity of an ingredient, as salt, to each container of certain canned goods, such as corn, peas, etc. It is important that a given quantity of salt be delivered to each container. It is difficult to obtain this result with granulated or powdered salt in that it is more difficult to accurately measure in the granulated form under ordinary conditions, and extremely difficult under damp conditions. This invention relates to a machine whereby the salt may be previously pressed into tablets under favorable operating conditions so that each tablet represents an accurate predetermined quantity of salt.

Machines have been heretofore devised to dispense tablets and this invention is directed to certain improvements in such machines notably the ability to effectively dispense one or more tablets to each container as the containers are advanced in a continuous procession by the machine. Further, the improvements include a particularly efficient means for transferring and feeding the tablets from the supply hopper in a manner to reduce grinding or granulation of the tablets to a minimum. These improvements, and other features, constitute the objects of this invention and other features thereof reside in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a side elevational view of a machine embodying my invention.

Figure 2 is a rear elevational view of the machine shown in Figure 1 with parts being shown in section taken on lines 2—2, Figure 1.

Figure 3 is a view taken on lines 3—3, Figure 2.

Figure 4 is a view taken on lines 4—4, Figure 2.

Figure 5 is a sectional view of the clutch mechanism taken substantially on lines 5—5, Figure 2.

Figure 5a is a fragmentary detail view, looking downward in Figure 5, with the shiftable section in its shifted position, the locking cam member in its position occupied just prior to shifting the shiftable section back to its starting position.

Figure 6 is an enlarged fragmentary sectional view of the tablet retaining member and the discharge end of the chute.

Figure 7 is a top plan view of the tablet feeding mechanism.

Figure 8 is a side elevational view of the tablet dispensing tube with the lower end thereof shown in section.

Figure 9 is a fragmentary view similar to Figure 4 illustrating a different connection between the solenoid and the locking member for the one-revolution clutch, the parts being shown in normal or starting position.

Figure 10 is a view similar to Figure 9 illustrating the parts in operated position.

Figure 11 is a detail plan view of the lever between the solenoid and the locking member.

This tablet feeding machine comprises, generally, a suitable hopper for the tablets to be dispensed, means for feeding the tablets in line, file or column from the hopper, a delivery nozzle located below the hopper and the feeding means, the nozzle being out of line with the feeding means, means, as an inclined chute, for transferring the tablets from the feeding means to the nozzle, cut-off and dispensing mechanism operable to deliver a predetermined number of tablets, that is, one or more tablets upon each operation, from the feeding mechanism to the transfer means or chute, and hence to the nozzle, mechanism, as a plunger, operable to eject a predetermined number, one or a plurality, of tablets in the nozzle, from the nozzle, suitable actuating mechanism including synchronizing means for the cut-off and dispensing mechanism and the ejector mechanism or plunger, and means controlled by the movement of the container into receiving position relatively to, that is, under the nozzle, for controlling the operation of the cut-off and dispensing mechanism and the delivery mechanism or plunger by the actuating mechanism.

Usually the cut-off and dispensing mechanism cuts off and delivers one tablet from the file or column of tablets permitting that one tablet to pass through the transfer passage or chute to the nozzle, and the plunger delivers that tablet from the nozzle into the container under the nozzle, although it will be understood that any predetermined number, or more than one tablet may be delivered upon each operation of the cut-off and dispensing mechanism and the plunger.

One of the features of the invention is the delivery nozzle, this being formed of a resilient elastic material, as rubber, and having its delivery end conical in form and split longitudinally to form a plurality of resilient elastic fingers, these

fingers being spread radially by the action of the plunger or delivery mechanism against the tablets. The delivery nozzle is divided into a plurality, as four, of resilient and elastic segments or fingers. The advantage of such a nozzle is that it does not mutilate, scour or grind off any of the salt from the tablet. Another special feature is the cut-off and dispensing mechanism.

Another feature of the invention is the control of the cut-off and dispensing mechanism and the delivery mechanism or plunger by the movement of a container into receiving position under the nozzle.

