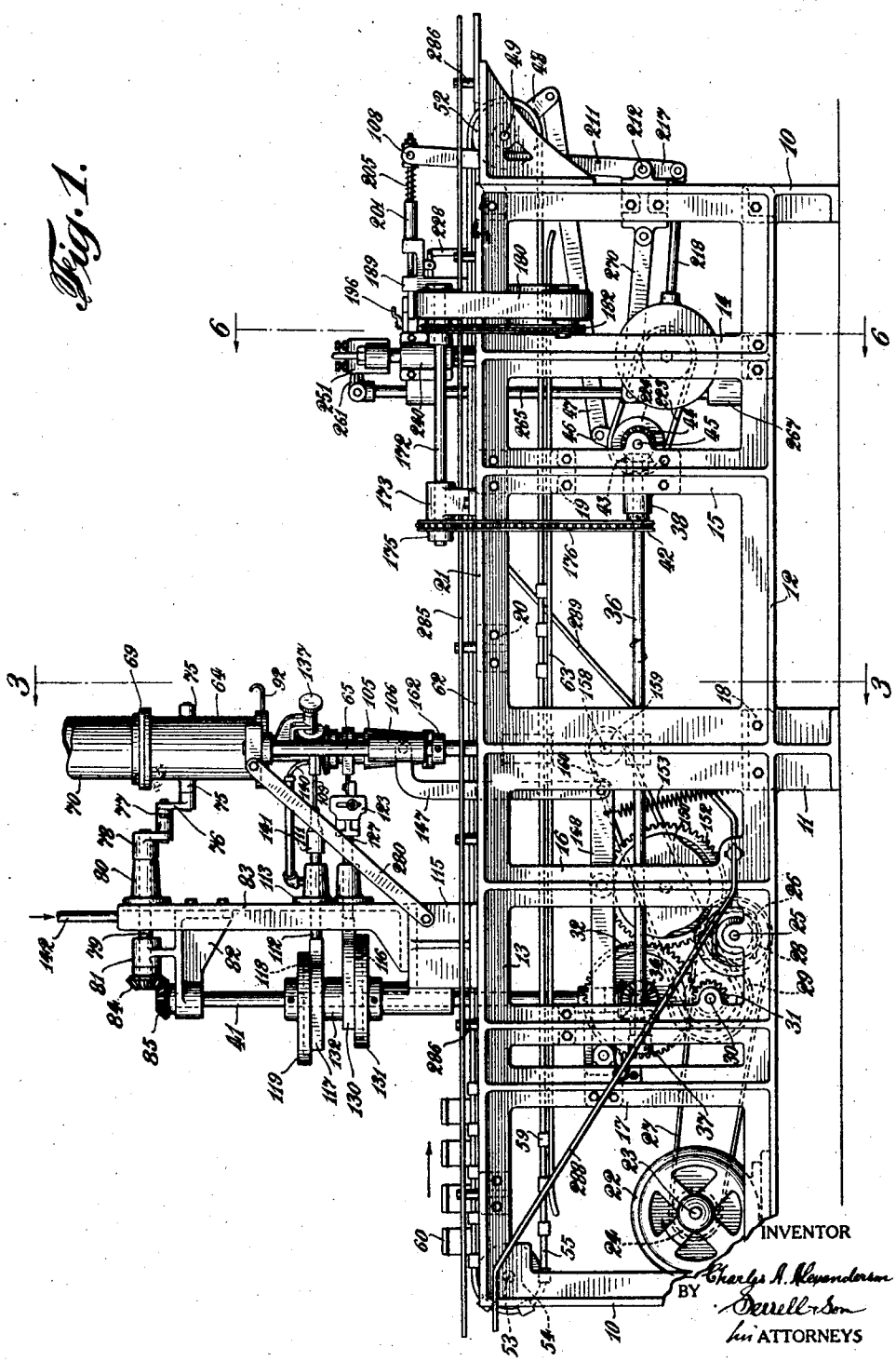
Sept. 14, 1926. 1,599,981

C. A. ALEXANDERSON

APPARATUS FOR CAPPING CANS

Filed Dec. 17, 1924 8 Sheets-Sheet 1

Fig. 1.



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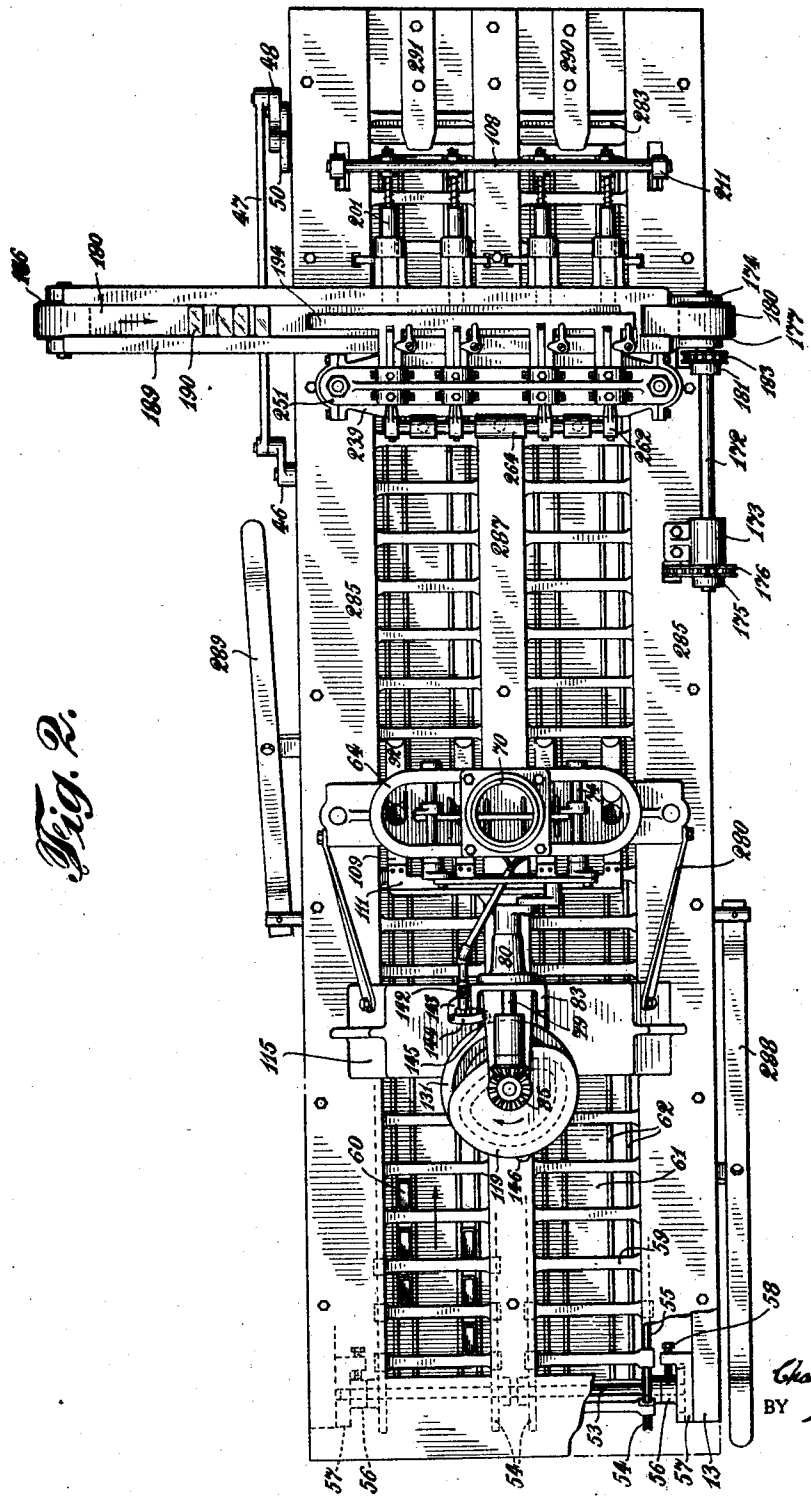


Fig. 2.

