Dec. 25, 1956 J. SIMPSON 2,775,335

CAN DIVIDER

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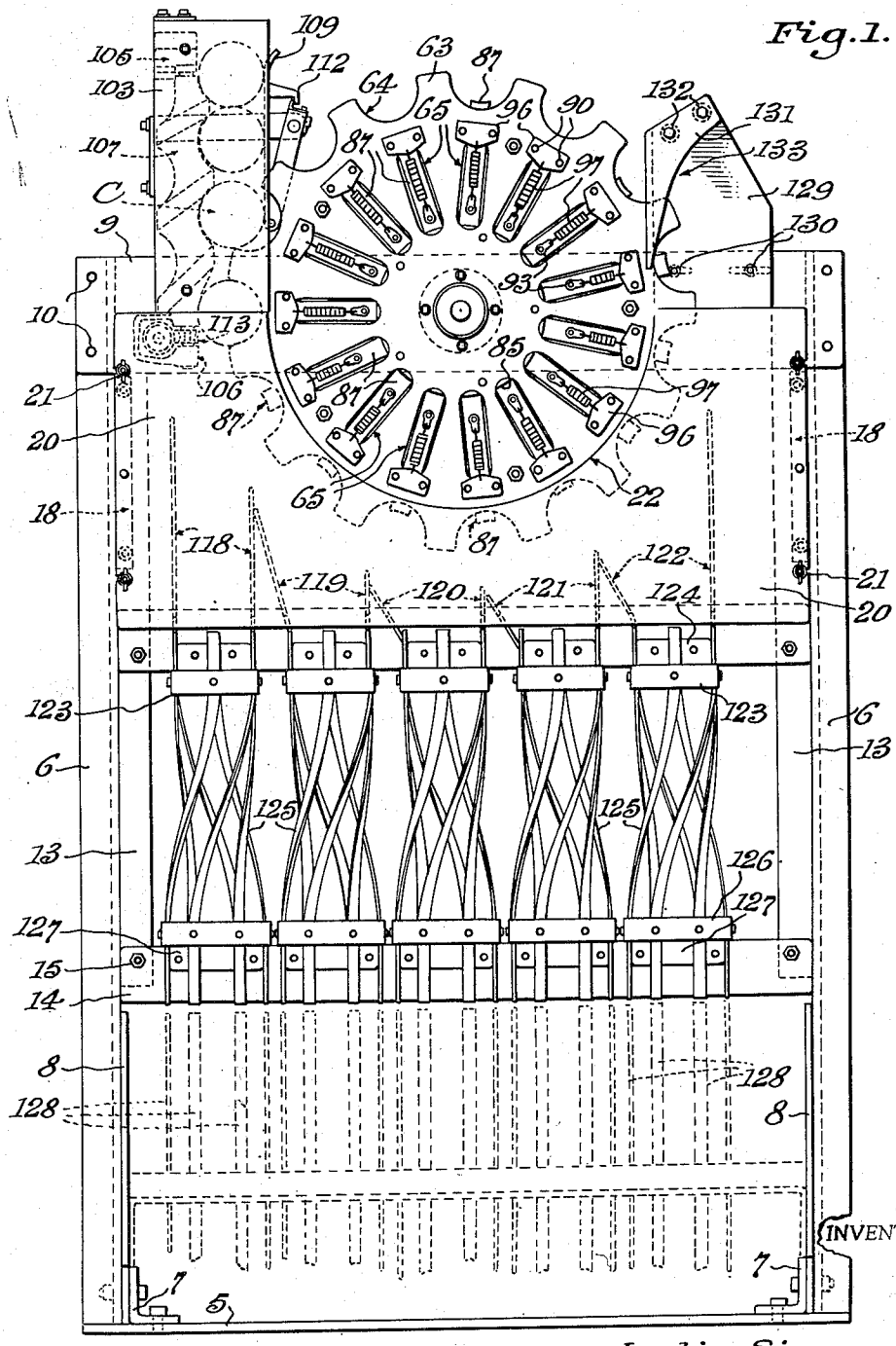
Fig. 1.



BY Justin Simpson

Mason, Porter, Diller & Stewart ATTORNEYS

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CAN DIVIDER

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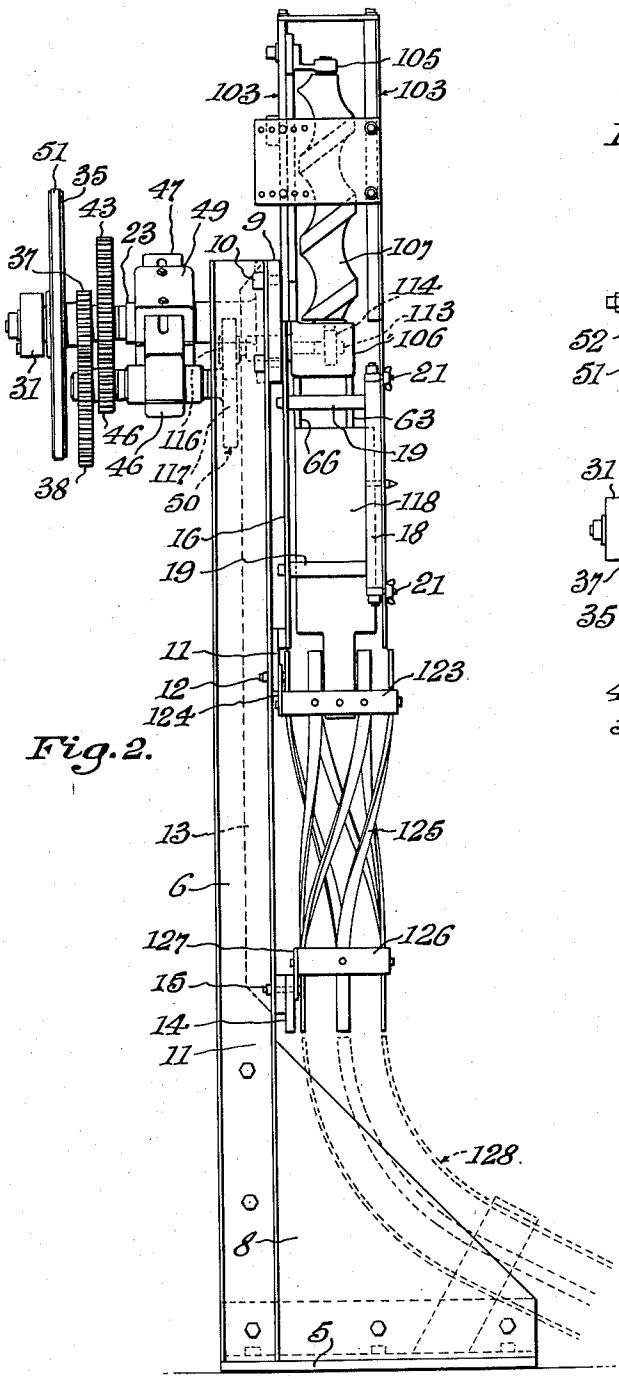

Fig. 2.