A particularly important feature of the invention is the delivery tube of the feeding mechanism, this extending vertically into the hopper and having a portion thereof in the hopper cut away, so that it is substantially semi-circular in cross section and picks up the tablet with little friction and grinding throughout the depth of the bulk of tablets in the hopper, during relative rotation of the tube and the hopper. The tube and the tablets are of such diameter that the tube conveys the tablets in a single column.

The frame of the machine may be of any suitable construction, that here shown consisting of a supporting column 10 on the upper end of which is mounted a boxlike housing 11 in which the actuating mechanism of the machine is contained, and on the top of which is detachably mounted a hopper 12 for the supply of tablets to be dispensed. The hopper 12 is of general cylindrical formation having a stepped bottom formed with inclined or conical surfaces 13 corresponding to the treads of steps, these surfaces 13 converging downward and inward and the lowermost surfaces 13 merging into a bowl-shaped portion 14. The hopper is detachably secured to the top of the body 11, as by screws 15, arranged in recesses formed in opposite side walls of the hopper between the periphery and the bottom thereof. The hand screws 15 thread into suitable apertures formed in the top wall of the body 11. The bottom of the hopper 12 is formed in steps to avoid jamming or clogging of the tablets along the rotatable delivery tube to be presently described.

The hopper is provided with a suitable cover 18 in which is arranged a level indicator consisting of a vertically slidable stem 19 provided at its lower end with a foot 20 which rides on the surface of the supply of tablets in the hopper. The distance the stem projects above the cover of the hopper indicates the amount of tablets in the hopper. As seen in Figure 2, the hopper is provided with an aperture in one side thereof in which a removable closure 22 is located, this closure including a portion or section 22^a of the stepped bottom of the hopper.

The means for feeding the tablets in a row, line, file or column from the hopper 12 comprises an upright tube 30 rotatably mounted centrally or axially of the hopper with its upper end portion extending into the hopper and having a lengthwise portion or section, preferably one-half, in cross section, cut away as indicated at 31 (Figures 1 and 8) so that as the tube 30 rotates the tablets feed axially into the tube through the open side thereof, or are picked up by the tube with minimum friction and abrading throughout the depth of the bulk of tablets in the hopper. There is always a quantity or column of tablets in the tube, because the tablets do not feed one by one from the hopper into the tube but on the contrary there is always a column of tablets in the tube ready for delivery. The feed tube is thus also a magazine tube. The tube 30 is provided with an enlargement in the form of a sleeve 32 secured thereto adjacent the lower end thereof. The sleeve 32 is formed with a head 33 at its upper end and the lower portion of the sleeve is threaded to receive a nut 34, the nut clamping the head against the hub of a motion transmitting member for rotating the tube to be presently described.

The body 11 is formed with a depending portion 40 below the hopper, in the lower end of which is located a bearing 41 in which is mounted the motion transmitting member or actuator 42 for the rotatable tube 30. This actuator member 42 is here shown as in the form of a sleeve formed with a bevel gear 43 in its upper end, said upper end being mounted on a bearing 44 around a depending hub portion of a plate 45 suitably mounted in the top wall of the housing 11. The lower end of this sleeve or motion transmitting member 42 is provided with an internal hub 46 supported by radial arms 47 from the bottom of the actuator member or sleeve 42. The tube 30 is also formed with an annular flange or collar which is substantially flush with the bowl-shaped portion of the hopper. The tube 30 with the parts thereon is inserted through the plate 45 and the hub 32 is applied within the internal hub 46 of the motion transmitting member or sleeve. When the motion transmitting member 42 is located, the tube 30 is also located. The upper portion of the tube 30 within the hopper 12 with one side thereof cut away, as at 31, provides a simple and effective means for picking up and guiding the tablets in the hopper into the tube without excessive agitation, and hence grinding or grating action on the tablets. If, however, the tube should become clogged, it is merely necessary to remove the nut 32 and withdraw the tube upwardly.

