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Freidel et al.

[11] **3,807,129**

[45] **Apr. 30, 1974**

[54] **BAGGING MACHINE**

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[52] **U.S. Cl.** **53/188,** 53/385, 53/390

[51] **Int. Cl.** **B65b 5/06,** B65b 43/36

[58] **Field of Search** 53/188, 385, 390, 187, 53/190, 386, 255, 258, 260

[56] **References Cited**

UNITED STATES PATENTS

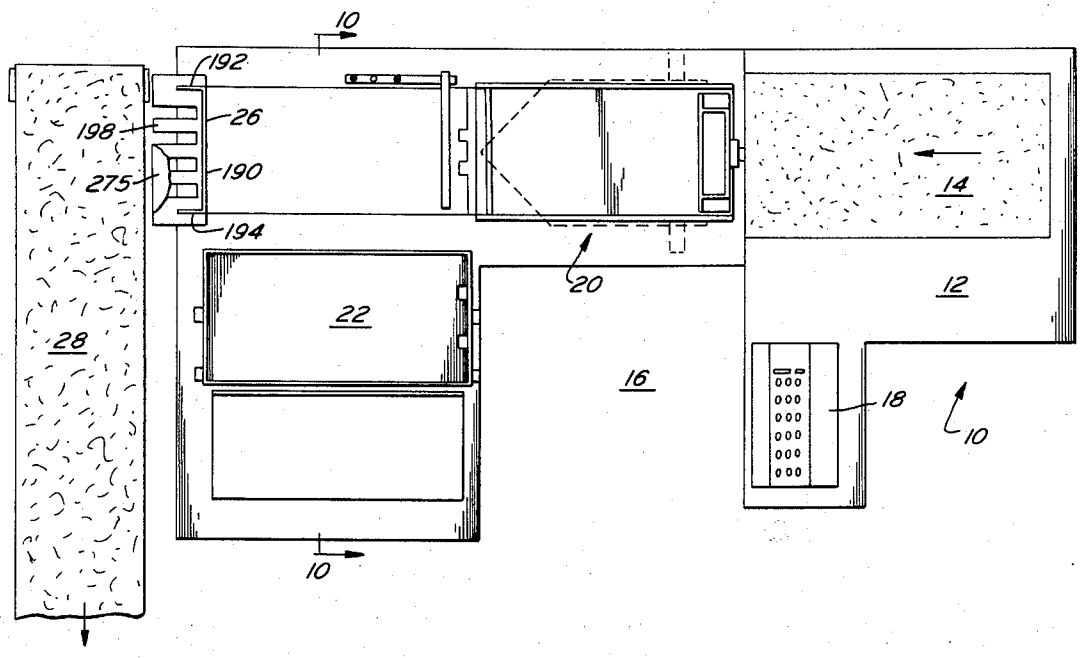
2,563,928	8/1951	Farmer	53/260
2,732,112	1/1956	Conrad	53/258
2,958,990	11/1960	Kerker	53/188 X
3,699,741	10/1972	Norman	53/385 X
3,421,287	1/1969	Sheets	53/190
3,197,936	8/1965	Messmer	53/187 X
3,546,829	12/1970	Lonergan	53/260 X
3,584,434	6/1971	Ellis	53/186 X
3,662,514	5/1972	Goss	53/260 X
3,706,179	12/1972	Tanaka et al.	53/386 X

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Attorney, Agent, or Firm—Seidel, Gonda & Goldhammer

[57] **ABSTRACT**

An automatic bagging machine is disclosed for use at checkout counters in retail establishments such as supermarkets. Bags are automatically removed from a hopper and opened. Items to be bagged are placed in an open top tray. Items from the tray are transferred to the open bag which is then mechanically up-ended and delivered to a take-away conveyor.