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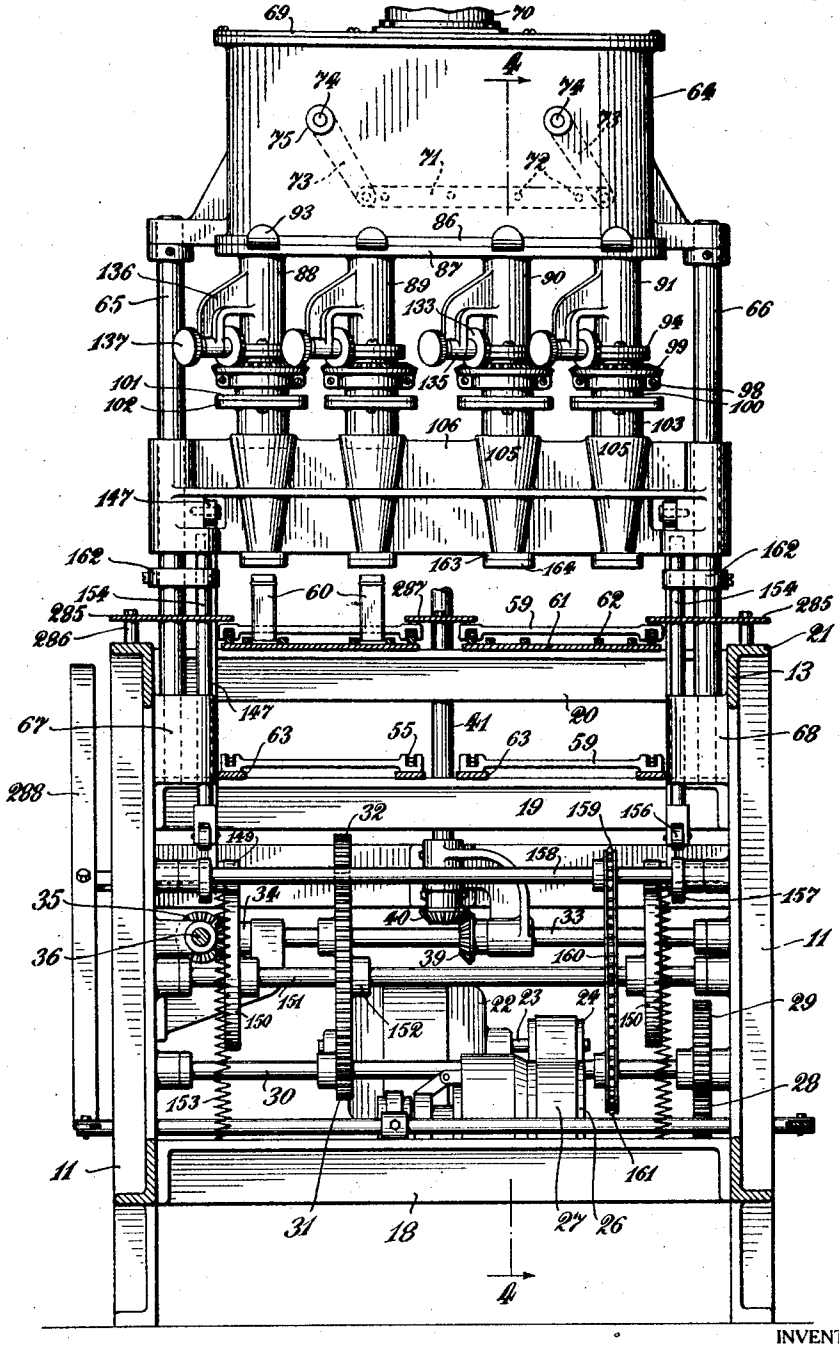


Fig. 3.

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Fig. 5.

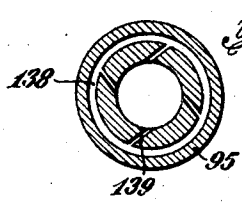


Fig. 4.

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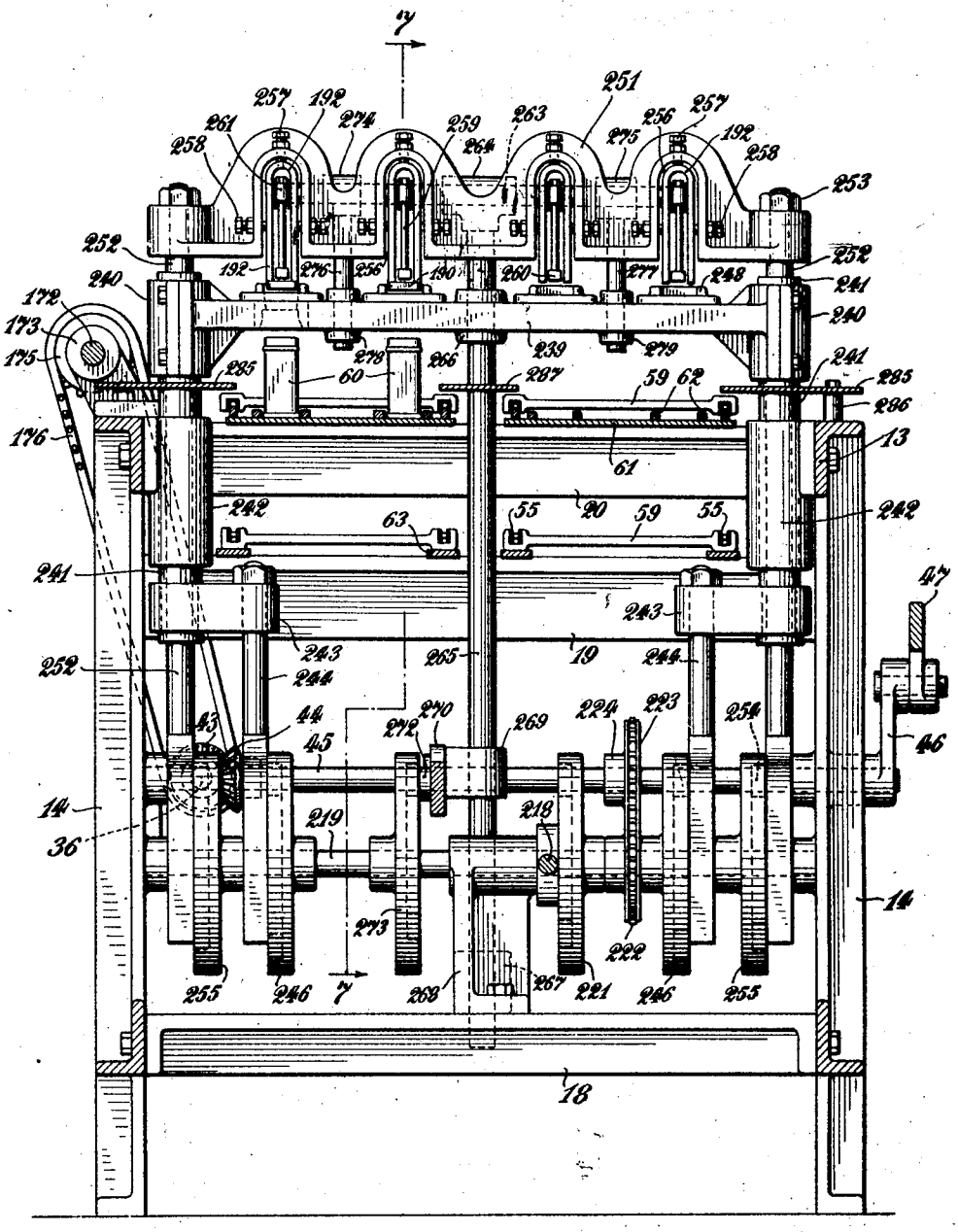


Fig. 6.