The means for transferring the tablets from the tube 30 to the delivery nozzle comprises an inclined chute 50 arranged below the lower end of the tube 30 with the upper end of the chute in register with the tube, the chute 50 inclining laterally and downwardly from the end of the tube to the delivery nozzle 51 secured to the lower or outer end of the chute 50. The nozzle 51 is formed of yieldable material, as rubber, with the lower portion 52 thereof conoidal to provide a restricted passage to retain a tablet therein. The conoidal portion 52 is formed with a plurality of radial lengthwise slots 53 which provide radially yielding fingers, so that the nozzle being formed of rubber, the fingers do not offer any material resistance to the tablets being pushed out of the nozzle, by means, as a plunger. The lower end of the chute 50 is formed with a head, as a cylindrical portion 54, in which is mounted an ejector or delivery plunger 55. The plunger 55 moves axially of the bore of the nozzle 51 to move or push a tablet or tablets therein through the slotted conoidal end portion 52 thereof. The nozzle 51 is secured to the head 54 by a retaining member 55^a. The chute 50 may be provided with a transparent window 56 to permit the operator to observe the passage of the tablets through the chute.

The cut-off and dispensing mechanism operable to deliver a predetermined number of tablets upon each operation of the feeding means from the tube 30 to the transfer chute 50 and hence to the nozzle 51, comprises a passage alined with the lower end of the feed tube 30 and over the receiving end of the chute 50, the

passage having a transverse recess leaving an arcuate jaw portion, a jaw movable into the recess toward and from the fixed jaw and when in its innermost position, serving to contract the passage sufficiently to prevent the passage of a tablet therethrough, a cut-off plate having a passage therethrough for registering with the passage 60 and normally out of register therewith and also serving to move the movable jaw to its outer position against the action of a returning spring, and means for actuating the cut-off plate and thereby causing it to first actuate the movable jaw, and thereby permit the tablet to fall through said passage onto the cut-off plate and then upon return movement to bring the aperture of the cut-off plate into alinement with said passage but permit the movable jaw to return to its normal position, cutting off the feeding of an additional tablet. When the aperture registers with said passage, the movable jaw cuts off the feeding of any additional tablets while the tablet just released by said movable jaw is free to fall through the aperture into the chute 50, and pass to the delivery nozzle 51.

57 designates a bracket detachably secured to the housing 11, as by a stud and nut 58, this being a support for the movable jaw. The bracket 57 extends inwardly and is provided with a laterally extending portion 59 in which is formed the delivery passage 60 arranged in register with the lower end of the tube 30 and of sufficient diameter to permit the passage of the tablet. The laterally extending portion 59 is formed with an upwardly extending arcuate rib 61 forming a continuation of one side of the passage 60, this constituting a fixed jaw and providing a recess or slot for the movable jaw to work in. 62 designates the movable jaw, this being pivotally mounted at 63 on the bracket 57 and formed with an arcuate portion movable in the recess toward and from the fixed jaw 61. The movable jaw 62 is yieldingly urged toward the part 61 by a spring 65 secured to a radial arm 66 on the movable body 62 and to the outer end of the bracket 57. When the movable jaw is actuated about its pivot 63 by the spring 65, as indicated in full lines (Figure 7), the passage 60 is partially closed or reduced sufficiently to prevent a tablet from passing out of the tube 30, or the lowermost tablet in the tube 30 rests upon the arcuate portion 64 of the movable jaw 62. When the movable jaw 62 is moved outwardly against the action of the spring 65 into the dotted line position (Figure 7), the passage 60 is fully open and the tablet permitted to drop through the passage 60 past the movable jaw or the arcuate portion 64 thereof and onto the cut-off plate 67. This cut-off plate 67 has a back and forth, here shown as a reciprocating, movement, it being carried by a horizontally arranged reciprocating shaft or tube 68 slidably mounted in suitable bearings or bosses 69 in the body 11 (Figure 1), the plate being provided with an aperture 70 (Figure 3) movable into and out of register with the passage 60 during the reciprocating movement of the cut-off plate 67. When arranged in register with the passage 60, the tablet which has previously been released by the opening movement of the jaw 62 is free to drop through the aperture 70 into the receiving end of the chute 50.