12 Claims, 11 Drawing Figures



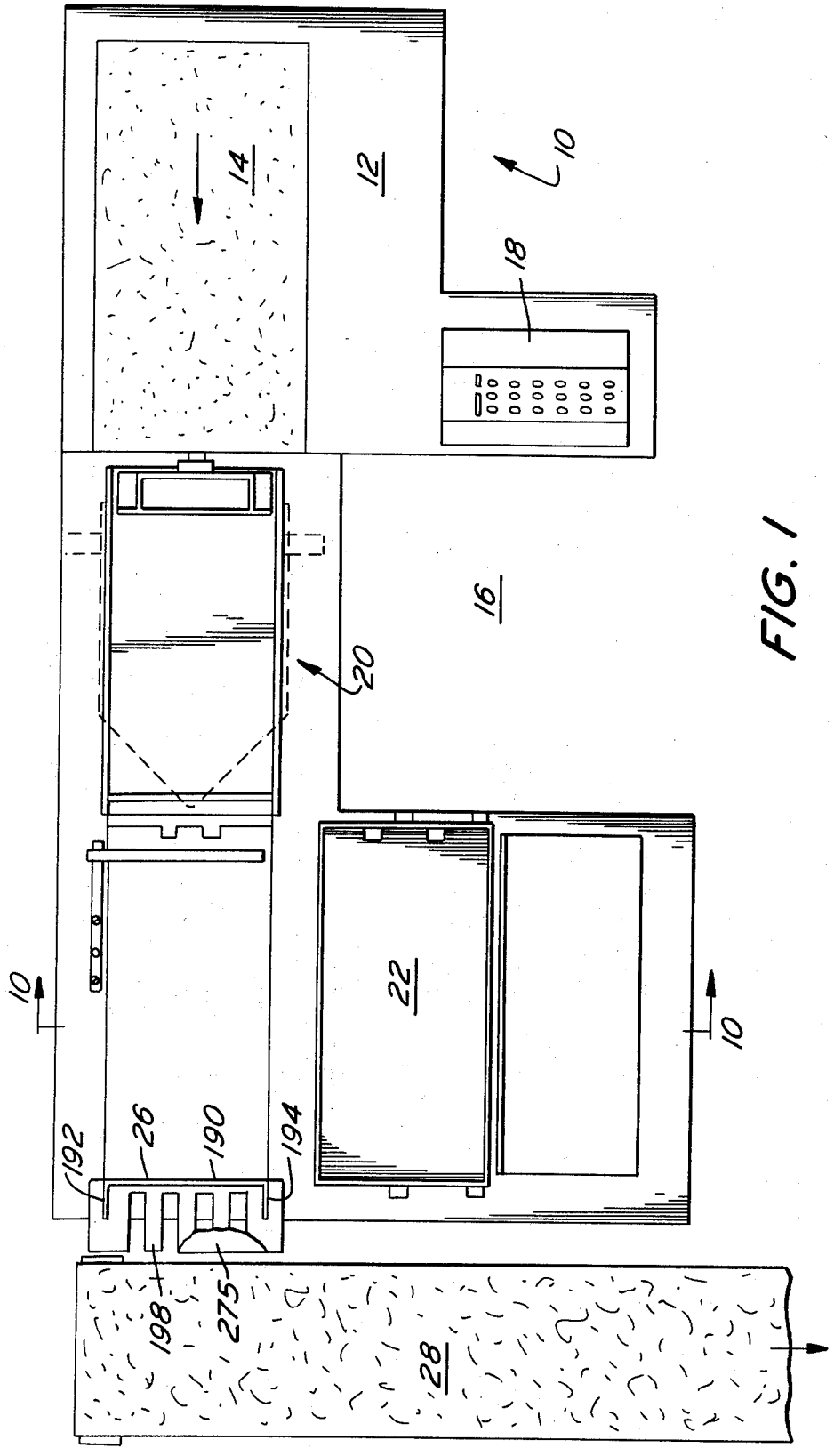


FIG. 1

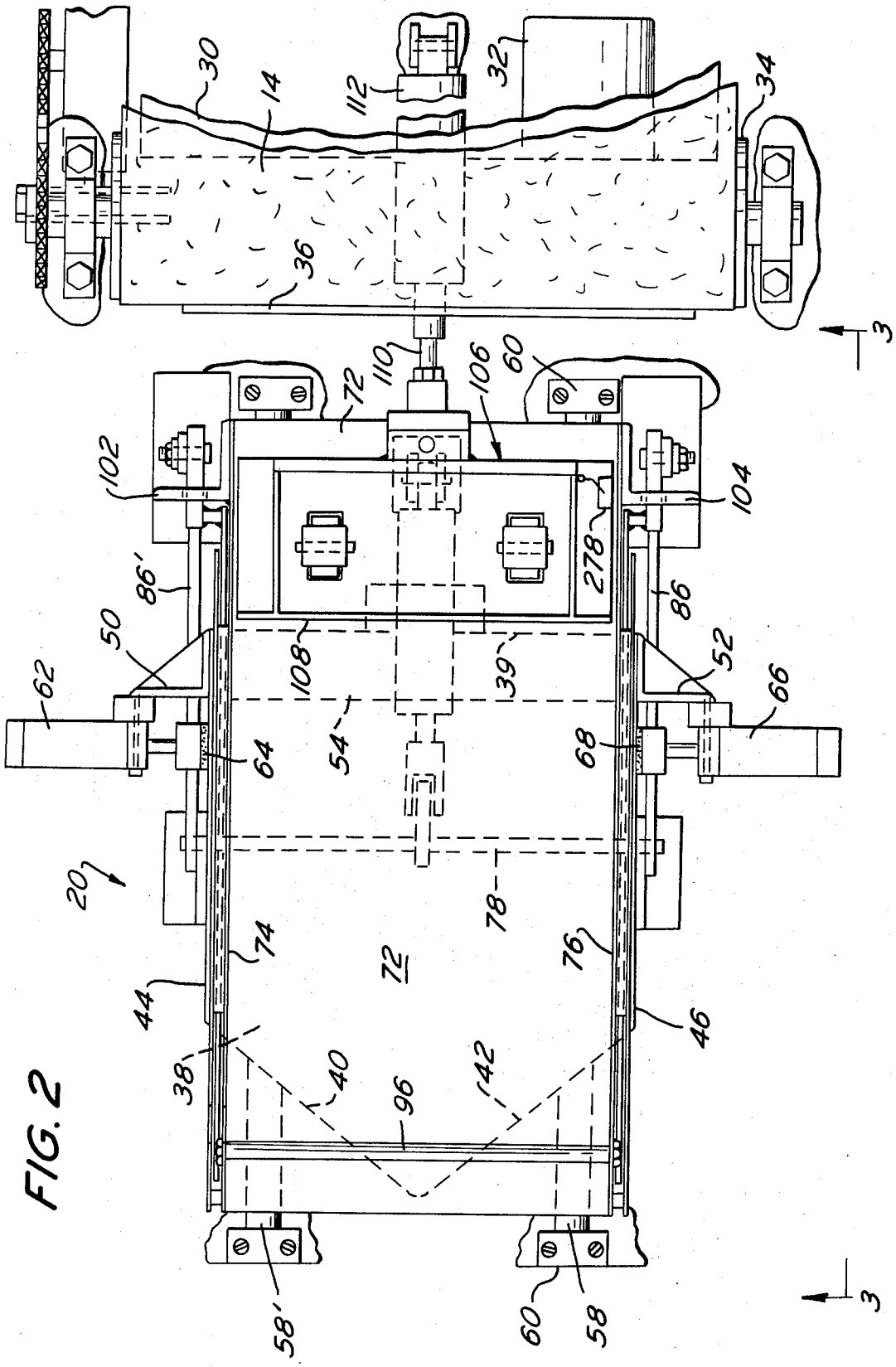

30
14
112
32
34
36
3
110
106
60
72
102
104
278
86'
86
50
52
62
66
108
39
54
64
68
20
78
74
76
72
44
46
38
40
96
42
58'
60
58
3

FIG. 2

FIG. 3

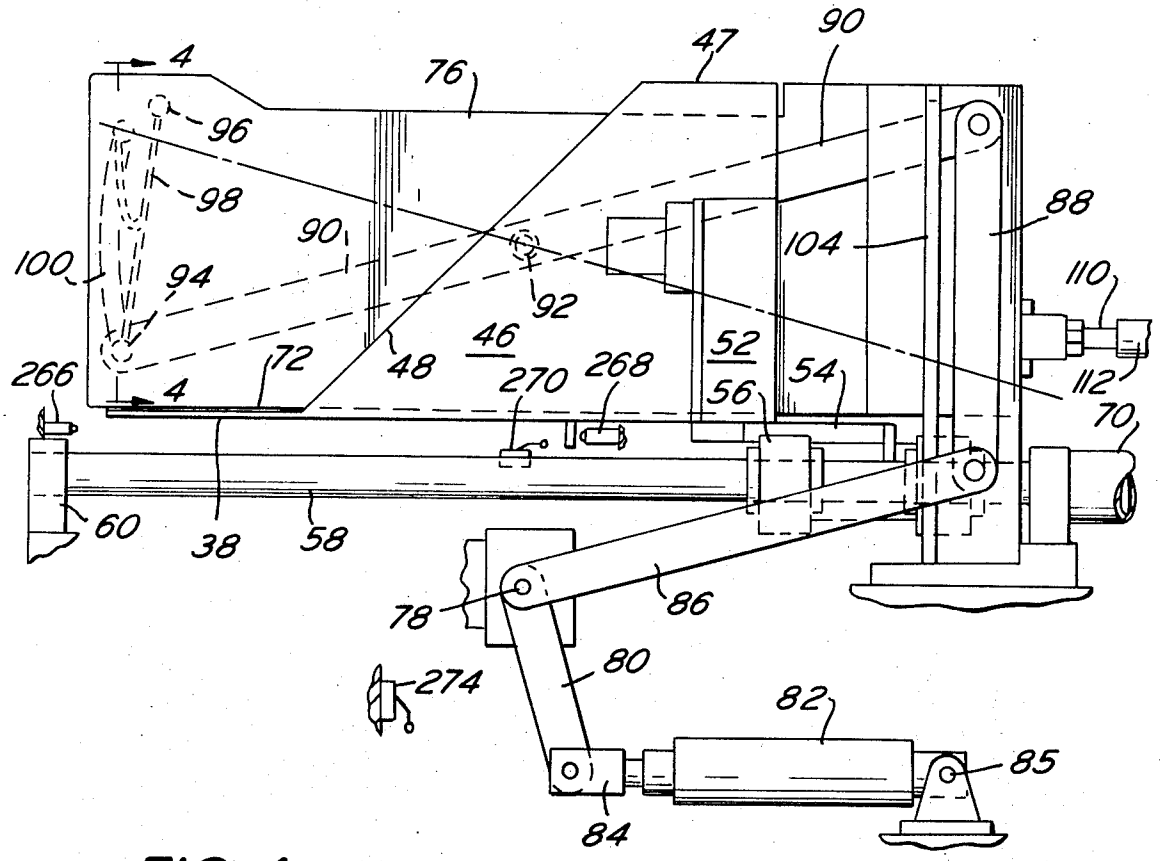

4
76
47
90
96
98
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88
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100
94
92
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52
72
48
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266
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70
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38
58
78
86
274
80
82
85
84