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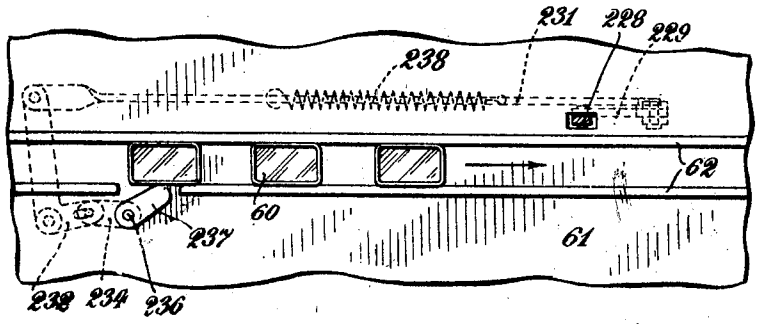


Fig. 8.

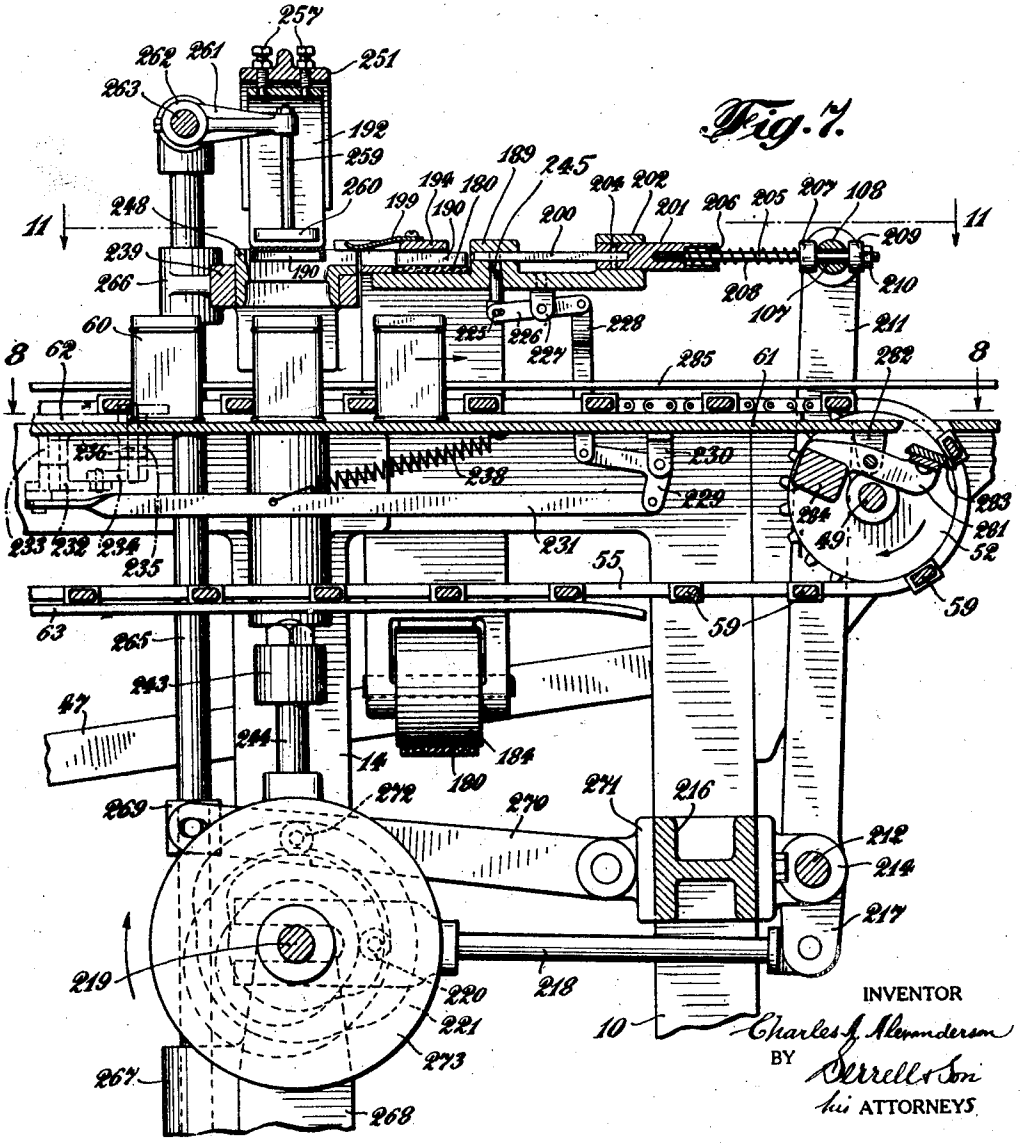


Fig. 7.

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APPARATUS FOR CAPPING CANS

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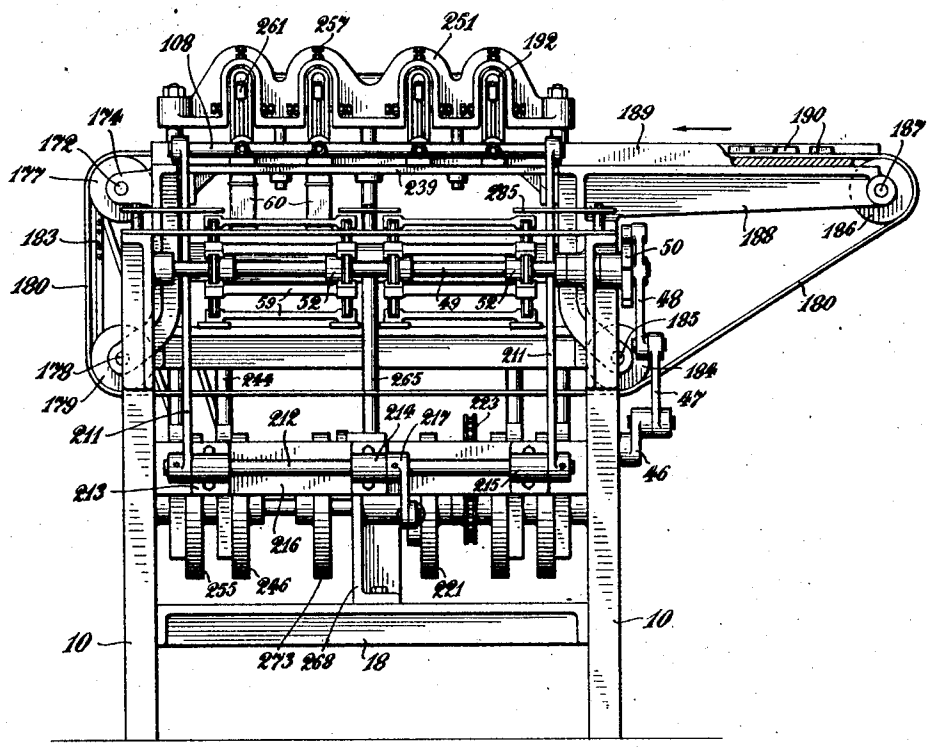


Fig. 9.