Fig. 3.

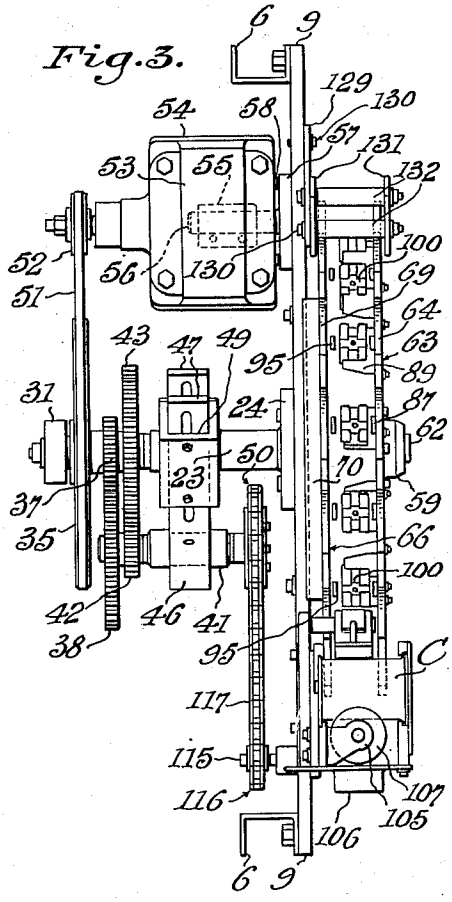

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Fig. 4.

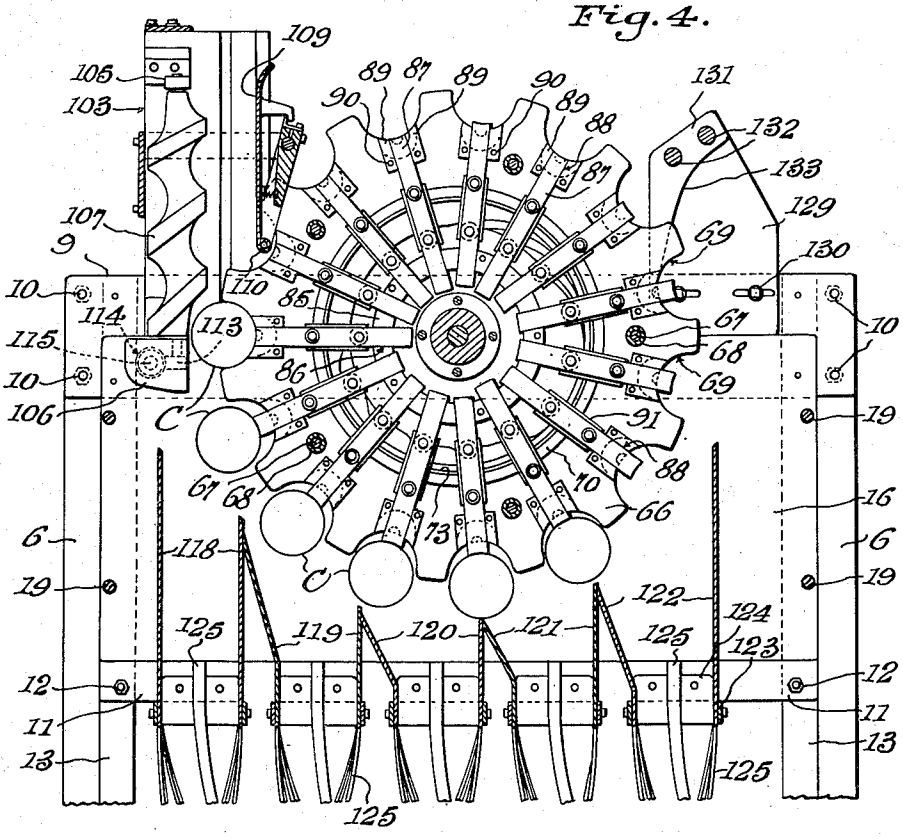

Fig. 9.

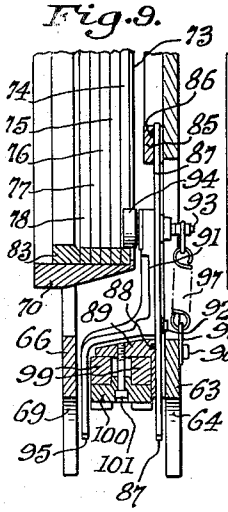

Fig. 10.

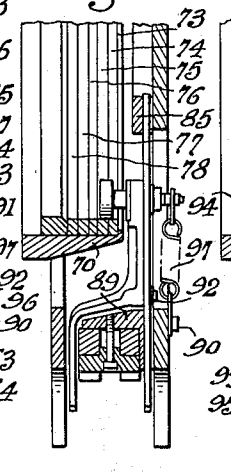

Fig. 11.

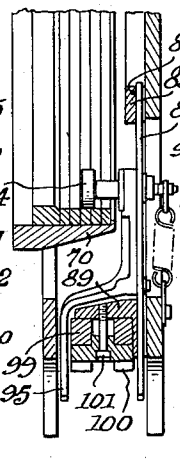

Fig. 12.

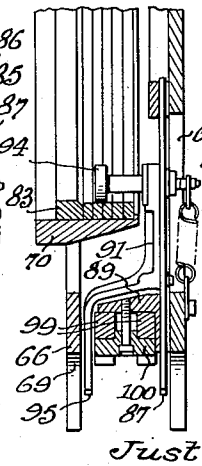

Fig. 13.