FIG. 4

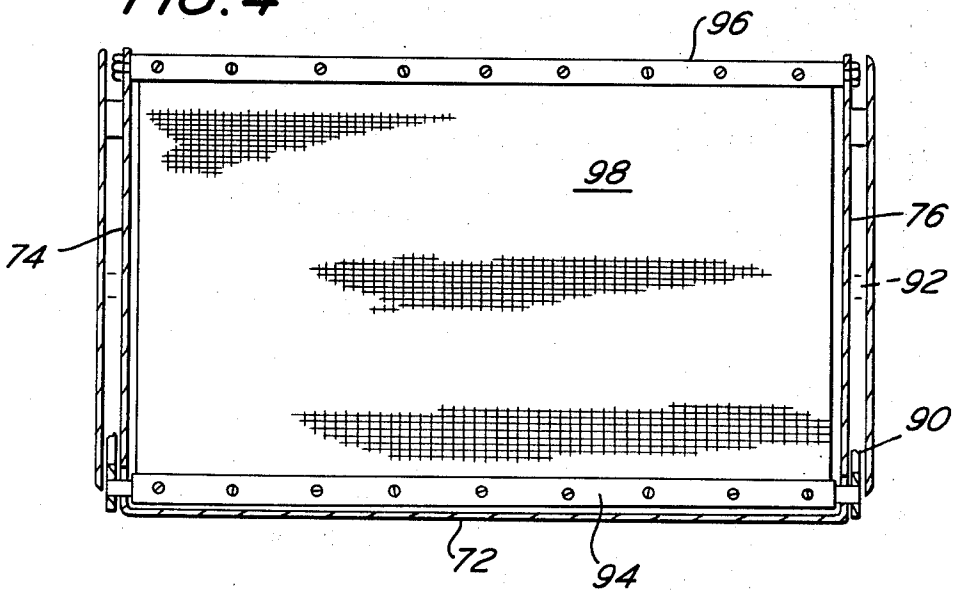

96
98
74
76
92
90
72
94

FIG. 9

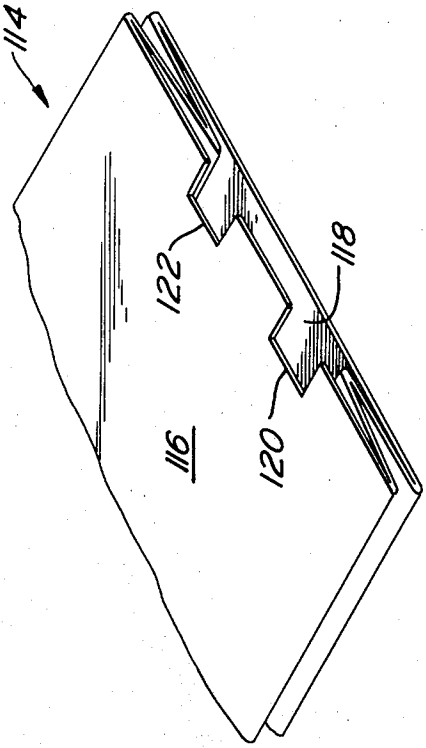
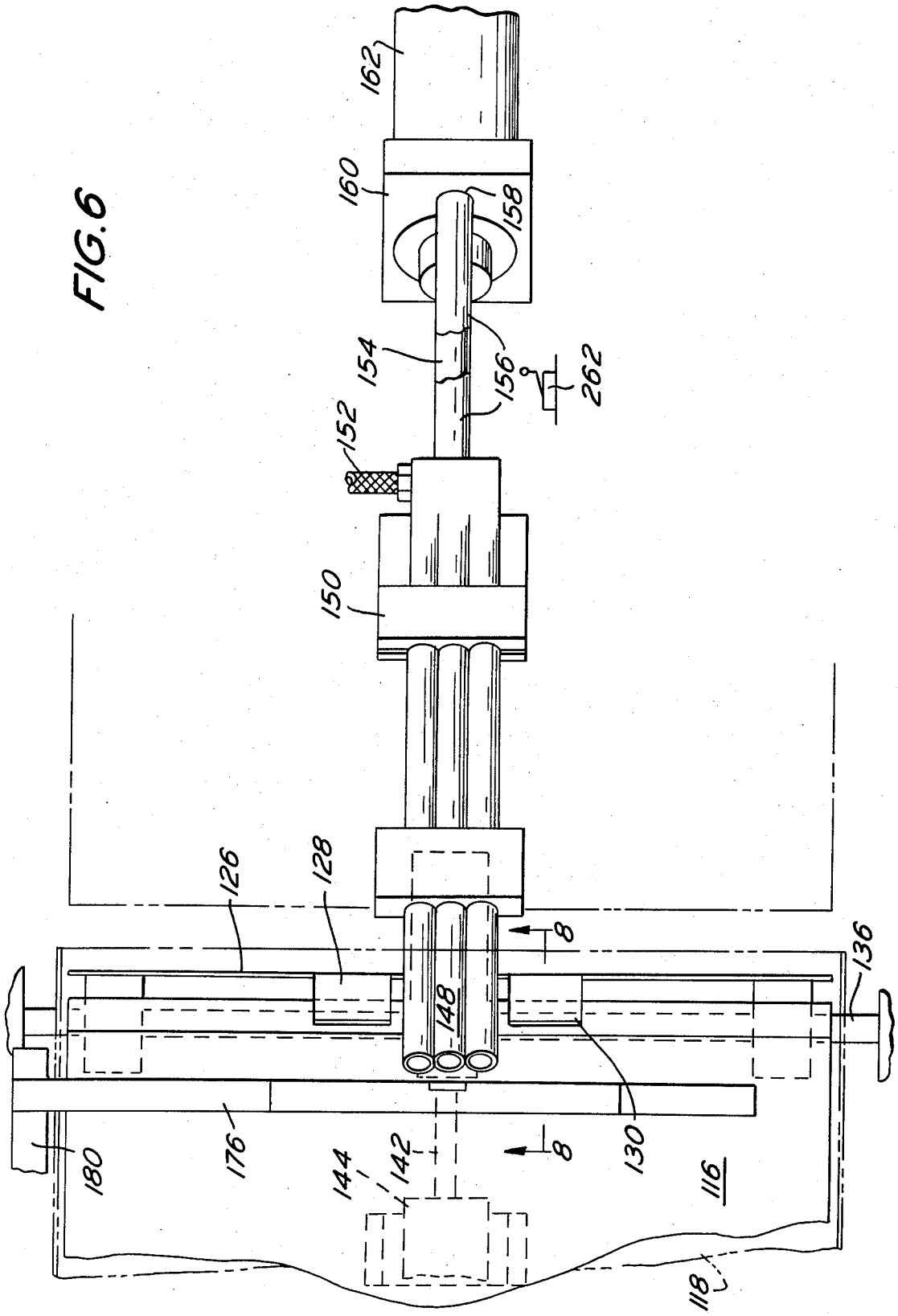