The jaw 62 is actuated by the reciprocating movement of the cut-off plate 67, and as here shown, a shoulder is provided on the shaft 68, this shoulder being at one end of the plate 71 secured to the shaft 68, which shoulder thrusts against the end 72 of the pivoted jaw 62 during the movement of the shaft 68 to the left (Figures 1 and 7) and actuates the jaw 62 to open it against the action of returning spring 65. The reciprocating movement is so synchronized with the movement of the jaw 62 that during the movement of the shaft 68 and cut-off plate 67 to the left, the aperture 70 moves out of alinement with the passage 60 while the movable jaw 62 is opened and releasing the lowermost tablet in the tube 30, and hence permits the tablet to drop onto the plate 67, and that during movement of the shaft 68 and cut-off plate 67 to the right (Figure 7), the jaw 62 moves back into cut-off position, while the aperture 70 comes back into alinement with the passage 60, permitting the tablet that is resting on the cut-off plate 67 to drop through the aperture 70 into the receiving end of the chute 50. Preferably, the mechanism is adjusted to feed the tablets one by one in a single file but obviously they may be adjusted to feed more than one. Also, these tablets, designated as T, are usually cylindrical in form with spherical ends or spherical in form with their equatorial zones cylindrical. The shape, however, is primarily a matter of convenience in forming the tablets.

By this feeding mechanism, there is no rubbing of tablets and no force applied tending to crack or crumble the tablets. The tablet released by the cut-off plate 67 travels through the chute 50 to the delivery nozzle 51.

The actuating and motion transmitting mechanism may be of any suitable construction for effecting the rotation of the tube 30, the reciprocation of the ejector or delivery plunger 55 and the operation of the cut-off and dispensing mechanism. The mechanism here shown comprises a motor 80 suitably carried by the body 11 and connected to a drive shaft 81 journalled in the body 11, by a belt 82 running over pulleys 83 and 84 on the motor shaft and the shaft 81 and motion transmitting means between the shaft 81 and the feed tube 30, between the shaft 81 and the cut-off plate 67, and between the shaft 81 and the plunger 55.

The shaft 81 is mounted in suitable bearings 85 in the body 11 and the mechanism between it and the rotatable tube 30 comprises a gear 86 on the shaft 81 meshing with a pinion 87 mounted on the shaft 88 suitably journalled in bearing 89 in the body 11, it extending horizontally or radially relatively to the tube 30, a pinion 90 on the shaft 88 and meshing with the beveled gear 43. Thus, the tube 30 is continuously rotated.

The motion transmitting means between the shaft 81 and the plunger 55 to reciprocate it and also between the shaft 81 and the shaft 68 to reciprocate said shaft and cut-off plate 67 may also be of any suitable construction, that here shown comprising a gear 91 rotatably mounted upon a shaft 92 having an eccentric 93 which through its strap 94 is connected to a rock arm 95 on a shaft 96 journalled in suitable bearings 97 in the housing 11 and having a rock arm 98 mounted for angular adjustment and secured to a collar 99 (Figures 2 and 3) on the shaft 96. The collar 99 is adjustably secured to the shaft 96 as by a screw 100. The arm 98 has a fork pivoted to the reciprocating shaft 68. The plunger 55 is actuated from the shaft 96 through a second radial arm 101 secured for angular adjustment to the shaft 96 in any suitable manner

to change the radial angle thereof, this arm 101 being pivoted at 102 to the upper end of the ejector or plunger 55. Thus, during the rotation of the shaft 68, the rotary motion thereof is continuously transmitted to the feed tube 30 and at the same time synchronized reciprocating movements are transferred to the plunger 65 and the reciprocating shaft 68.

The machine is intended to be used in juxtaposition to a conveyor or similar feeding means 105 operable to convey containers C in a procession beneath the delivery nozzle 51. Particularly simple means is provided for operatively clutching the gear 91 to the shaft 92 to effect operation of the cut-off and dispensing mechanism and the ejector or plunger 55, as each container passes beneath the nozzle 51, the gear 91 being the gear through which both the plunger 55 and the cut-off and dispensing mechanism are operated, or this gear being common to the motion transmitting mechanism for both the plunger 55 and the cut-off and dispensing mechanism including the cut-off plate 67. This means comprises a one-revolution or periodic clutch controlled by the container, moving into a position under the nozzle 51, through electro-magnetic means as a solenoid, the current through which is controlled by the container so moving into register with the nozzle 51.