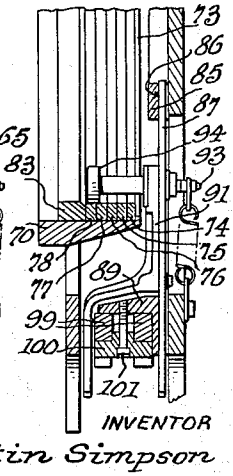

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Fig. 5.

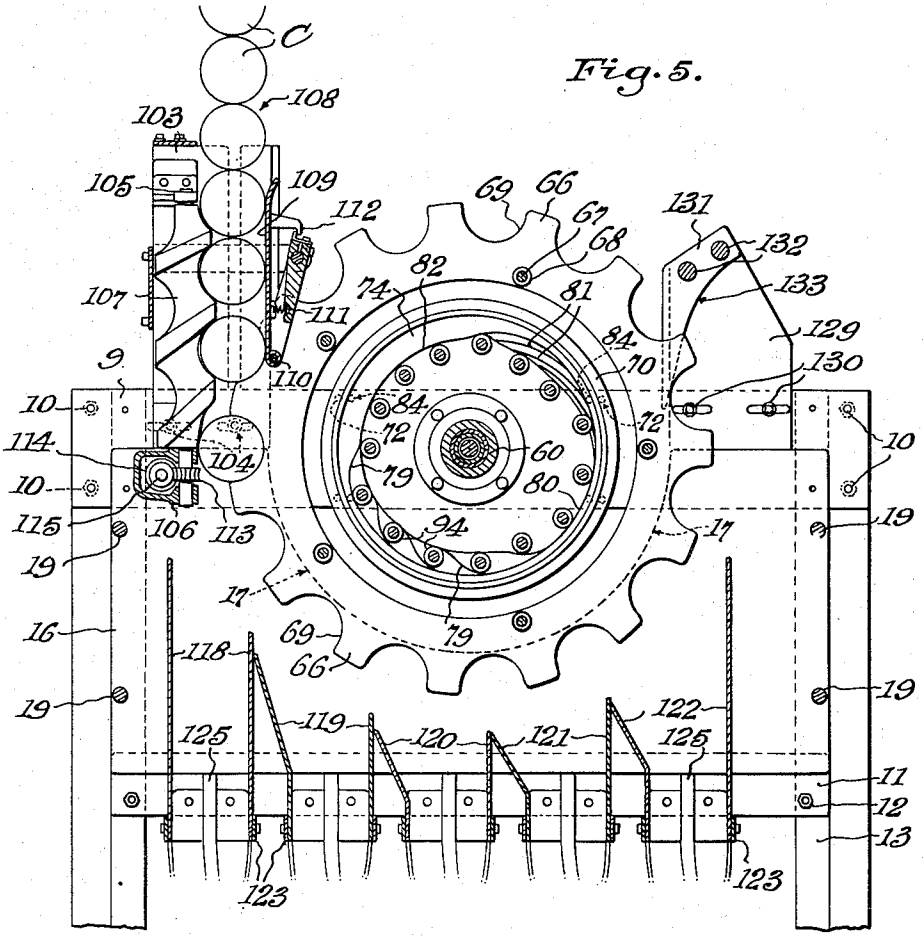

Fig. 6.

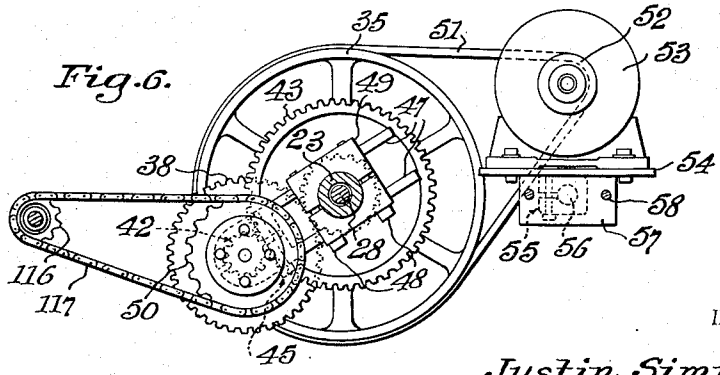

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Fig. 7.