114
122
118
116
120

FIG. 5

6
6
176
178
148
126
128
142
184
144
188
180
186
146
182
124
264
272
198
26
190
1164
196
192
194
275
276
200
202
198
7
7

FIG. 6


162
160
158
154
156
262
152
150
126
128
8
136
148
180
176
144
142
8
130
116
118

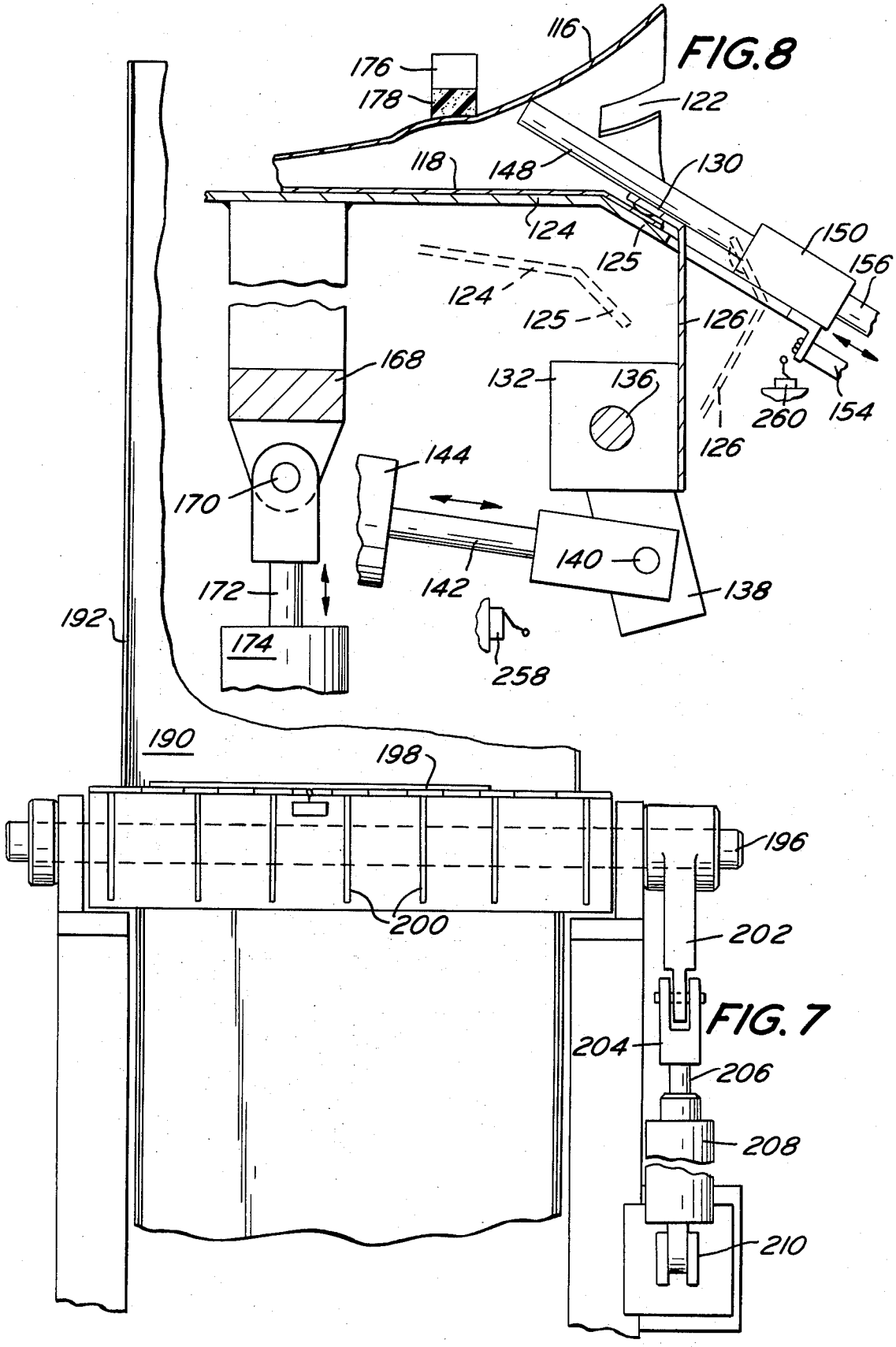

116
176
178
122
118
148
130
124
150
156
125
124'
125
126
168
132
136
260
154
126
144
170
140
138
172
142
192
174
258
190
198
196
200
202
204
206
208
210