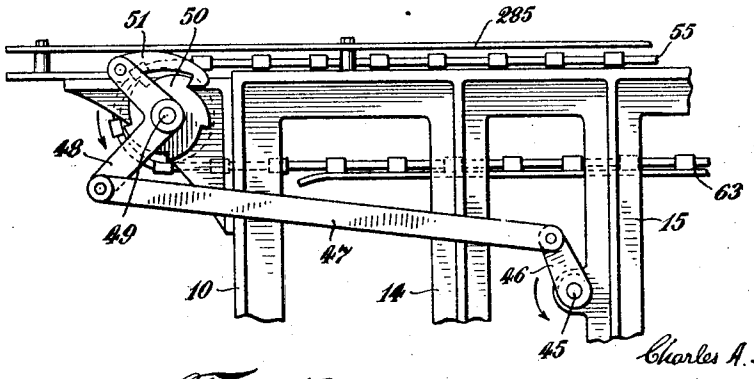


Fig. 10.

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APPARATUS FOR CAPPING CANS

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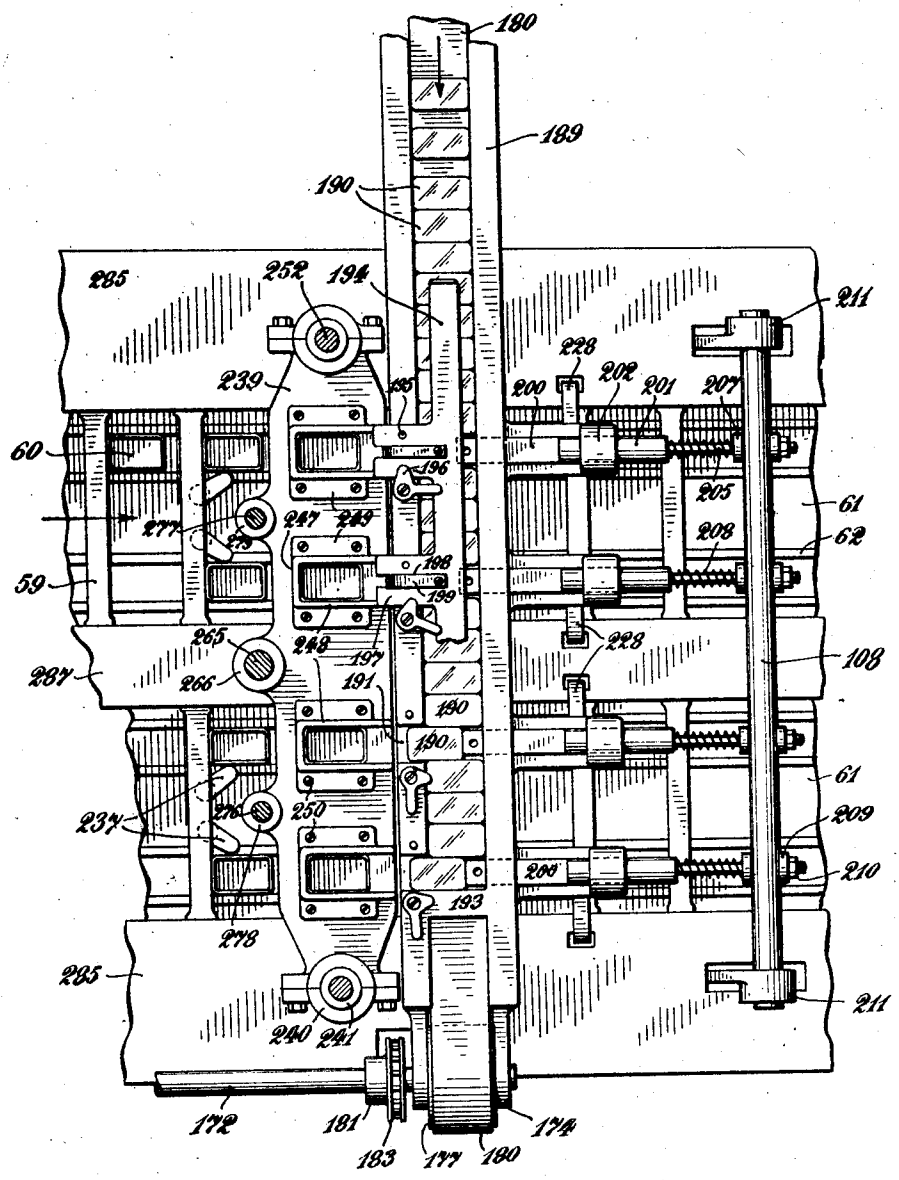


Fig. 11.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR CAPPING CANS.

Application filed December 17, 1924. Serial No. 756,385.

My invention relates to apparatus for capping cans or other receptacles provided with metallic caps or covers, after the receptacles have been filled, and its several objects are, to provide magnetic means for holding the caps or covers in spaced alignment with the filled receptacles; means for lowering such holding means whereby the covers or caps are attached to the receptacles; means for pressing the caps or covers upon the receptacles when the holding means are raised to a normal position; means for feeding the receptacles; means for feeding the caps or covers, and means for preventing the feeding of the caps or covers, when no receptacle is in position to receive it. Other features of novelty will appear by the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the machine embodying my invention.

Fig. 2 is a top plan view of the same.

Fig. 3 is a vertical section on broken line 3—3 of Fig. 1.

Fig. 4 is a sectional view on broken line 4—4 of Fig. 3.

Fig. 5 is a detail section on line 5—5 of Fig. 4.

Fig. 6 is a sectional view on line 6—6 of Fig. 1.

Fig. 7 is a sectional view on line 7—7 of Fig. 6.

Fig. 8 is a section on line 8—8 of Fig. 7.

Fig. 9 is an elevation of the delivery end of the machine.

Fig. 10 is a side view of the delivery end of the machine, partly broken away and of the side opposite that shown in Fig. 1, and

Fig. 11 is a top view on line 11—11 of Fig. 7.

While it will be understood that the receptacles may be filled by any suitable means before the caps or covers are attached to them by my present device, I prefer to make use of filling mechanism mounted upon the same frame with my improved capping mechanism as herein illustrated and described, and which filling mechanism forms the subject matter of my copending application filed February 27, 1926, Serial No. 91,037.

The frame of the machine comprises the corner posts 10, central side posts 11, lower longitudinal beams 12, upper longitudinal beams 13, connected by the uprights 14, 15, 16 and 17, and cross beams 18, 19 and 20, the top 21, being flat.

22 indicates a motor supported upon the frame, and provided with a shaft 23 upon which is fixed a pulley 24.

25 indicates a shaft mounted in bearings in the frame upon which is fixed a pulley 26. A belt 27 passes over these pulleys 24 and 26. A pinion 28 is fixed to the shaft 25 which meshes with a gear 29 fixed to a shaft 30, mounted in bearings in the frame. A pinion 31 is fixed to the middle of the shaft 30, which engages a gear 32 fixed to a shaft 33. A bevel gear 34 on one end of the shaft 33 engages a bevel gear 35, on a shaft 36, mounted in bearings 37 and 38 in the frame. A bevel gear 39 fixed to the center of the shaft 33, engages a bevel gear 40 on the lower end of a vertical shaft 41. Adjacent one end of the shaft 36, and fixed thereto, is a sprocket 42.