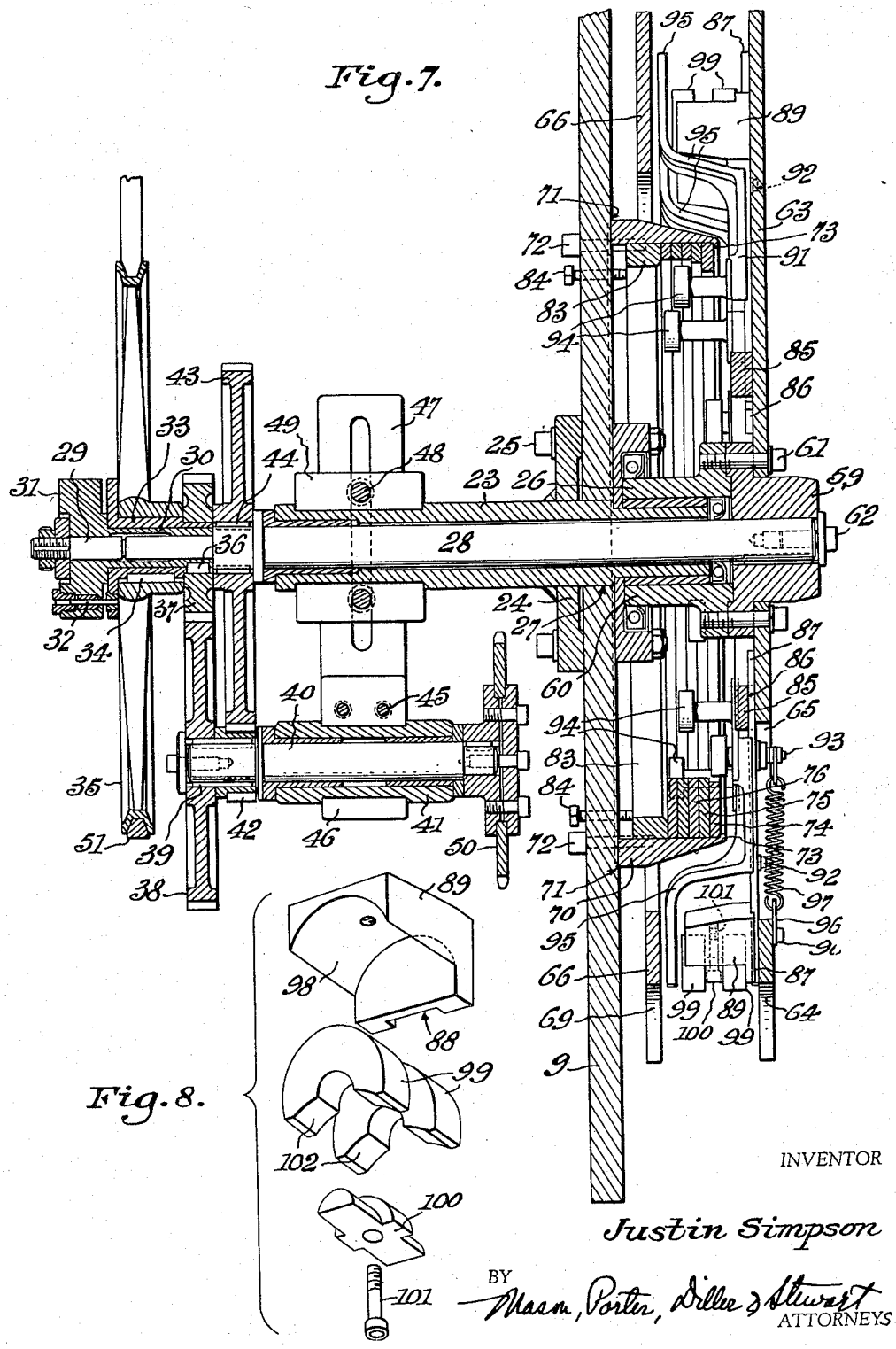

Fig. 8.

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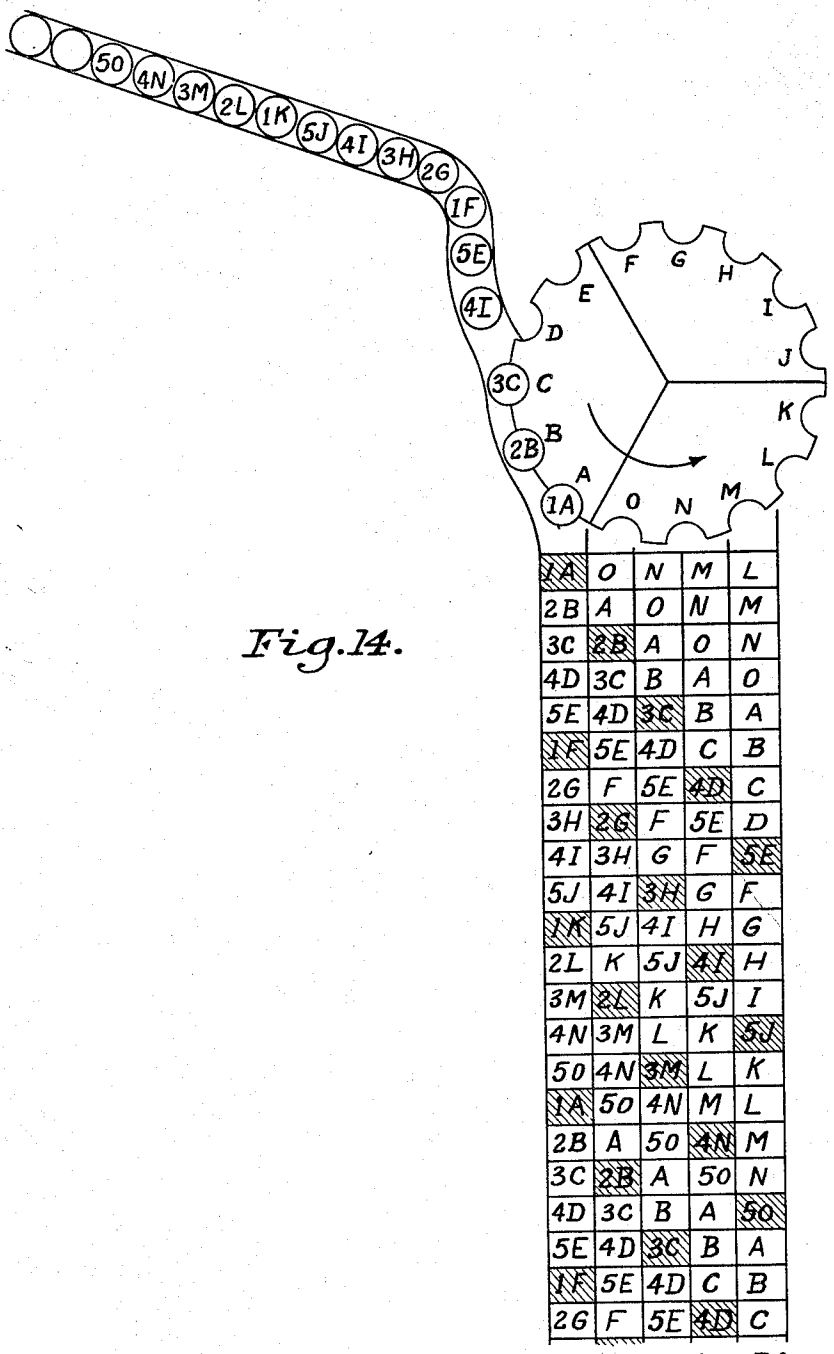

1A	O	N	M	L
2B	A	O	N	M
3C	2B	A	O	N
4D	3C	B	A	O
5E	4D	3C	B	A
1F	5E	4D	C	B
2G	F	5E	4D	C
3H	2G	F	5E	D
4I	3H	G	F	5E
5J	4I	3H	G	F
1K	5J	4I	H	G
2L	K	5J	4I	H
3M	2L	K	5J	I
4N	3M	L	K	5J
50	4N	3M	L	K
1A	50	4N	M	L
2B	A	50	4N	M
3C	2B	A	50	N
4D	3C	B	A	50
5E	4D	3C	B	A
1F	5E	4D	C	B
2G	F	5E	4D	C

Fig. 14.