FIG. 8

FIG. 7

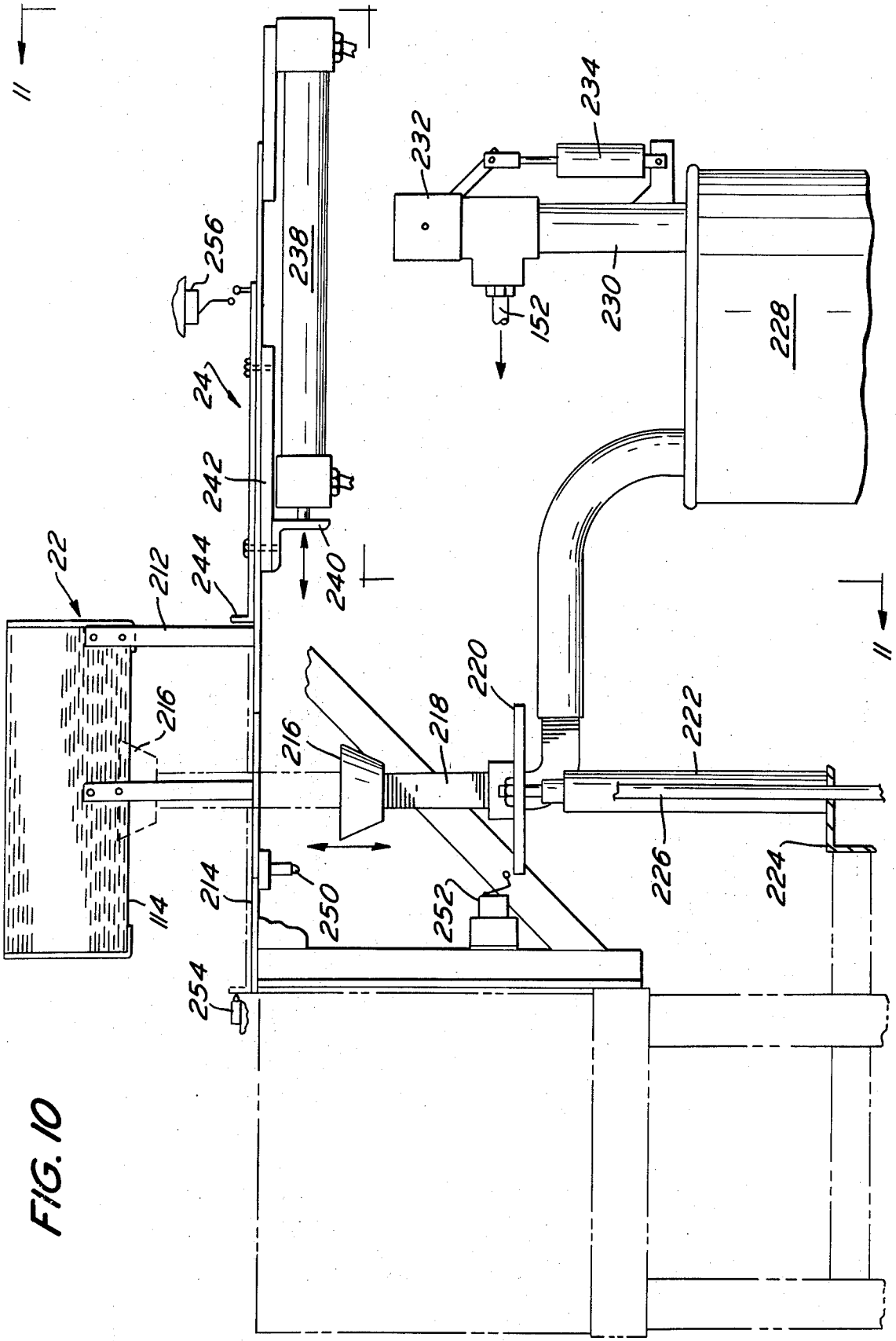
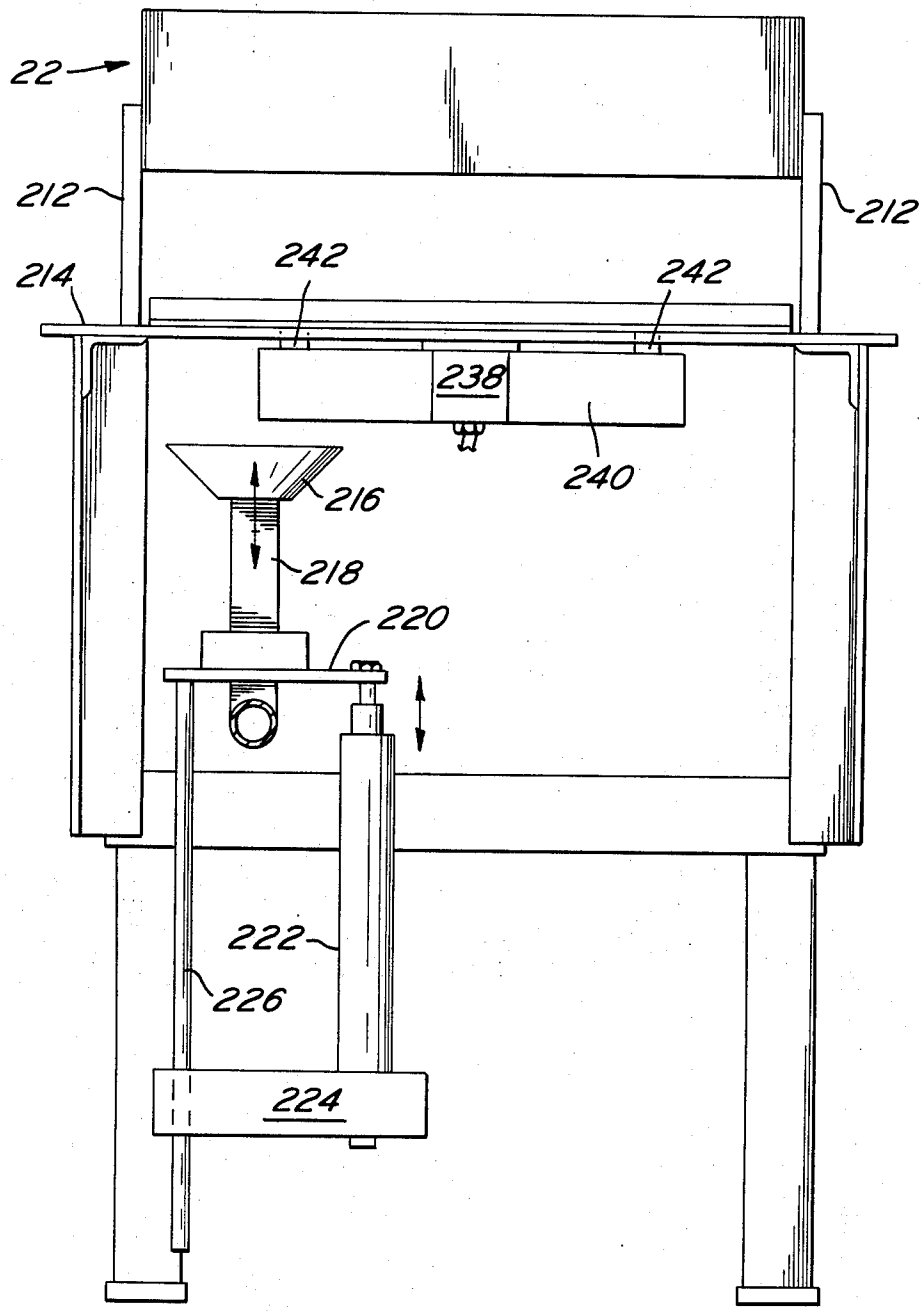

11
234
232
256
238
230
228
152
24
242
240
244
212
22
220
218
216
222
226
224
214
250
252
254
114

FIG. 10

FIG. 11



BAGGING MACHINE

The automatic bagging machine of the present invention is designed for use in retail establishments having a checkout counter, such as a supermarket. In such retail establishments, the customers select the merchandise they desire and then deliver it to a checkout counter. The cashier generally rings up each item on a cash register and then places the items into a bag. Under some conditions, the cashier is assisted by personnel who place the items into a bag while the cashier is busy ringing up the items on the cash register.

The machine of the present invention is designed to expedite the bagging of the items at the checkout counter and thereby perform the functions performed heretofore either by the cashier or any personnel assisting the cashier. The machine of the present invention, in addition to eliminating personnel will expedite the bagging of the items.

When using the machine of the present invention, a customer will place items either in front of the cashier or onto a conveyor which conveys the items to the cashier. The cashier manipulates the cash register to indicate the price of each item. Just prior to ringing up the items on the cash register, the cashier will generally initiate a sequence of operations which cause a bag to be dispensed from a hopper and opened while being in a horizontal disposition. Items which have been priced by the cashier will be placed in an open top tray. When the tray is full, the cashier will initiate a sequence of operations which will cause the items to be transferred from the tray into the bag. Thereafter the filled bag will be upended by a movable shelf and deposited onto a take-away conveyor.

The primary object of the present invention is to provide a machine which will automatically bag items at a checkout counter to thereby facilitate a faster checkout and/or easier work load for the cashier.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIG. 1 is a top plan view of the automatic bagging machine of the present invention.

FIG. 2 is a top plan view on an enlarged scale showing the bagging device.

FIG. 3 is an elevation view taken along the line 3—3 in FIG. 2.

FIG. 4 is a sectional view taken along the line 4—4 in FIG. 3.

FIG. 5 is an elevation view of the movable bag shelf and bag opening mechanism.

FIG. 6 is a view taken along the line 6—6 in FIG. 5 but on an enlarged scale.

FIG. 7 is a view taken along the line 7—7 in FIG. 5 but on an enlarged scale.

FIG. 8 is a sectional view taken along the line 8—8 in FIG. 6, but on an enlarged scale.