A bevel gear 43 is fixed to the end of the shaft 36 which engages a bevel gear 44, on a shaft 45 mounted in bearings in the uprights 15, and on the other end of this shaft 45 is a crank 46 pivoted to one end of a connection rod 47, the other end of such rod being pivoted to a bell crank lever 48 loosely mounted on the end of a shaft 49 fixed to which shaft is a ratchet wheel 50. A pawl 51 is pivoted to the other end of the bell crank lever 48 and engages the ratchet wheel 50.

Fixed to the shaft 49 in spaced relation are four sprockets 52. 53 is another shaft at the other end of the machine to which are fixed four sprockets 54; chains 55 pass over these sprockets and the sprockets 52. It will thus be seen that the chains 55 which carry the cans forward are given an intermittent movement.

The shaft 53 is mounted in bearings 56 which are positioned in slots in brackets 57, and these bearings can be adjusted to take up any slack in the chains 55 by means of the set screws 58.

Two of these chains 55 on each side of the machine are connected together by cross bars 59 between which the cans 60 are placed and are carried along thereby, sliding upon the top plates 61. The chains 55 also ride over these plates. There are longitudi-

nal guide rails 62 on each side of each row of cans. These guide rails are attached to the top of the plate 61.

Secured to the top of the cross beams 19 are four longitudinal strips 63 over which the chains ride below the bed of the machine and are supported thereby without sagging.

64 denotes a receptacle for the filling material, supported on opposite sides by upright rods 65 and 66, the lower ends of which are reduced in diameter and set into sockets 67 and 68, upon the frame of the machine. This receptacle is preferably of oblong shape having a cover 69 in the center of which is a tube 70 through which the filling material is supplied.

An agitator is arranged within the receptacle 64, consisting of a strip 71 provided with spaced pins 72, extending from both sides. This strip 71 is pivotally connected at each end to links 73. The other ends of these links are connected to two spaced rods 74 which pass through holes in the receptacle 64 and extend a short distance therefrom on both sides, there being bearings 75 on the receptacle for one end, while the other ends are connected to cranks 76, connected by a link 77 which in turn is pivotally connected to a crank 78, fixed upon one end of a shaft 79, which passes through bearings 80 and 81, the bearing 81 being supported by a bracket 82 fixed to an upright 83 supported upon the top of the frame of the machine. A bevel gear 84 is fixed to the other end of the shaft 79, and meshes with a bevel gear 85 fixed to the upper end of the vertical shaft 41.

It will be seen that during the rotation of the shaft 41, the agitator will be kept in motion, the pins 72 constantly stirring the filling material contained in the receptacle 64.

An integral flange 86 extends around the lower end of the receptacle 64 and is seated upon a plate 87 of corresponding shape, to which it is secured by bolts, or any other suitable means.

This plate 87 is provided with four spaced integral depending tubes 88, 89, 90 and 91, communicating at their upper ends with the interior of the receptacle 64. Such communication may be shut off when desired by means of four slides 92, one for each tube, which pass through slots between the flange 86 and plate 87 and are each provided at their outer end with a finger grip 93.

Each of the tubes 88, 89, 90 and 91 is provided with an annular flange 94 at its lower end, which is seated upon the top of another tubular member 95, to which it is secured by screws 96 or any other suitable means. These members 95 are each provided with an annular groove, into which is fitted the inwardly flanged upper end of a coupling 97, which couplings are each made in two equal parts, held together by screws or bolts 98. These couplings surround the members 95 at a predetermined distance below the upper ends of said members 95, being interiorly threaded below their flanged upper ends, and are also provided with bevel gears 99 on their outer upper surfaces. The threaded interior of the couplings 97 engage screw threads on the outer surface of hollow sections 100, which sections are each provided with an annular flange 101 at their lower ends, which seat upon similar flanges 102, upon the upper ends of other tubular members 103, the flanges being secured together by bolts or screws 104, or other suitable means.

The open lower ends of these members 103 extend into the open upper ends of hoppers 105, which are integral with a bracket 106 guided on each side by the vertical rods 65 and 66.

109 indicates four shut off plates, one of which passes through a slot in the flange 94, on each of the tubes 88, 89, 90 and 91, being rounded on the end entering such tubes to conform to the interior surface thereof. The other ends of these shut off plates 109 being secured to lugs 110 integral with a bracket 111 which carries all four lugs. A rod 112 is fixed to the center of the bracket 111 and is supported in a tubular bearing 113 fixed to the upright 83 bolted to the bridge 115 fixed to the top of the frame on each side of the machine.

The free end 117 of the shaft 112 is forked and straddles the vertical shaft 41.

A roll 118 is provided in the forked end of the shaft 112, which roll acts within a groove in the under surface of a cam 119 fixed to the shaft 41.

It will thus be seen that during the rotation of the shaft 41, the communication between the tubes 88, 89, 90 and 91, and the tubular members 95, will be alternately opened and closed.

The under surfaces of the flanges 101 on the hollow sections 100 are slotted on one side, through each of which slots a shut off plate 120 is slidable in such manner as to open and close communication between the hollow sections 100 and the tubular members 103.

The outer ends of these shut off plates 120 are each connected to one end of a link 121 by screws or bolts 122, or other suitable means, while the other ends of such links are connected to bearings 123, each provided with a vertical slot 124, in which the pins 125 connecting the links 121 are slidable. These bearings 123 are integral with a bracket 126.

A rod 127 is secured to the bracket 126; this rod passes through a tubular bearing 128, fixed to the upright 83; the free end 130 of said rod is forked and straddles the ver-

tical shaft 41. A roll 116 is provided in this forked end of the rod, which roll acts within a groove in the upper surface of a cam 131 fixed to the shaft 41.

A sleeve 132 surrounds the shaft 41 between the forked ends of the shafts 112 and 127.

The cams 119 and 131 are positioned upon the shaft 41 so that the respective shut off plates 109 and 120 are operated alternately, that is, when the upper plates 109 close the bottoms of the tubes 88, 89, 90 and 91, the lower plates 120 are withdrawn from over the tops of the tubular members 103, thereby allowing any filling material contained in the the members 95 to drop by gravity into the members 100 and 103, from which it is discharged into the hoppers 105. The members 95 and 100 are at all times in communication and form the measuring chambers for the filling material.

The capacity of these chambers may be regulated by means of the threaded connection of the members 100 with the couplings 97, there being bevel gears 133 meshing with each of the bevel gears 99 on said couplings, the gears 133 being upon one end of shafts 134 in bearings 135 supported by the brackets 136, integral with or connected to the outer surface of each of the tubes 88, 89, 90 and 91. The other end of each shaft 134 is provided with a thumb nut 137, by means of which the bevel gears 133 may be operated by hand.

The turning of the gears 133 in one direction raises the members 100 and 103, thus lessening the holding capacity of the members 95 and 100, while the turning of the gears 133 in the opposite direction lowers said members 100 and 103, thus restoring the full holding capacity of the members 95 and 100. These movements of the members 100 and 103, is allowed for without interference with the movements of the shut off plates 120, by means of the slotted bearings 123 for the ends of the connecting links 121.

While the machine is designed to fill a plurality of rows of cans simultaneously, it will be seen that by the adjustability of the measuring chambers, the quantity of filling material supplied to the cans may be varied in the different rows, if desired.