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2,775,335

CAN DIVIDER

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Application May 13, 1952, Serial No. 287,539

15 Claims. (Cl. 198—31)

The invention relates generally to the art of manufacturing cans and primarily seeks to provide a novel apparatus for receiving cans conveyed in a single line and dividing and delivering them into a plurality of lines.

In modern plants cans are manufactured very rapidly and it is quite common to feed the cans into the lines at a rate well in excess of four hundred per minute. It is often desirable to direct the cans from the single lines into which they are fed as they are manufactured into a plurality of lines, for various purposes, one such purpose being the loading of the cans into bags or wrappers in which they can be shipped and stored with great facility. In one practice of packaging the manufactured cans a plurality of rows of cans are rolled on their sides from individual line chutes or conveyors onto receiving means to form successively arranged layers, and then the layers are superposed to make up package complements of the cans which are suitably packaged in the wrappers or bags in which they are shipped and stored. Obviously the cans must be handled positively and accurately in the receiving thereof from the single line and the dividing and depositing of the same into the plurality of line chutes or conveyors, and it is the purpose of the present invention to provide a novel apparatus capable of performing this can dividing function with the required positiveness and accuracy.

In its more detailed nature the invention seeks to provide a can dividing apparatus of the character stated wherein are included a rotary peripherally pocketed turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of the cans from the turret pockets into said guides.

An object of the invention is to provide an apparatus of the character stated in which the means for holding the cans in the turret pockets comprise magnet means, and the means for bringing about controlled discharging of the cans from the turret pockets include reciprocable ejectors which engage the cans at the proper time and strip them from the holding magnet means to fall into the take-away guides.

Another object of the invention is to provide an apparatus of the character stated in which the can ejectors are in the form of radially reciprocable can engaging members movable in one direction by cam means and in the opposite direction by spring means.

Another object of the invention is to provide an apparatus of the character stated in which the cam and spring means of the ejector member controlling devices are so cooperatively arranged that the retraction of the ejector members is effected by the cam means and the projection of said ejector members is effected by the spring means.

Another object of the invention is to provide an apparatus of the character stated in which the number of the turret pockets and the associated magnet means and ejector means comprises a multiple of the number of the guides into which the cans are to be discharged, and in which the control cam means are arranged so that the cans will be discharged accurately, one can at a time and sequentially into the individual receiving guides, with a smooth rhythm and balancing of the machine parts in motion.

Another object of the invention is to provide an apparatus of the character stated in which the control cam means comprise ring cams corresponding in number to the number of can receiving guides, each cam including an ejector member projection controlling portion and an ejector member retraction controlling portion, the projection controlling portions of the respective cams being progressively placed in the direction of rotation of the turret and in cooperative relation to the divided can receiving guides so as to properly time the discharging of individual cans into said guides.

Another object of the invention is to provide an apparatus of the character stated in which the turret is rotatable about a horizontal axis and the cans are discharged downwardly into the receiving guides, the cans travelling with their axes parallel the turret axis while moving with the turret, and there being included quarter turn twisters which turn the cans as they are falling in the guides so that when they are ultimately delivered they will roll away with their axes horizontally disposed.

A further object of the invention is to provide an apparatus of the character stated in which the ring cams are individually adjustable about a common center so that the discharging of the individual cans can be accurately controlled.

A still further object of the invention is to provide an apparatus of the character stated in which the magnet means comprise permanent magnets disposed opposite the bottom of each turret pocket and shaped to conform partially to the shape of a can in the pocket, and the ejector members have arm end extremities straddling the magnet units in position for engaging each can simultaneously at both ends, said ejector members having rollers thereon for individually engaging the ring cams.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by following the detailed description, the appended claims and the several views illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a front elevation illustrating the novel can dividing apparatus.

Figure 2 is a left end elevation of the apparatus shown in Figure 1.

Figure 3 is a plan view of the apparatus shown in Figure 2.

Figure 4 is a fragmentary vertical cross section taken through the turret structure between the front plate and the rear ring thereof, looking toward said rear ring, and the can ejector members and their guiding means being shown in elevation.

Figure 5 is a view similar to Figure 4, the section being taken on a line behind and excluding the magnets and the ejector members, the ring cams being shown in elevation and the ejector member rollers being shown in engagement therewith.

Figure 6 is a fragmentary vertical cross section illustrating the turret and timing screw driving connections.

Figure 7 is a longitudinal sectional view taken along the axes of the turret shaft and the cooperating jack shaft.

Figure 8 is an exploded perspective view illustrating

one of the magnet saddle, magnet clamp and securing screw sets.

Figures 9 through 13 are fragmentary vertical sectional views taken through the positions of successively placed ring cam engaging rollers and respectively illustrating the relations of the individual rollers and the individual cams effectively engaged thereby.

Figure 14 is a diagrammatic view illustrating a preferred sequence in the discharging of cans from the turret into the receiving guides.

In the example of embodiment of the invention herein disclosed, the improved can divider apparatus includes a frame structure composed of a base plate **5** and parallel upright channel members **6** attached at their lower ends to reinforcing angles **7** and brace plates **8**, and having a main support bar **9** joining the upper ends thereof and secured thereto as at **10**. An upper intermediate support bar **11** is secured as at **12** to upright angle pieces **13** attached to the channels **6**, and a lower intermediate support bar **14** is secured at **15** to said angles. A rear frame plate **16** is secured to the bars **9** and **11** and has an arcuate cut-out **17** at its upper edge. Front plate support members **18** are mounted on spacers **19** projecting from the rear plate **16**, and a front plate **20** is secured on said support members by quick detachable bolts **21** and has an arcuate cut-out **22** in its upper edge aligned with the beforementioned plate cut-out **17**. See Figures 1, 2, 4 and 5.

Attention is directed to Figure 7 from which it will be apparent that a sleeve bearing **23** is provided, the same being welded to a mounting plate **24** which is secured as at **25** to the main support bar **9**. The sleeve **23** has a bearing end extension **26** which is projected through an opening **27** in the support bar **9**.