FIG. 9 is a partial perspective view of a bag.

FIG. 10 is a sectional view taken along line 10—10 in FIG. 1.

FIG. 11 is a sectional view taken along the line 11—11 in FIG. 10.

Referring to the drawings in detail, wherein like numerals indicate like elements, there is shown in FIG. 1

an automatic bagging machine in accordance with the present invention designated generally as **10**. The machine **10** includes a counter or support **12** having a conveyor **14** therein for conveying items to a location wherein they can be reached by an operator standing in the area **16**. A cash register or other recording device **18** is supported by the counter **12** adjacent the area **16**.

The machine **10** includes a bagging device designated generally as **20** alongside the area **16**. The machine **10** also includes a hopper **22** for bags, a bag transfer mechanism designated generally as **24**, a movable bag shelf member **26**, and an exit conveyor **28**, all of which will be described in greater detail hereinafter.

Referring to FIG. **2**, it will be noted that the belt of conveyor **14** extends around a drive roller **34**. A shelf **30** is provided for supporting the upper run of the conveyor **14**. A motor **32** is supported in any convenient location below the plane of the conveyor **14**. Motor **32** is coupled to the drive roller **34** through a gear reducer in any convenient manner. A stop bar **36** is provided to prevent items from falling off the forward end of the conveyor **14**. Motor **32** may be provided with a conventional foot pedal control whereby the operator may selectively cause operation of the conveyor **14** to cause items thereon to be conveyed to the operator while the operator stands in area **16**.

The bagging device **20** is shown in greater detail in FIGS. **2** and **3**. The bagging device **20** includes a scoop which is generally U-shaped in cross-section. The scoop includes a bottom wall **38** having its forwardly projecting edges **40** and **42** converging toward one another. The scoop is provided with side walls **44** and **46**. The side walls **44** and **46** have a leading edge **48** which is inclined rearwardly and upwardly to the top edge **47**. The scoop has no rear wall. The rear edge of the scoop is designated as **39** in FIG. **2**.

As shown more clearly in FIG. **2**, the side wall **44** on the scoop is provided with an angled member **50**. The opposite side wall **46** is provided with a similar angled member **52**. Members **50** and **52** are interconnected by a reinforcement plate **54** which is secured to the lowermost surface of bottom wall **38**. Plate **54** is T-shaped in plan view as shown in FIG. **2**, and projects rearwardly beyond the rear edge **39**.

One or more journals **56** are attached to the plate **54** and slidably supported by rod **58**. The rod **58** guides the movement of the scoop. Rod **58** is supported at its ends by bearing blocks **60**. The opposite side of the scoop is likewise supported and guided for movement along the rod **58'**. The rods **58** and **58'** are parallel to one another.

A cylinder **62** is supported by the angled member **50**. A rubber pad **64** is secured to the piston rod associated with cylinder **62** and is adapted to clamp a portion of the bag against side wall **44**. A cylinder **66** is supported by the angled member **52**. A similar pad **68** is connected to the piston rod associated with cylinder **66**. Pad **68** is adapted to clamp in opposite portion of a bag against the side wall **46** of the scoop. A cylinder **70** is provided for reciprocating the scoop along the guide rods **58** and **58'**. A piston rod associated with cylinder **70** is connected to a rearwardly projecting portion of plate **54**.

A loading tray is mounted or positioned so as to be within the scoop. The tray includes a bottom wall **72** directly above the bottom wall **38** on the scoop. The

loading tray also includes upright side walls 74 and 76 which are between the walls 44 and 46 on the scoop. The loading tray has no rear wall and as will be apparent from FIGS. 2 and 3, the loading tray is longer than the scoop.

A rocker shaft 78 is supported below the plane of the guide rods 58 and 58'. See FIGS. 2 and 3. Shaft 78 is connected by link 80 to a clevis 84. Clevis 84 is connected to one end of a piston rod extending into cylinder 82. The opposite end of cylinder 82 is supported for movement about pivot pin 85. Hence, introduction of a motive fluid into cylinder 82 will cause the same to pivot about pin 85 and and rotate shaft 78 about its longitudinal axis.

One end of a crank arm 86 is connected to one end of shaft 78. A similar crank arm 86' is connected to the other end of shaft 78. Since the mechanisms on opposite sides of the tray are identical, only the mechanism on one side will be described in detail. Crank arm 86 extends rearwardly toward the conveyor 14 and upwardly. The other end of crank arm 86 is pivotably connected to the lower end of a vertically disposed link 88.

The upper end of link 88 is pivotably connected to the upper end of a pivot arm 90. Arm 90 extends from the upper rear corner of the tray downwardly to the lower front corner of the tray between the side wall 76 of the tray and the juxtaposed side wall 46 of the scoop. Intermediate its ends, arm 90 is pivotable about pivot pin 92. See FIGS. 3 and 4. The forward lower end of arm 90 is pivotably connected to one end of a rod 94. The corresponding portion of the mating arm 90 on the opposite side of the tray is similarly pivotably connected to the opposite end of rod 94.

A rod 96 is fixedly secured to the upper end of the side walls of the tray. See FIGS. 2–4. A flexible curtain 98 extends between the rods 96 and 94. The side walls 74 and 76 of the tray are provided with a track 100 to guide the ends of the rod 94. Thus, actuation of cylinder 82 will cause the curtain 98 to be raised or lowered by means of elements 78–100.

Angled member 102 is fixedly supported adjacent the rear of the tray on one side thereof. A similar angled member 104 is provided on the opposite side of the tray. The angled members 102 and 104 are slotted so as to facilitate the pivotable movement of the arms 86 and 86'.

A ram designated generally as 106 is provided within the U-shaped tray, is supported by the bottom wall 72 of the tray, and constitutes a movable rear wall for the tray at the end of the tray opposite from the curtain 98. The ram 106 has a vertical pushing face 108. The rear end of the ram 106 is connected to a piston rod 110 associated with an elongated cylinder 112. Cylinder 112 is disposed beneath the conveyor 14.

Referring to FIG. 9, there is illustrated a portion of a bag designated generally as 114. The bag includes an upper layer 116 and a lower or bottom layer 118. The upper layer 116 is provided with a pair of spaced notches 120 and 122.

In FIGS. 5, 6 and 8, the bag 114 is supported by a bag shelf 124 having a lip 125. The lip 125 is angled downwardly. A clamp bar 126 is pivotably mounted adjacent the lip 125 for movement from the solid line position to the phantom position, and vice versa, as shown in FIG. 8. Clamp bar 126 has fingers 128 and 130, see FIG. 6, which are adapted to extend through the notches 120 and 122 to clamp the bottom layer 118 to the lip of the bag shelf 124. The fingers 128 and 130 are angularly disposed so as to be parallel to the lip 125 and are provided on their lower surface with a resilient button.

The clamp bar 126 is provided with integral flanges 132 and 134 fixedly connected to a transverse shaft 136. The shaft 136 is fixedly connected to a depending arm 138. Arm 138 is connected by means of pin 140 to a piston rod 142. The piston rod 142 extends into cylinder 146 having its other end pivotably connected to the frame by pin 146. See FIGS. 5 and 8. Thus, as the piston rod 142 moves from right to left in FIG. 8, the clamp bar 126 moves from the solid line position to the phantom position in FIG. 8, and vice versa.