Any suitable one-revolution or periodic clutch may be used. That here illustrated comprises a fixed clutch section rotatable with a shaft or motion transmitting member being continuously rotated, as the gear 91, a shiftable clutch section which is urged into engagement with the fixed section by a suitable spring, a locking member normally holding the shiftable clutch section in disengaged position, an electro-magnet or solenoid, the movable member or core of which is connected to the locking member, and a switch for closing the circuit through the solenoid, the switch being moved to closed position by an actuator or lever arranged to be engaged by the container C, as it moves under or into receiving position relatively to the discharge nozzle 51, said locking member having cam means for throwing out the shiftable clutch section at the end of each revolution.

113 designates the fixed clutch section having a jaw face 114, the clutch section 113 being here shown as secured to one face of the gear 91, as by screws 115. 109 designates the movable or shiftable clutch section, this being slidable in a suitable way formed in a radially extending lengthwise projection or rib 108 on a sleeve 106 keyed to the shaft 92 to rotate therewith, the sleeve being located between the eccentric 93 and the hub of the gear 91. 112 designates the spring thrusting at one end against the side face of the eccentric 93 and at its other end against clutch section 109, the spring being located in a suitable bore in the clutch section 109.

110 is a retaining plate for holding the clutch section 109 in the groove or way formed in the rib 108. 116 designates the locking member or cam coacting with the shiftable clutch section 109 and shiftable out of engagement with the section 109 to permit the spring 112 to re-act and engage the clutch section 109 with the clutch section 113. The cam or locking member 116 is movable radially relatively to the clutch section 109 and its carrier, the sleeve 106. As here shown, the clutch section 109 is formed with a notch 109a extending transversely relatively to the sleeve 106 into which the locking member or cam 116 extends, this slot being normally in circumferential alinement with a relatively high peripheral surface 107 on the sleeve 106. The member 116 and one of the walls of the slot 109a have coacting faces 125 and 124 coacting inclined plane fashion to shift the clutch section 109 axially. The looking member or cam 116 is normally arranged in the slot 109a, and hence holds the clutch section 109 retracted or against the action of the spring 112, that is, holds it out of engagement with the clutch section 113. When the locking member or cam 116 is shifted out of the slot 109a, the spring 112 is free to react and engage the clutch section 109 with the clutch section 113, so as to rotate the shaft 92 and effect the timed actuation of the plunger through the eccentric 93 and the connections 94, 95 and shaft 96 to force the table T in the delivery nozzle 51 out of said nozzle into container C registering therewith, and also reciprocate the dispensing and cut-off mechanism or the plate 71 and jaw 62 to deliver another tablet into the chute 59 for the next operation of the plunger 55. The locking member or cam 116 is here shown as carried by a rock arm 117 mounted on a suitable rock shaft or pivot 118 which is connected through a rock arm 120 and link 121 to the core 122 of a seloneid 123. When the solenoid is energized, its core 122 is moved upwardly (Figure 4) and hence the locking member 116 shifted to the right out of the slot 109a against the action of a returning spring 117a permitting the clutch section 109 to engage the clutch section 113 under the impulse of the spring 112, so that the shaft 92 is now clutched to the gear 91. The closing of the switch in circuit of the windings of the solenoid 123 is momentary but sufficient to permit the slot 109a to move circumferentially out of register with the locking member or cam 116, and during the movement of the shaft 92, the sleeve 106 rotates therewith and carries the clutch section 109 orbitally therewith. Hence, the locking member or cam engages the high peripheral surface 107 of the sleeve 106. As the sleeve 106 completes its one revolution, the cam 116 again radially enters into the slot 109a and the cam surface 125 thereof engages the cam surface 124 at one side of the slot 109a and cams the clutch section 119 axially to the left against the spring 112, thus disengaging the clutch section 109 from the clutch section 113.

The solenoid 123 is electrically connected to a switch 126 of any suitable construction by a cable 129. Thus switch is here shown as mounted on a bracket 130 adjustably mounted on the column 10. The switch is self-opening and is closed by a lever 131 pivotally mounted on a bracket 132 carried by the switch housing and provided with a wiper or roller 133 so located as to be engaged by each container as it moves in register with the delivery nozzle 51.