A driver shaft **28** is rotatably supported in the sleeve bearing **23** and has a reduced diameter end extension **29** about which a driven sleeve **30** is rotatably mounted. The sleeve **30** has a head **31** which is connected by a shear pin **32** with a driver sleeve **33** surrounding the sleeve **30** and which will be rotatable relative to the sleeve **30** at any time a shearing of the pin **32** should occur. The sleeve **33** is keyed as at **34** to a driver pulley **35**, and the sleeve **30** is keyed as at **36** to a small driver pinion **37**. The pinion **37** meshes with a large gear **38** keyed as at **39** on the jack shaft **40** which is rotatable in the bearing **41**. A small pinion **42** also is keyed on the jack shaft **40** and meshes with and drives a large gear **43** which is keyed as at **44** on the main shaft **28**. It will be apparent by reference to Figure 7 that rotation imparted to the pulley **35** will drive the pinion **37** which in turn drives the gear **38** and the pinion **42**, and the pinion **42** imparts rotation to the large gear **43** and the main shaft **28** on which the latter is secured.

It will be apparent by reference to Figures 6 and 7 that the bearing **41** parallels the main shaft **28** and is clamped as at **45** between blocks **46** having slotted bar extensions **47**. The extensions **47** are longitudinally-adjustably secured as at **48** to the blocks **49** which are adjustably clamped on the sleeve bearing **23**. A sprocket **50** is secured on the jack shaft **40** and serves a driving purpose to be described hereinafter, and it will be apparent that by adjusting the arms **47** on their adjustable mountings at **48** the spacing of the shafts **28** and **40** can be varied when it is desired to vary the ratio of the gear-couple, and by adjusting the jack shaft supports **46**, **47** about the axis of the sleeve bearing **23** the position of the sprocket **50** can be varied for chain tightening purposes without disturbing the gear coupling.

The pulley **35** is driven by a belt **51** from the driver pulley **52** on the shaft of the motor **53**. The motor is secured on a base plate **54** which is adjustably clamped at **55** on a stud **56** projecting from a mounting bracket **57** which is secured as at **58** on the main support bearing **9**.

Keyed to the front end of the main shaft **28** is a two-

piece hub composed of the end piece **59** and the bearing piece **60**, the latter having rotative bearing on the sleeve extension **26**, and said pieces **59** and **60** being joined by screws **61**. The two-piece hub is secured against endwise displacement from the main shaft **28** by a screw secured end cap **62**, and a turret plate **63** is secured to the hub by the same screws **61** which secure the assembly of the hub pieces. The turret plate **63** has a plurality of can receiving pockets **64** formed in the periphery thereof, and in this particular illustration fifteen such pockets are provided. The plate **63** also is provided with a plurality of radial slots **65**, one such slot being aligned with each pocket in the manner clearing illustrated in Figure 1 of the drawings. The plate **63** cooperates with the ring **66** in forming the turret rotor which is rotatable with the main shaft **28**, and the ring is secured by bolts **67** and spacer sleeves **68** in assembly relation with said plate. The ring **66** is equipped with can receiving pockets **69** which align with the pockets **64** in the plate **63**.

A support ring **70** is secured in a receiving recess **71** formed in the main support bar **9** by screws **72** and is equipped with an abutment flange **73** as will be clearly apparent by reference to Figure 7. A plurality of ring cams **74**, **75**, **76**, **77** and **78** are mounted on the ring **70** and are held in face contact and against the abutment flange **73**. It will be apparent by reference to Figure 5 of the drawings that each ring has an ejector member lowering or projecting portion **79**, an ejector member projected dwell portion **80**, an ejector member retracting rise portion **81** and an ejector member retracted dwell portion **82**, the respective ring portions **79** being stepped around for successive functioning in a manner and for a purpose later to be described. A clamp ring **83** holds the ring cams in face contact and against the flange **73**, and the ring **83** is held in place by the set screws **84**.

A guide ring **85** is secured to the rear face of the turret plate **63** and has radial slots **86** provided in its front face to serve as guides for the inner ends of radially projectable and retractable ejector bars **87**. The outer ends of the bars **87** are slide guided in registering slots **88** in the front faces of non-magnetic saddle blocks **89** which are screw secured to the turret plate **63** as at **90**. See Figures 1, 3, 7 and 8. Each bar **87** has an ejector arm **91** secured thereto by a screw **92** and a stud **93**, and each stud has a roller **94** mounted on its rear end portion in position for engaging one of the ring cams. It will be apparent by reference to Figures 7 and 9 through 13 that the studs **93** vary in length for presenting the several rollers **94** for individual contact with the several ring cams. The outer end of each arm **91** is offset as at **95** to straddle the respective saddle block **89**, and the end extremity of each arm **91** is in cross alignment with the outer end extremity of the cooperating ejector bar **87** for a purpose that will become apparent as this disclosure progresses.

An anchor plate **96** is secured in position by the same screws **90** which secure the saddle blocks **89** on the turret plate **63**, and to each said plate **96** is anchored a retractile spring **97**, the free end of which is attached to the associated stud **93** so as to be effective to hold the particular roller **94** against the cooperating ring cam and to constantly tend to project the cam ejector member comprising the bar **87** and the cooperating arm **91**, **95**.

Each saddle block **89** has a saddle recess **98** in which a pair of permanent magnets **99** are secured in parallel spaced relation by a cruciform brass clamp bar **100** held in place by a single screw **101**. See Figure 8. The magnets have arcuate recesses **102** therein which substantially conform to the external surfaces of the cans C which are to be held in the turret pockets in the manner clearly illustrated in Figure 4.

A supporting frame structure generally designated **103** is adjustably mounted as at **104** on the main support

bar 9 and has upper and lower bearings 105 and 106 secured thereon and providing rotative bearing for an uprightly disposed timing screw 107. See Figures 1 through 5. The screw 107 receives the cans C from the single line feedway 108 and times them into the turret pockets. The screw is opposed by a presser plate 109 which is pivotally supported at 110 and spring pressed toward the screw as at 111, movement of the plate toward the screw being limited by the stop means 112. A worm gear 113 is provided at the lower end of the screw and is driven by a worm 114 mounted on a shaft 115 having a sprocket 116 thereon which is driven through a chain 117 from the previously mentioned sprocket 50. It will be apparent by reference to Figure 6 that adjustment of the bearing supporting devices 47, 49 about the center of the bearing sleeve 23 will serve to tighten or loosen the chain 117, and adjustment of the motor supporting plate 54 about the stud 56 will serve to tighten or loosen the pulley driving belt 51.