A nozzle 148 is provided to expand the bag 114. Nozzle 148 may include one or more conduit portions projecting upwardly at an inclined angle parallel to lip 125 and supported by a bracket 150. A flexible conduit 152 is provided to supply pressurized air to the nozzle 148. The bracket 150 is connected to the piston rod 154 of cylinder 162. A guide rod 156 extends from the bracket 150 and is disposed in the hole 158 on the cylinder head 160. The rod 156 prevents the nozzle from rotating relative to the cylinder 162. By introducing motive fluid into the cylinder 162, the nozzle 148 is selectively moved in the direction of the doubleheaded arrow at the righthand portion of FIG. 8.

As shown more clearly in FIG. 5, the lefthand end of the bag shelf 124 is mounted for pivotable movement about pin 164 so that it may move to the phantom position shown in FIG. 8. The structure for effecting such pivotable movement is as follows. A yoke 168 is fixedly secured to the lower surface of the bag shelf 124. Yoke 168 is pivotably connected by pin 170 to a piston rod 172. Piston rod 172 extends into a vertically disposed cylinder 174. The lower end of the upright cylinder 74 is pivotably connected to the frame.

A closer bar 176 is mounted for vertical reciprocation above the bag shelf 124 and extends transversely across the shelf 124. The closer bar 176 is provided with a resilient pad 178 on its lowermost surface. As shown more clearly in FIGS. 5 and 6, one end of the closer bar 176 is connected to a bracket 180. Bracket 180 extends along a side edge of the bag shelf 124. Vertical guide rods 182 are connected at their upper end to the bracket 180 and are guided by a stationary crosshead 186 on a stationary cylinder 188. A piston rod has one end fixedly secured to the bracket 180 and extends into the cylinder 188.

The movable bag shelf member 26 is shown in greater detail in FIGS. 5 and 7. The bag shelf member 26 is U-shaped in cross-section and includes side walls 192 and 194 extending upwardly from a bottom wall 190. The bag shelf member 26 has a rear wall which is higher than the side walls. The rear wall is defined by a plurality of tines each provided with a gusset 198. The bag shelf member 26 is connected to a bushing fixed on shaft 196 which is rotatable about its longitudinal axis and supported by bearings on the frame. The bag shelf member 26 is secured to the shaft 196 so as to rotate therewith from a position as shown in solid lines in FIG. 5 to the phantom position therein.

A lever arm 202 has one end keyed to the shaft 196. The other end of lever arm 202 is pivotably connected by a pivot pin and clevis 204 to a piston rod 206. Piston rod 206 extends into cylinder 208. The lower end of

cylinder 208 is connected to the frame by a pivot pin and clevis 210.

The bag hopper 22 and the feed mechanism 24 are shown in greater detail in FIGS. 10 and 11. As shown in FIG. 10, the bag hopper 22 is a rectangular frame open at the top and having an inwardly directed flange on opposite sides. The hopper is supported above the counter surface 214 by means of a plurality of posts 212. The counter surface 214 is provided with a hole therein below the hopper 22.

A vacuum cup 216 is supported below the counter surface 214 in alignment with the hole in the counter surface 214. The vacuum cup 216 is secured to an extensible conduit 218. A portion of the conduit 218 intermediate its ends is connected to the cross-head 220 on a vertically disposed cylinder 222.

The cylinder 222 is fixedly supported by a transversely disposed angle member 224 of the frame. A guide rod 226 extends downwardly from the crosshead 220 and extends through a hole in the angled member 224. Guide rod 226 prevents the crosshead from rotating relative to the cylinder 220.

The vacuum cup 216 is mounted for reciprocation by cylinder 222 from the solidline position shown in FIG. 10 to the phantom position wherein it contacts the lowermost bag 114 in the hopper 22. When the vacuum cup 216 descends to the solid line position in FIG. 10, the bag is separated from the cup and remains on the counter surface 214. Conduit 218 is connected to the inlet side of a blower 228 which creates a vacuum in conduit 218. The outlet of blower 228 is designated as 230 and is provided with a valve 232 for selectively introducing atmospheric air thereinto. Valve 232 is controlled by linkage extending to the piston rod of a cylinder 234. Conduit 230 and the outlet of valve 232 communicate with the flexible conduit 152.

The bag transfer mechanism 24 includes a cylinder 238 supported by the lower surface of the countertop 214. The piston rod extending from cylinder 238 is connected to a transversely disposed angled member 240. Member 240 is connected by means of nylon slide strips 242 to a pusher bar 244. Pusher bar 244 slides in a plane immediately above the upper surface of countertop 214. The stroke of pusher bar 244 is sufficient to transfer a bag from a position on the countertop 214, below the hopper 22, to a position wherein it is received on the bag shelf 124. The elevation of the bag shelf 124 in its solidline position in FIG. 8 is on the same level as the countertop 214.

A description of the operation of the machine 10 is as follows. The operator or cashier places items into the tray onto the bottom wall 72 thereof. Heavier items are placed adjacent the curtain 98. The operator will press a button which will initiate a sequence of operations that lead to a bag being removed from the hopper 22, opened, the contents of the tray transferred into the bag, while the bag is disposed horizontally, and then the bag is upended and deposited onto the takeaway conveyor 28.

The machine 10 may be provided with a plurality of manual buttons to be pressed sequentially to effect the operation of the machine. Alternatively, the sequence of operation may be controlled by limit switches. A preferred embodiment is an automatic machine which operates as follows.

It is assumed that a stack of bags 114 is in the hopper 22. The cashier or operator steps on a foot pedal or otherwise manually actuates a switch which turns on the motor 32 for the conveyor 14 to cause items on the conveyor to be transported to the operator. At the same time, the switch is energized to control the relay and start the motor for the blower 228 while simultaneously opening a valve to cause motive fluid to be introduced into the cylinder 222 which raises the cup 216. The cup 216 is raised until it attaches itself to the lowermost bag 114 in the hopper 22. At this point, switch 250 is tripped to signal a retraction of the cup 216. As the cup 216 retracts, the bag 114 is stripped from the cup and supported on the countertop 214. The cup 216 continues to descend until switch 252 is tripped.

When switch 252 is tripped, this also initiates the horizontal reciprocation of the pusher bar 244 by the cylinder 238. Bar 244 pushes the bag 114 onto the bag shelf 124. See FIG. 10. When this occurs, switch 254 is tripped by the pusher bar 244.

When switch 254 is tripped, it causes the pusher bar 244 to be retracted by its cylinder 238. When the pusher bar 244 is fully retracted, it trips switch 256 in FIG. 10. Switch 256 controls a valve associated with cylinder 144 to cause the clamp bar 126 to move from the phantom position to the solidline position in FIG. 8 and thereby clamp the bottom layer 118 of the bag 114 to the lip 125. As the clamp bar 126 is rotated, it releases switch 258 which in turn controls a valve for introducing motive fluid into cylinder 174 to cause the bag shelf 124 to move upwardly to the solidline position shown in FIG. 8. At the same time, valve 232 in FIG. 10 is closed so that pressurized air from the blower 228 will be delivered by way of the nozzle 148 to flutter the bag 114 open. After a short time delay of a few seconds, the last-mentioned switch also initiates reciprocation of the nozzle 148 by its cylinder 162 to the position shown in FIG. 8.