It is very desirable that when communication between the members 100 and 103 is established, there should be a full discharge of the filling material contained in the members 95 and 100, and for accomplishing this purpose, I provide an annular groove 138 connecting with the interior of the members 95 by diagonal passages 139. One end of an air tube 140 passes through a hole in each of the flanges 94, on the tubes 88, 89, 90 and 91, and communicates with each of the annular grooves in the members 95. The other ends of these air tubes 140 connect with a horizontal pipe 141 which connects with a vertical pipe 142, in which there is a valve 143 controlled by a lever 144 on the free end of which is a roll 145, which contacts with a projection 146 upon the periphery of the cam 119. The pipe 142, is connected with a compressed air tank, not shown. The contact of the roll 145 with the projection 146 on the cam 119, occurs at the moment that the shut off plates 120 are withdrawn uncovering the tubular members 103, whereby a puff of compressed air is forced into each of the hollow members 95, through the pipe 141, tubes 140, annular grooves 138, and diagonal openings 139, as the filling material is being discharged into the tubular members 103. The diagonal positioning of the air passages 139 impart a whirl to the current, which assures a full and clean discharge of the filling material from the members 95.

The hoppers 105, are given an up and down movement by means of links 147, pivotally attached at their upper ends to the bracket 106 carrying such hoppers, the lower ends of the links 147 being each pivotally connected to one end of levers 148, in the middle of each of which is a roll 149, which ride on cams 150, fixed on a shaft 151 supported in bearings in the frame of the machine. A gear 152 fixed on the shaft 151 is driven by the gear 32 on shaft 33. Spiral springs 153 normally hold down the levers 148, one end of such springs being attached to such levers, while their other ends are attached to the frame of the machine. Vertical rods 154, one on each side of the machine, are connected at their upper ends to the bracket 106, and slide in the bearings 67 and 68.

A roller 156 is attached to the lower end of the rods 154, which rollers come into contact with cams 157 fixed to a cross shaft 158. A sprocket 159 fixed on the shaft 158 is driven by a chain 160 passing over a sprocket 161 fixed to the shaft 30. Stop collars 162 secured to the vertical rods 65 and 66 limit the downward movement of the bracket 106.

The lower end of each of the hoppers 105 is provided with an annular flange 163, to the bottom of which is secured in any suitable manner, a ring 164, its interior being outwardly inclined, and the opening being of a size to fit over the tops of the cans 60 when the hoppers are lowered.

In tne path of each row of cans, the top 21 or bed of the machine is provided with an opening directly in alignment with the hoppers 105. Each of these openings are closed by a plate 166, the top surface of which is normally flush with the bed of the machine, so that there is no possibility of the cans striking it or being checked thereby in

their forward movement over the bed. These plates 166 are attached to the upper ends of vertical rods 167, supported in hangers 168 provided with bottom hubs 169 through a central bore in which the lower ends of the rod 167 extend, there being a nut or collar 170 fixed to the lower projecting end of each rod.

A spiral spring 171 surrounds each rod 167 between the plates 166 and upper surface of the hubs 169.

Each can as it is receiving the filling material from the hoppers 105, rests upon one of these plates 166, so that it has a resilient support, and no injury can be made to a can even if it is a trifle taller than the average height of the cans being fed; furthermore a slight shaking is given the cans which tends to settle and even their contents.

172 denotes a horizontal shaft, one end being mounted in a bearing 173 fixed to the top of the frame, and its other end having a bearing in a bracket 174. A sprocket 175 is fixed to one end of the shaft 172, which is driven by a chain 176 passing over the sprocket 175, and a sprocket 42 on the shaft 36. A pulley 177 is fixed to the shaft 172 between the uprights of the bracket 174.

178 indicates a short shaft having bearings in the lower spaced projections on the lower end of the bracket 174. A pulley 179 is fixed to the shaft 178 and a belt 180 passes over the pulleys 177 and 179. 181 is a sprocket on the shaft 172, and 182 is a sprocket on the shaft 178, and a chain 183 passes over the sprockets 181 and 182. The belt 180 also passes over a pulley 184 on a shaft 185 and over a pulley 186 on a shaft 187. Shafts 185 and 187 are journaled in a bracket 188 fixed to the frame. A cross plate 189 is seated on top of the brackets 174 and 188 and this cross plate 189 is centrally channeled longitudinally, in which the endless belt 180 carrying the can covers 190 slides, and this channel or groove also forms a guide for the covers. At one side of the channel in the plate 189 there are cut out spaces or openings 191 for allowing the covers 190 to be pushed under the horse shoe magnets 192, there being a stop plate 193 adjacent one end of the plate 189 for holding the covers in alignment with the openings 191. A strip 194 is secured to one side of the plate 189 by pins 195 or other suitable means. Latches 196 are pivoted to one side of the plate 189 to hold the strip 194. This strip 194 is provided with projections 197 which are provided with slots 198 in which are secured flat springs 199 which bear upon the tops of the can covers, while the covers are being pushed under the magnets 192. One end of each of four spaced flat pusher strips 200 pass through slots in the opposite side of the plate 189, their other ends being connected to one end of short round members 201 by pins 204 or other suitable means, which members are slidable in bearings 202 integral with the plate 189. The other end of each of these members 201 is provided with a recess 206 which receives one end of a rod 205 which is threaded and screwed into a threaded portion of said members. A collar 207 is loosely mounted on each of the rods 205, there being a spiral spring 208 surrounding such rods between such collars and the bottoms of the recesses 206.

The other ends of the rods 205 extend through openings 107 in the cross bar 108, and to each of these projecting ends is fixed another collar 209, nuts 210 being screwed upon these threaded ends of the rods behind the collars 209.

The bar 108 is supported at each end by levers 211, being attached to the upper ends of such levers. The lower ends of these levers are pivoted to a cross shaft 212 mounted in bearings 213, 214 and 215 fastened to the cross piece 216, which is fixed to the machine at each end. A crank 217 is fixed to the center of the shaft 212, its end being pivotally connected to one end of a rod 218, the other end of said rod being forked and straddling a shaft 219, there being a roll 220 in such forked end which roll works in a grooved cam 221 fixed to the shaft 219, which shaft is driven by means of the sprocket 222, fixed to said shaft, chain 223 and sprocket 224 fixed to the shaft 45, over both of which sprockets the chain 223 passes. It will thus be seen that during the rotation of the shaft 45, the cross bar 108 will be moved forward and backward by the levers 211, whereby the pusher strips 200 will be given similar movements, and upon each forward movement of these pushers, their free ends come into contact with a can cover which is thereby pushed under the magnets 192 which magnets pick up and hold such covers preparatory to depositing them upon the cans which are at that time below and directly in alignment with such suspended covers. It is important that no cover be pushed under a magnet in any row in which the cans are not being fed forward, and therefore I provide means next described for holding the pusher plates 200 stationary when there is no can in position to receive a cover. In Fig. 11 of the drawing a cover is shown being pushed forward in each row. The means for holding and releasing the can cover pushers 200, consists as follows.