It is obvious that by this arrangement, upon engagement of the roller 133 by the container C, then moving under the delivery nozzle 51, the switch 129 will be momentarily closed and the solenoid 123 energized, and that upon energization of the solenoid, the locking member or cam 116 will be moved radially out of the notch or slot 109a, permitting the clutch section 109 to be shifted by the spring 112 into engagement with the clutch section 113, so that the shaft 92 will be rotated to actuate the plunger 55 and the cut-off and dispensing mechanism, and that as the shaft 92 completes one revolution, the clutch 109 will be withdrawn from engagement with the clutch section 113 by reason of the surface 125 of

the cam 116 engaging the surface 124 of the clutch section 109, thus stopping the feeding of the tablets until another container reaches the position in register with the delivery nozzle 51.

In order to prevent more than one tablet, or more than a predetermined number of tablets, from being fed into any one container, in the event the container feeding mechanism stops while a container is under the nozzle 51, and hence the circuit to the solenoid 123 held closed, means may be provided, as seen in Figures 9 and 10, for releasing the locking member 116 during each operation of the feeding or the cut-off and dispensing mechanism, regardless of whether or not the solenoid remains energized. In the illustrated embodiment of the invention, this means comprises a jointed rock arm or lever 140 corresponding to the rock arm or lever 120, and means operable during the cycle of movement of the one-revolution clutch for folding or breaking the jointed rock arm or lever 140, so as to release the locking lever 116 or effectively disconnect it from the armature or core of the solenoid and permit it to return to locking position during each revolution of the clutch. The rock arm or lever 140 consists of two sections joined or pivoted together at 141, suitable means, as a latch 142, pivoted between its ends at 143 to one section of the arm or lever 140 and extending across the pivot 141 and latching at one end at 144 with the other section, and a suitable knock-off or cam 146 provided on the projection or rib 108 of the sleeve 106, the tail of the latch 142 being located in the orbital path of the knock-off 146. The jointed rock arm or lever 140 is returned to normal position, when the locking member 116 moves into locking position, that is, the position shown in Figure 9 from that shown in Figure 10, by suitable means, as a spring or springs 147, each of which is connected at one end at 148 to one section of the rock arm 140 and its other end at 149 to the latch 142, the arrangement being such that the springs 147 tend to straighten the jointed rock arm or lever 140 from its folded position (Figure 10) and also perform the function of returning the latch 142 into latching position.

In operation, when the container C being progressed by the conveyor 105, engages the arm 133 to close the switch to the solenoid 123, the solenoid being thus energized moves the straightened rock arm or lever 140 upwardly and withdraws the locking member 116 in the same manner as the corresponding lever or rock arm 120 performs this function, in the construction shown in Figure 4. The one-revolution clutch is thus actuated in the same manner as in Figure 4, but before it has completed its revolution, after the locking member 116 has been moved out of locking position, the knock-off or cam 146 engages the tail of the latch lever 142 at 150, and thus trips the latch lever, so that it folds into the position shown in Figure 10, and thus releases the locking member 116 of the holding action of the solenoid, permitting the locking member 116 to move into normal position and throw out the shiftable clutch section, even though the solenoid should remain energized as when a container C instead of feeding past the nozzle 51 remains under the nozzle and in engagement with the roller 133 of the lever 131. In the normal operation, when the container moves out of engagement with the roller 133 of the lever 131 and out from under the nozzle 51, so that the solenoid is de-energized, and its core drops to normal position, the springs 147 re-act to return the jointed lever 140 to its straightened position, and the latch 142 into latching position, as shown in Figure 9.

What I claim is:

In a tablet feeding machine, an upright magazine tube through which the tablets feed one above the other, cut-off and dispensing mechanism comprising a part formed with a passage arranged below and alined with the tube and adjacent the end of the same and having an arcuate fixed jaw adjacent the end of the tube, a jaw movable transversely toward and from the former jaw partly into and out of the path of the tablets and serving to engage and hold the lowermost tablet from feeding into the passage, the dispensing mechanism including a cut-off plate movable across the lower end of said passage and having an aperture movable into and out of register therewith, and means for rotating the tube, actuating the movable jaw and for actuating the cut-off plate to cause it to register its aperture with said passage while the movable jaw is clamping the lowermost tablet in the tube and to move said aperture out of alinement with the passage when the movable jaw is out of engagement with the lowermost tablet in the tube.

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