As soon as the nozzle 148 has opened the bag slightly, switch 260 is tripped to initiate lowering of the closer bar 176 by means of its cylinder 174. The closer bar 176 descends down to a position wherein it substantially restricts the mouth of the bag 144 so that air from the nozzle 148 balloons the bag. After a short time delay, the closer bar 176 is raised upwardly to an inoperative position by its cylinder 174 so that the bag may be fully blown open by the nozzle 148. When the bar 176 reaches its uppermost inactive position, the portion of rod 182 trips switch 264. The tripping of switch 264 initiates retraction of the nozzle 148.

When the nozzle 148 is almost fully retracted, switch 262 is tripped. See FIG. 6. Tripping of switch 262, causes cylinder 70 to extend the scoop into the fully opened bag while at the same time shutting off the motor for the blower 228. When the scoop cylinder 70 is fully extended, switch 266 is tripped by the scoop. Tripping of switch 266 initiates movement of the pads 64 and 68 towards each other so as to clamp the side walls of the bag 114 against the side walls 44 and 46 of the scoop. At the same time, tripping of switch 266 initiates retraction of the clamp bar 126.

When the tray is fully loaded, the cashier or operator will push a manual button to cause cylinder 70 to retract the scoop and the bag 114 in its fully opened condition to a position wherein the bag is telescoped over the tray. When the scoop is almost fully retracted, it will trip switch 270. See FIG. 3. Tripping switch 270

initiates rotation of the bag shelf member **26** from the solidline position to the phantom position in FIG. **5.**

At the same time, switch **268** initiates retraction of the clamping pads **64** and **66** so as to release the bag with respect to the scoop. When the bag shelf member reaches the horizontal phantom position in FIG. **5,** switch **272** will be tripped. The tripping of switch **272** initiates movement of the piston rod and cylinder **82** to the left in FIG. **3** which in turn pulls downwardly on the right-hand end of pivot arm **90.** As the righthand end of pivot arm **90** moves down, the curtain **98** is moved upwardly. When the curtain **98** is almost up, switch **274** is tripped by the link **80.** Tripping of switch **274** initiates horizontal reciprocation of the ram **106** by its cylinder **112.** The pushing face **108** on the ram **106** pushes all items out of the tray and into the bag **114** while at the same time pushing the bag onto the bag shelf member **26.** When the bag is completely on the bag shelf member **26,** striker plate **275** contacts and trips switch **276.** When switch **276** is tripped, the ram **106** is retracted.

When the ram **106** is almost fully retracted, a portion of the ram **106** trips switch **278** on the inner surface of the loading tray. See FIG. **2.** When the switch **278** is tripped, it initiates pivotable movement of the bag shelf member **26** from the horizontal position shown in phantom in FIG. **5** to the upright vertical position shown in full lines, thereby upending the bag for takeaway by means of the conveyor **28.** At the same time, tripping of switch **278** will signal cylinder **174** to drop the bag shelf **124** to the phantom position shown in FIG. **8** and open the valve **232** so that all air will escape to the atmosphere the next time the blower **228** is turned on. The machine **10** is now ready for a new cycle.

For purposes of clarity of disclosure, solenoids, relays, all of the conduits and electrical conductors have not been shown in the drawing. Such components are conventional and will be readily apparent to those skilled in the art as to where such components may be physically located. It will be appreciated that any one of a wide variety of microswitches or limit switches may be utilized to effect the aforesaid automatic sequencing of the machine **10.** We prefer to use Mead button bleeder switches for the switches such as switch **250** and Mead roller type bleed switches for a switch such as **252.**

As pointed out above, the striker plate **275** will trip switch **276** when the bag contacts the plate **275.** Switch **276** immediately retracts ram **106** to terminate the pushing effect so that fragile items in the bag will not be crushed.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

We claim:

1. A bagging machine comprising a hopper, a bag shelf, a mechanism for feeding bags from the hopper onto the shelf, means for holding and opening a bag by air pressure while the bag is horizontally disposed on said shelf, a stationary open top tray positioned in alignment with said shelf, transfer means movable from a first position adjacent said tray to a second position where it grips and moves an open bag from said shelf into telescoped relationship with respect to said tray beginning at one end of said tray and then releases the bag, a movable ram adjacent the other end of said tray, means for moving said ram between side walls of the tray for pushing a bag and the articles on the bottom wall of the tray off the tray after a bag is telescoped over the tray, and means for upending the fully loaded bag.

2. A machine in accordance with claim **1** wherein said hopper is a bottom feed hopper disposed to one side of said bag shelf, said mechanism including a reciprocal pusher for pushing a bag sideways onto the bag shelf with the mouth of the bag being directed towards said one end of said tray.

3. A machine in accordance with claim **1** wherein said means for holding the bag includes a movable clamp bar for engaging a bottom layer of the bag while the bag is being opened.

4. A machine in accordance with claim **1** including a movable flexible curtain on said tray adjacent said one end of said tray, and means for moving the curtain to render said one end of the tray open before said ram pushes articles and a bag off the tray.

5. A machine in accordance with claim **1** wherein said transfer means includes a scoop reciprocable with respect to the tray, said scoop having means thereon for engaging and holding a bag while moving the bag toward the tray.

6. A machine in accordance with claim **1** wherein said means for upending the bag includes a pivotably mounted member movable from a generally horizontal position overlying the bag shelf to a generally vertical position.

7. A machine in accordance with claim **1** wherein said means for holding and opening the bag includes a member mounted for movement to a position to restrict opening of the bag adjacent the mouth of the bag whereby the closed end will balloon due to air introduced into the bag.

8. A machine in accordance with claim **5** wherein the bag holding means on the scoop includes at least one cylinder on the scoop and reciprocably supporting a pad for movement toward and away from a side wall of the scoop.

9. An automatic bagging machine and checkout counter comprising a counter top having a conveyor for conveying articles to be bagged to a position wherein they may be reached by an operator, an open top stationary tray adjacent the conveyor, a movable ram forming a rear wall for said tray at an end thereof adjacent the conveyor, a power cylinder for said ram, said cylinder being disposed beneath said conveyor, a bag shelf aligned with said tray, means aligned with said shelf for receiving a fully loaded bag and upending the bag, a mechanism for feeding bags to said shelf one at a time, means associated with said shelf for ballooning open a bag on the shelf, a scoop reciprocably mounted from a position adjacent said tray to a position wherein it at least partially enters an open bag, means on said scoop for contacting and moving an open bag to a position wherein the bag is telescoped over said tray, means for clamping one layer of a bag at the mouth of the bag while the bag is being opened, means for releasing the clamping means before the scoop moves the bag to effect said telescoping relationship, and means including said cylinder for causing the ram to push articles off the

tray while simultaneously moving the bag away from the tray and towards said shelf.

10. A bagging machine in accordance with claim **9** including a movable curtain at one end of said tray, and said ram means having a position adjacent the opposite end of the tray.

11. A machine in accordance with claim **9** wherein said means for opening the bag includes a reciprocal nozzle, means for moving the nozzle to a position for introducing pressurized air into the bag to open the bag, and means for temporarily constricting opening of the mouth end of the bag.

12. A machine in accordance with claim **11** wherein said bag constricting means includes a closer bar movable downwardly toward said bag shelf, said bar having a resilient pad on its lower surface which is adapted to contact a bag.

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