Each of the pusher strips 200 is provided with a hole adjacent its free end which receives a pin 224, which pins pass through and are slidable vertically within holes in the plate 189. Upon the lower end of each of these pins there is a right angle projection 225 which enters a slot in one end of a lever 226, pivoted at its center to a bracket

227, depending from the under side of the plate 189. The other ends of these levers 226 are pivotally connected to the upper ends of links 228, which extend through openings in the top plate and bed of the machine, and at their lower ends are pivoted to one end of bell cranks 229, which are pivoted in brackets 230, depending from the under side of the bed of the machine. The other ends of these bell cranks are pivoted to one end of connection rods 231, which at their other ends are connected to bell cranks 232, pivotally connected to lugs 233, on the under side of the bed of the machine, the other ends of these bell cranks being pivoted to hubs 234, pivotally connected to lugs 235, on the bottom of the bed of the machine, the pivot pins 236 extending through the bed and plates 61, and their projecting ends attached to one end of fingers 237, normally extending through openings in the side rails 62, so that the advancing cans come into contact with such fingers, and overcome the tension of the spiral springs 238, one end of each of which is attached to the rods 231, their other ends being connected to the bed of the machine. It will thus be seen that when no cans are being fed forward in any of the rows, the pins 245 in such row or rows will project into the holes in the ends of the pusher strips 200, and prevent their action upon the can covers.

The collars 207 being loosely mounted on the rods 205 permit of this without interference with the forward and backward movement of the bar 108.

239 denotes a cross plate having a hub 240 at each end which is clamped on sleeves 241, which sleeves are guided in bearings 242 attached to the frame of the machine at each side thereof. An arm 243 is fixed to the lower end of each sleeve 241 below the bearings 242. A vertical rod 244 is fixed to the free end of each arm 243, the lower end of said rods being forked and straddling the shaft 219; a roll 155 is provided in the forked end of each rod, which rolls engage grooved cams 246 fixed on the shaft 219.

There are spaced openings 247 in the cross plate 239 in each of which openings there is a frame 248, the flanges 249 of which are attached to the plate 239 by screws 250 or otherwise. The interior of the upper parts of these frames are tapered to center the can covers when such covers are pushed down by the means hereafter described. The lower part of each frame 248, is shaped interiorly to fit around the upper part of the can while a cover is being applied thereto, whereby the can is held in perfect alignment with its cover at that time.

A cross bracket 251 is supported at each end upon vertical rods 252, by lock nuts 253 on the upper end of the rods 252. These rods pass through the sleeves 241 and their lower ends are forked and straddle the shaft 219; there being a roll 254 in the forked end of each rod acting in grooved cams 255 fixed to the shaft 219.

There are spaced recesses 256 in the bracket 251 curved at their tops, into which recesses the permanent horse shoe magnets 192 are held by screws 257, the magnets being steadied on both sides by set screws 258.

259 indicates vertical rods in the center of the magnets 192, each rod having a presser foot 260 at its lower end, the tops of these rods are fixed to the free ends of arms 261, which are provided with hubs 262 fixed on a cross shaft 263. On the center of this shaft 263 is fixed a coupling 264 connected to the upper end of a vertical rod 265 which passes through a bearing 266 on the cross piece 239. The lower end of the rod 265 has a bearing in a bracket 267 supported on the bottom cross piece 18 of the frame, which bearing is an extension of a bracket 268. A lug 269 is keyed to the vertical rod 265, the free end of said lug being pivoted to one end of a lever 270, the other end of which is pivoted to a bracket 271 bolted to the cross piece 216 of the frame of the machine. A roll 272 on the lever 270 engages a groove in a cam 273 fixed on the shaft 219.

274 and 275 indicate two couplings fixed to the shaft 263 and connected to the upper ends of two short rods 276 and 277 which pass through bearings 278 and 279 on the cross plate 239, which steady and guide the movements of the shaft 263. 280 denotes brace rods for the receptacle 64.

There are openings in the bed of the machine for the passage of the belts 55, and at the delivery end these openings are beveled downwardly and covered, while the cans, after they have received their caps, are passing. For this purpose, I provide in each row at this end, a lever 281 centrally pivoted to the lower end of a bracket 282 fixed to the under side of the bed adjacent such openings, which levers are provided at one end with a plate 283 which is beveled and fits into the beveled openings in the bed, while a can is passing, being held in such position by a weight 284 attached to the other end of these levers, which is overcome by the cross bars 59 on the chains as they come into contact with the plate 283, but as soon as such bars pass over the beveled edges of such plates, the weights 284 bring the plates back into the openings in the bed, so that such openings are always covered when a can is passing over the bed at that point.

I prefer to employ on each side of the machine extending longitudinally thereof, a flat covering strip 285 supported above the bed of the machine by short posts 286, and also a central strip 287 supported in like manner. 288 and 289 indicate two hand levers, one on each side of the machine by

which the clutch 292 for starting or stopping the machine may be operated from either side. Strips 290 and 291 at the delivery end of the machine provide guides for the capped cans as they are passing off the bed.

The bed of the machine is supported at a proper height above the floor to permit the operator or operators to conveniently place the cans to be filled and capped between the cross bars 59 on any or all the conveyor chains, also to place the can covers 190 on the belt 180 in the channeled plate 189. The intermittent movement of the chains 55 conveying the cans to the filling and capping mechanism permits each can in succession to come to rest momentarily beneath the hoppers 105, or sufficiently long enough to receive a charge of the filling material when they are again moved forward by the conveyors, and at another period of rest are directly beneath the openings in the frames 248 and in direct alignment with the magnets 192 and presser feet 260. The magnets at that time having picked up a can cover, the bracket 251 is then brought down by the mechanism before described and the covers forced over the tops of the cans by the magnet, at which moment the presser feet 260 are moved down by the mechanism described and bear upon the tops of the covers as the magnets move upward, the presser feet raising as the covered cans are again moved forward; these movements being continuous while the machine is being operated. The capped cans are then carried off the bed upon a table or any desired receptacle.

While I have shown the machine as adapted for use with four rows of cans, it will of course be apparent that this number may be increased or lessened if desired, and that the machine can be employed for capping receptacles of different shapes and of other material than metal where metallic caps or covers are employed, without departing from the nature and spirit of my invention.

I claim as my invention:—

1. A machine for capping cans, comprising an endless conveyor for the cans, means for imparting an intermittent movement to the same, a horizontal cross plate provided with a central longitudinal channel, brackets supporting said plate at a predetermined distance above the can conveyor, an endless belt carrying the can covers travelling in said channel in the cross plate whereby the can covers are fed transversely of the conveyor for the cans, a permanent magnet, a bracket supporting the same, means for giving said bracket an up and down movement, means for pushing a cap or cover in a straight line under the magnet when said bracket is in its uppermost position whereby when said bracket descends the cover is picked up by the magnet and forced over the top of a can, and a presser foot acting upon the top of the cover when the bracket moves upwardly.

2. A machine for capping cans, comprising a plurality of spaced endless conveyors for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers arranged transversely of the conveyors, means for supporting the same at a predetermined distance above the conveyors, a plurality of spaced permanent magnets, a bracket holding the same arranged transversely of the conveyors, means for giving the bracket an up and down movement, and means for pushing a cover under the magnets in each row when said bracket is in its uppermost position, whereby the covers are picked up by the magnets and then forced over the tops of the cans upon the downward movement of the bracket.

3. A machine for capping cans, comprising an endless conveyor for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers, means for supporting the same at a predetermined distance above the conveyor, a permanent magnet, a bracket supporting the same, means for imparting an up and down movement to the bracket, means for pushing a cover under the magnet when said bracket is in its uppermost position, whereby the cover is picked up by the magnet and then forced upon the can on the downward movement of the bracket, and means for holding the cover upon the can when the bracket moves upwardly.