As will be apparent by reference to Figures 1, 2 and 4 of the drawings, five sets of chute plates or can receiving guides are provided, and these are respectively designated 118, 119, 120, 121 and 122. These guides are supported on individual upper mounting rings 123 which are in turn attached to plates 124 secured to the support bar 11. To each ring 123 is secured the upper end of a quarter turn twister generally designated 125, and the twisters are attached at their lower ends to mounting rings 126 secured to plates 127 which are in turn secured to the lower bar 14. Each twister 125 delivers into a roll away chute 128 in which the cans roll away on their sides. The guides 118 through 122 receive the cans with their axes parallel the turret axes and the twisters turn the cans one quarter turn so as to deliver them in position for rolling on their sides down the chutes 128 best shown in Figures 1 and 2.

On a frame plate 129 adjustably secured at 130 on the main support bar 9 a pair of stripper cams 131 are supported in parallel spaced relation, one thereof being disposed outwardly of each of the turret plates 63 and ring 66 as will be apparent by reference to Figures 1, 3, 4 and 5 of the drawings. The stripper cams 131 are supported on bolts 132, and their stripper surfaces 133 are disposed to strip from the turret pockets any cans which might not be discharged from the magnets 99 by the ejector bars 87 and arms 91, 95.

It is to be understood that the number of pockets formed in the turret constitutes a multiple of the number of guides into which the cans are to be discharged. In other words, there are fifteen pockets and five guides. It will be noted that there are also five of the ring cams 74 through 78, and these are placed with their can discharge controlling portions 79 stepped around in cooperative relation to the guides 118, 119, 120, 121 and 122. In this manner the discharging of the cans is arranged in sequence, and the can ejecting devices are controlled by the cams to function in cooperation as the respective cans are approaching the chutes or guides into which they are to be received. The several cams are adjustably mounted on the supporting ring 70 so that the individual positions can be adjusted to assure accurate timing of the ejection of the cans. While the ring cams are adjustably mounted, as aforesaid, to permit variations in the setting thereof, it is preferred that they be so arranged as to cause the cans to be discharged from the turret one at a time, or sequentially. Thus only one spring 97 is cam released during one unit distance of movement of the turret and only one ejector is projected for can discharging purposes during such travel, and therefore the cans are sequentially and accurately discharged into the individual guides with a smooth rhythm and balancing of the machine parts in motion. The prefered sequence of the discharging of cans is diagrammatically illustrated in Figure 14.

In Figure 14, the turret is diagrammatically indicated with its fifteen pockets, this being three times the number of the can receiving guides. The guides are five in number and are defined on the diagrammatic view by the six vertical lines. The turret pockets are designated in three consecutive groups each composed of five consecutive pockets A through E, F through J and K through O, it being apparent that the five consecutively arranged pockets of each group will discharge the cans received therein sequentially into the five receiving guides. Therefore, the fifteen cans shown in the diagram constitute the number of cans which will be received and discharged by the turret pockets during one complete rotation thereof.

The horizontal lines traversing the vertical lines indicating the can receiving guides designate unit distances of movement of the turret pockets, and each shaded block indicates the time of delivery of a can into the particular can receiving guide designation. The three groups of cans making up the fifteen are designated 1A—2B—3C—4D and 5E, 1F—2G—3H—4I—5J, and 1K—2L—3M—4N—50, these designations being made up of the base numerals 1 through 5 for the cans of each group of five and the letters A through E, F through J and K through O of the turret pocket groups into which the respective can groups are received and from which they will be discharged.

By observing the designations in the blocks defined by the vertical and horizontal lines, the timing of the delivery of each can can be traced. The letters standing alone designate empty pockets, and the numbers with letter exponents designate the cans of the respective groups and the pockets of the turret in which they are received and from which they are delivered.

A glance at the shaded blocks will make it apparent that the cans of the groups are discharged sequentially, each successive can being delivered into a separate guide. It will be noted that the delivery of the cans of a given group of five will commence before the delivery of the preceding group will have been completed, and also that the delivery timing is controlled by placement of the cams so that at no time will two or more cans be delivered simultaneously. One can will be discharged at each unit distance of travel of the turret, and the cans of each group will be discharged sequentially.

It will be apparent by reference to Figures 5, 7 and 9 through 13 that the cam roller 94 on the shortest stud (Figure 9) is the first one to roll down the ejection controlling portion 79 of the foremost cam 74 to bring about a delivery of a can into the first chute or guide 118, and this roller is the last one to be retracted in its orbit of rotation by the rise portion 81 of said foremost cam. Conversely the last roller 94 to engage a can delivery controlling cam portion 79 is the one mounted on the longest stud (Figure 13), and this will be the first roller to be retracted by the lifting portion 81 of the respective ring cam. This particular arrangement and formation of the cams makes it possible to provide the desired adjustment of the cam positions so as to assure accuracy in the delivery of the cans into the guides into which they are intended to fall.

As each can C gravitates down the single line feedway 108 it will be timed by the screw 107 into one of the turret pockets 64, 69 and will be held in the pocket by the respective magnet means 99, 102 until the particular pocket approaches the particular one of the guides 118 through 122 into which the can is to be delivered, at which time the respective roller 94 will roll down the cam portion 79 so as to allow the spring 97 to project the ejector member 87, 91, 95 to strip the can from the magnet means and deliver it into the particular receiving guide. After each can has been thus discharged from the turret pocket the respective roller will roll along the dwell portion 80 and then be lifted by the respective lifting portion 81 of the cam onto the dwell 82 which will be effective to hold the ejector member in its retracted position.

It is to be understood that the apparatus disclosed herein is but an example form of apparatus and that the same may be variously changed without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. In apparatus of the character described, a rotary turret rotatable about a horizontal axis and having individual well defined can receiving pockets equidistantly spaced about its periphery, means for continuously rotating the turret, means driven positively in timed relation to the turret rotation for feeding cans from a single line individually into the turret pockets, a plurality of uprightly disposed guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means on and movable with the turret for holding cans in the turret pockets until they approach the guides in which they are to be received, and means engageable with each individual can in each individual turret pocket for bringing about controlled and positive ejection discharging of cans from the turret pockets into said guides.

2. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for continuously rotating the turret, means driven positively in timed relation to the turret rotation for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled and positive ejection discharging of cans from the turret pockets into said guides, said turret being rotatable about a horizontal axis with the cans travelling with their axes parallel the turret axis while in the turret pockets, and said can delivering guides including gravity roll away portions over which the cans roll away with their axes horizontally disposed, and quarter turn twisters into which the cans fall from the turret pockets and which turn the cans a quarter turn and deliver them individually into said roll away portions.

3. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including means for bringing about a releasing of the cans from the magnet means as the respective pockets are approaching the guides in which they are to be received.

4. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including reciprocable ejectors and means for moving the ejectors in timed relation to the rotation of the turret to cause them to engage the cans and strip them from the magnet

means as the respective pockets are approaching the guides in which the cans are to be received.

5. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including radially reciprocable ejector members and cam means for moving them in one direction and spring means for moving them in the opposite direction in timed relation to the rotation of the turret, said ejector members being engageable with the cans to strip them from the magnet means as the respective pockets are approaching the guides in which the cans are to be received.

6. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including radially reciprocable ejector members and cam means for controlling reciprocation of the ejector members and spring means constantly holding the ejector members against the cam means and constantly tending to project them against the cans to eject them from the pockets, said cam means being disposed to permit each ejector member to move into can ejecting position as the particular pocket approaches the guide in which the particular can is to be received and to positively retract each ejector member after the particular can has been ejected.

7. Apparatus as defined in claim 1 in which the number of the turret pockets comprises a multiple of the number of guides into which the cans are to be discharged and in which the means for bringing about controlled and positive ejection discharging of cans from the turret pockets into the guides is timed to discharge the cans from the turret pockets in groups corresponding in number to the number of guides with all of the cans of each group being discharged sequentially.

8. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including means for bringing about a releasing of the cans from the magnet means as the respective pockets are approaching the guides in which they are to be received, the number of turret pockets comprising a multiple of the number of guides into which the cans are to be discharged, and said means for bringing about a releasing of the cans from the magnet means being timed to discharge the cans from the turret pockets in groups corresponding in num-

ber to the number of guides with the cans of each group being discharged sequentially.

9. In apparatus of the character described, a rotary turrent having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including radially reciprocable ejector members and cam means for controlling reciprocation of the ejector members and spring means constantly holding the ejector members against the cam means and constantly tending to project them against the cans to eject them from the pockets, said cam means being disposed to permit each ejector member to move into can ejecting position as the particular pocket approaches the guide in which the particular can is to be received and to positively retract each ejector member after the particular can has been ejected, the number of turret pockets comprising a multiple of the number of guides into which the cans are to be discharged, and said cam means also being disposed to control the ejection of the cans in groups corresponding in number to the number of guides with the cans of each group being ejected sequentially.

10. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including radially reciprocable ejector members and spring means constantly holding the ejector members against the cam means and constantly tending to project them against the cans to eject them from the pockets, said cam means comprising ring cams corresponding in number to the number of can receiving guides, each cam including an ejector member projection controlling portion and an ejector member retraction controlling portion, the projection controlling portions of the respective cams being progressively placed in the direction of rotation of the turrent and in cooperative relation with the spacing of said guides so that the cans will be discharged into the guides individually with no two cans being ejected from the turrent at the same time.

11. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including radially reciprocable ejector members and cam means for controlling reciprocation of the ejector members and spring means constantly holding the ejector members against the cam means and constantly tending to project them against the cans to eject them from the pockets, said cam means comprising ring cams corresponding in number to the number of can receiving guides, each cam including an ejector member projection controlling portion and an ejector member retraction controlling portion, the projection controlling portions of the respective cams being progressively placed in the direction of rotation of the turret and in cooperative relation with the spacing of said guides so that the cans will be discharged into the guides individually with no two cans being ejected from the turret at the same time, said ring cams being individually adjustable about a common center so that the discharging of the individual cans can be accurately timed.

12. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising magnet means, and said means for bringing about controlled discharging of the cans from the turret pockets including means for bringing about a releasing of the cans from the magnet means as the respective pockets are approaching the guides in which they are to be received, and means also being included for stripping from the pockets any cans which may remain therein after the pockets have passed the receiving guides.

13. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising permanent magnets disposed opposite the bottom of each turret pocket and shaped to conform partially to the shape of a can in the pocket, and said means for bringing about controlled discharging of the cans from the turret pockets including radially reciprocable ejector members having outer end extremities spaced to straddle the magnets in position for engaging each can simultaneously at both ends while stripping the same from the magnets.

14. In apparatus of the character described, a rotary turret having can receiving pockets equidistantly spaced about its periphery, means for rotating the turret, means for feeding cans from a single line individually into the turret pockets, a plurality of guides for receiving cans in individual lines from the turret pockets and directing them away from the turret, means for holding cans in the turret pockets until they approach the guides in which they are to be received, and means for bringing about controlled discharging of cans from the turret pockets into said guides, said can holding means comprising permanent magnets disposed opposite the bottom of each turret pocket and shaped to conform partially to the shape of a can in the pocket, and said means for bringing about controlled discharging of the cans from the turret pockets including radially reciprocable ejector members having outer end extremities spaced to straddle the magnets in position for engaging each can simultaneously at both ends while stripping the same from the magnets, and a saddle forming a support for the permanent magnet means associated with each turret pocket and secured to the turret, each said saddle having means forming at least a partial guide means for the associated ejector member.

15. Apparatus as defined in claim 1 in which the number of the turret pockets comprises at least three times the number of guides into which the cans are to be discharged, and in which the means for bringing about controlled and positive ejection discharging of cans from the turret pockets into the guides is timed to discharge the cans from the turret pockets in groups corresponding in number to the number of guides with all of the cans of each group being discharged sequentially and with the commencement of the discharging of the cans of a given group preceding the termination of the discharging of the cans of the next preceding group but with each can of all groups being discharged from the turret at an instant separate and apart from the discharging of all other cans.

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