4. A machine for capping cans, comprising a plurality of spaced endless conveyors for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers arranged transversely of the conveyors, means for supporting the same at a predetermined distance above the conveyors, a plurality of spaced permanent magnets, a bracket holding the same arranged transversely of the conveyors, means for giving the bracket an up and down movement, means for pushing the covers under the magnets in each row when said bracket is in its uppermost position, whereby the covers are picked up by the magnets and then forced over the tops of the cans upon the downward movement of the bracket, and means for holding the covers upon the cans when the bracket moves upwardly.

5. A machine for capping cans, comprising an endless conveyor for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers, means for supporting the same at a predetermined distance above the

conveyor, a horse shoe magnet, a bracket supporting the same, means for imparting an up and down movement to the bracket, means for pushing a cover under the magnet when the bracket is in its uppermost position, by which the cover is picked up by the magnet and then forced upon the can on the downward movement of the bracket, a presser foot arranged within the center of the magnet, and means for giving an up and down movement to the presser foot, whereby it is brought into contact with the top of the cover holding it upon the can while the bracket is moving upwardly and returned to its normal position after the magnet is drawn from contact with the cover.

6. A machine for capping cans, comprising a plurality of spaced endless conveyors for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers arranged transversely of the conveyors, means for supporting the same at a predetermined distance above the conveyors, a plurality of spaced horse shoe magnets, a bracket holding the same arranged transversely of the conveyors, means for giving the bracket an up and down movement, means for pushing the covers under the magnets in each row when said bracket is in its uppermost position, whereby the covers are picked up by the magnets and then forced over the tops of the cans upon the downward movement of the bracket, a presser foot arranged within the center of each magnet, and means for giving an up and down movement to the presser feet, whereby they are brought into contact with the tops of the covers holding them upon the cans while the bracket is moving upwardly and returned to their normal positions after the magnets have been drawn from contact with the covers.

7. A machine for capping cans, comprising an endless conveyor for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can covers, means for supporting the same at a predetermined distance above the conveyor, a permanent magnet, a bracket supporting the same, means for imparting a vertical movement to the bracket, means for pushing a cover under the magnet when the bracket is in its uppermost position, whereby the cover is picked up by the magnet and then forced upon the can on the downward movement of the bracket, and means for holding said pusher stationary when no can is being carried forward by the conveyor.

8. A machine for capping cans, comprising a plurality of spaced endless conveyors for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers arranged transversely of the conveyors, means for supporting the same at a predetermined distance above the conveyors, a plurality of spaced permanent magnets, a bracket holding the same arranged transversely of the conveyors, means for giving the bracket an up and down movement, means for pushing the covers under the magnets in each row when the bracket is in its uppermost position, whereby the covers are picked up by the magnets and then forced over the tops of the receptacles upon the downward movement of the bracket, and means for holding the pushers stationary in each row in which no receptacle is being carried forward by the conveyors.

9. A machine for capping cans, comprising an endless conveyor for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers, means for supporting the same at a predetermined distance above the conveyor, a permanent magnet, a bracket supporting the same, means for imparting a vertical movement to the bracket, means for pushing a cover under the magnet when the bracket is in its uppermost position, by which the cover is picked up by the magnet and then forced upon the can on the downward movement of the bracket, means for holding said pusher stationary when no can is being carried forward by the conveyor, and means operated by the can as it is carried forward for releasing said holding means.

10. A machine for capping cans, comprising a plurality of spaced endless conveyors for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers arranged transversely of the conveyors, means for supporting the same at a predetermined distance above the conveyors, a plurality of spaced permanent magnets, a bracket holding the same arranged transversely of the conveyors, means for giving the bracket an up and down movement, means for pushing the covers under the magnets in each row when the bracket is in its uppermost position, whereby the covers are picked up by the magnets and then forced over the tops of the cans upon the downward movement of the bracket, means for holding the pushers stationary in each row in which no receptacle is being carried forward by the conveyors, and means operated by the cans as they are carried forward for releasing said holding means.

11. A machine for capping cans, comprising an endless conveyor for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers, means for supporting the same at a predetermined distance above the conveyor, a permanent magnet, a bracket supporting the same, means for imparting a vertical movement to the bracket, means for

pushing a cover under the magnet when the bracket is in its uppermost position, by which the cover is picked up by the magnet and then forced upon the can on the downward movement of the bracket, means for holding said pusher stationary when no can is being carried forward by the conveyor, and a spring bearing upon the top of the cover while the cover is being pushed under the magnet.

12. A machine for capping cans, comprising a plurality of spaced endless conveyors for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers arranged transversely of the conveyors, means for supporting the same at a predetermined distance above the conveyors, a plurality of spaced permanent magnets, a bracket holding the same arranged transversely of the conveyors, means for giving the bracket an up and down movement, means for pushing the covers under the magnets in each row when the bracket is in its uppermost position, whereby the covers are picked up by the magnets and then forced over the tops of the cans upon the downward movement of the bracket, means for holding the pushers stationary in each row in which no receptacle is being carried forward by the conveyors, and springs bearing upon the tops of the covers while the covers are being pushed under the magnets.

13. A machine for capping cans, comprising an endless conveyor for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers, means for supporting the same at a predetermined distance above the conveyor, a permanent magnet, a bracket supporting the same, means for imparting a vertical movement to the bracket, means for pushing a cover under the magnet when the bracket is in its uppermost position, whereby the cover is picked up by the magnet and then forced upon the can on the downward movement of said bracket, a bracket below the bracket carrying the magnet, means for supporting the same, said second bracket being provided with an opening in alignment with the magnet, a hollow frame fixed in said opening and forming a guide for centering the cover over the can as it is brought down by the movable bracket.

14. A machine for capping cans, comprising a plurality of spaced endless conveyors for the cans, means for imparting an intermittent movement to the same, a channeled holder for the can caps or covers arranged transversely of the conveyors, means for supporting the same at a predetermined distance above the conveyors, a plurality of spaced permanent magnets, a bracket holding the same arranged transversely of the conveyors, means for giving the bracket an up and down movement, means for pushing the covers under the magnets in each row when the bracket is in its uppermost position, whereby the covers are picked up by the magnets and then forced upon the tops of the cans upon the downward movement of the bracket, a transverse bracket below the bracket carrying the magnets, means for supporting the same, said second bracket being provided with spaced openings in alignment with the magnets, and a hollow frame fixed in each of said openings forming guides for centering the covers over the cans as they are brought down by the movable bracket.

15. In a machine of the character described, the combination of a plurality of spaced endless conveyors for the receptacles, means for imparting an intermittent movement to the same, a channeled holder for the receptacle covers arranged transversely of the conveyors, means for supporting the same at a predetermined distance above the conveyors, a plurality of spaced horse shoe magnets, a bracket for holding the same arranged transversely of the conveyors, means for giving the bracket an up and down movement, means for pushing the covers under the magnets in each row when the bracket is in its uppermost position, whereby the covers are picked up by the magnets and then forced down over the tops of the receptacles upon the downward movement of the bracket, a transverse bracket below the bracket carrying the magnets, means for supporting the same, said second bracket being provided with spaced openings in alignment with the magnets, a hollow frame fixed in each of said openings and forming a guide for centering the covers over the receptacles as they are brought down by the movable bracket, a presser foot arranged within the center of each magnet, and means for giving an up and down movement to the presser feet, whereby they are brought into contact with the tops of the covers holding them upon the receptacles while the movable bracket is ascending, and returned to their normal positions after the magnets have been drawn from contact with the covers.

Signed by me this 1st day of December 1924.

CHARLES A. ALEXANDERSON.