April 4, 1961 W. M. SHOFFNER 2,978,069

CHECK OUT COUNTER

Filed Nov. 29, 1957 5 Sheets-Sheet 1

FIG-1

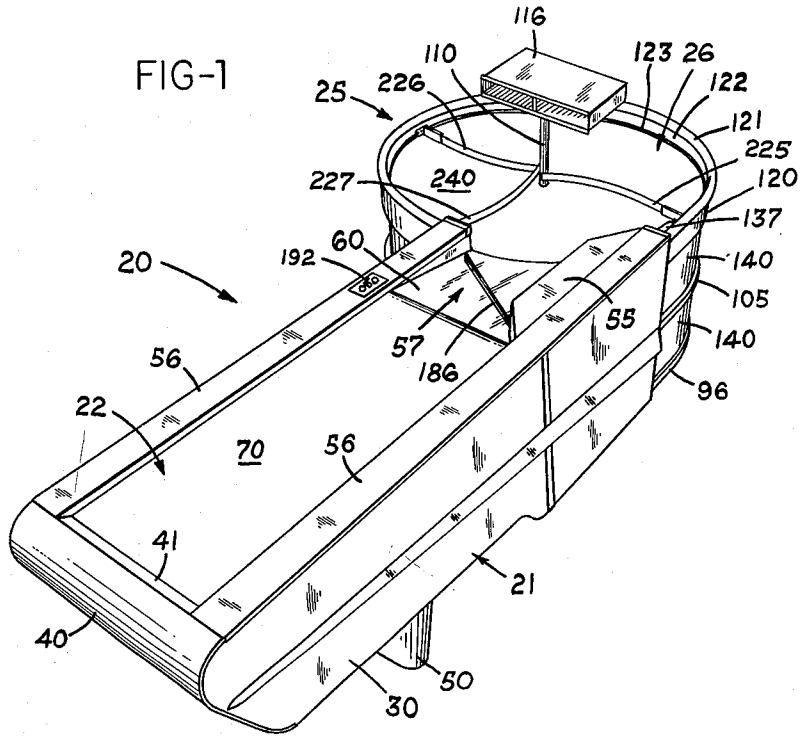
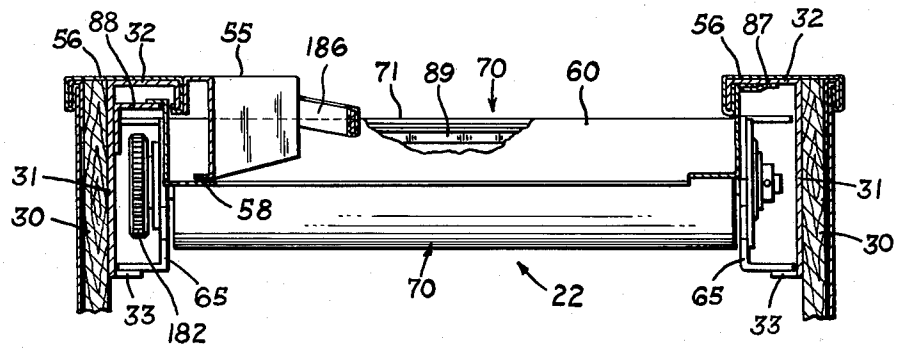



FIG-5




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CHECK OUT COUNTER

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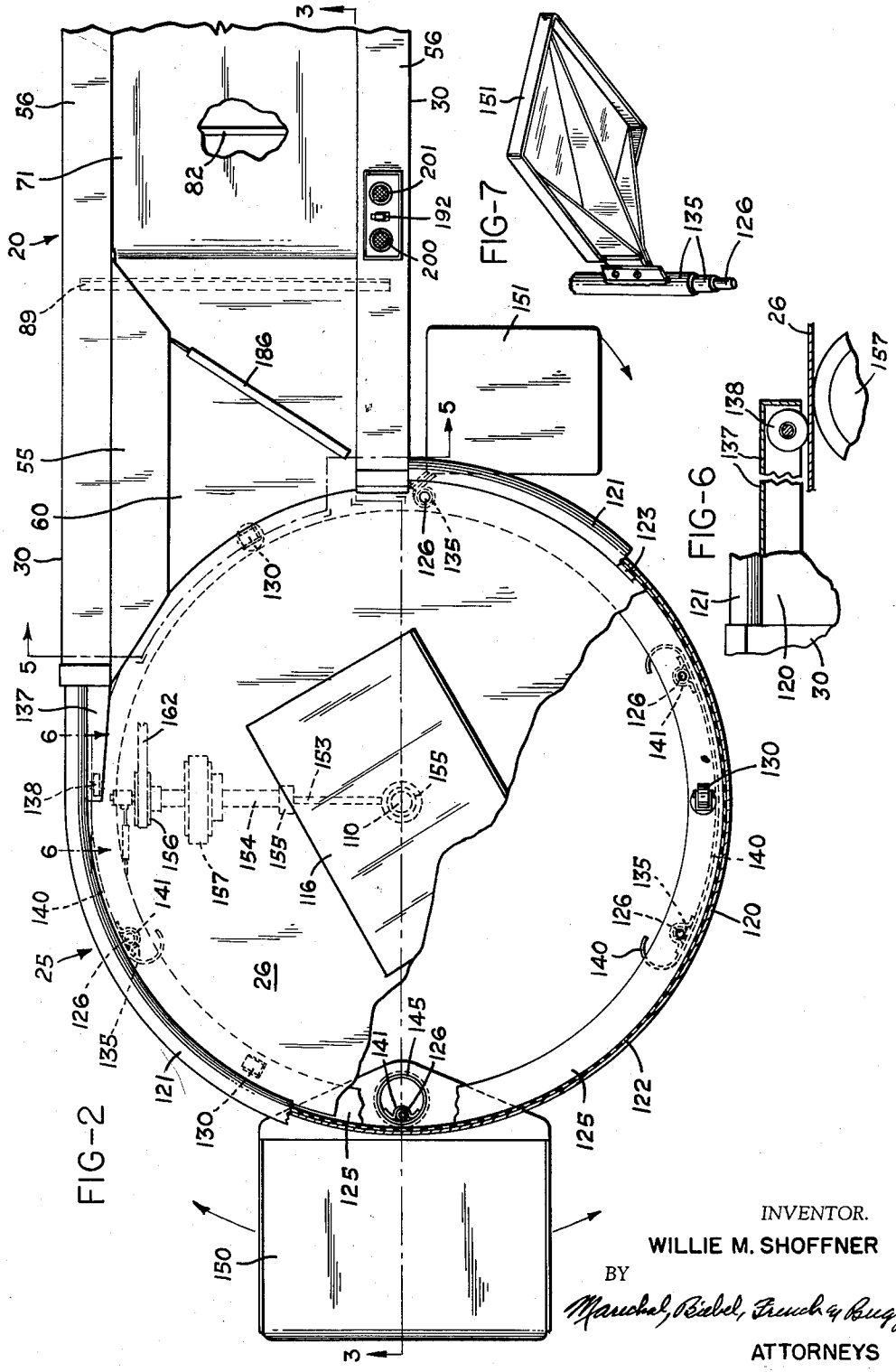


FIG-2



FIG-7



FIG-6

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CHECK OUT COUNTER

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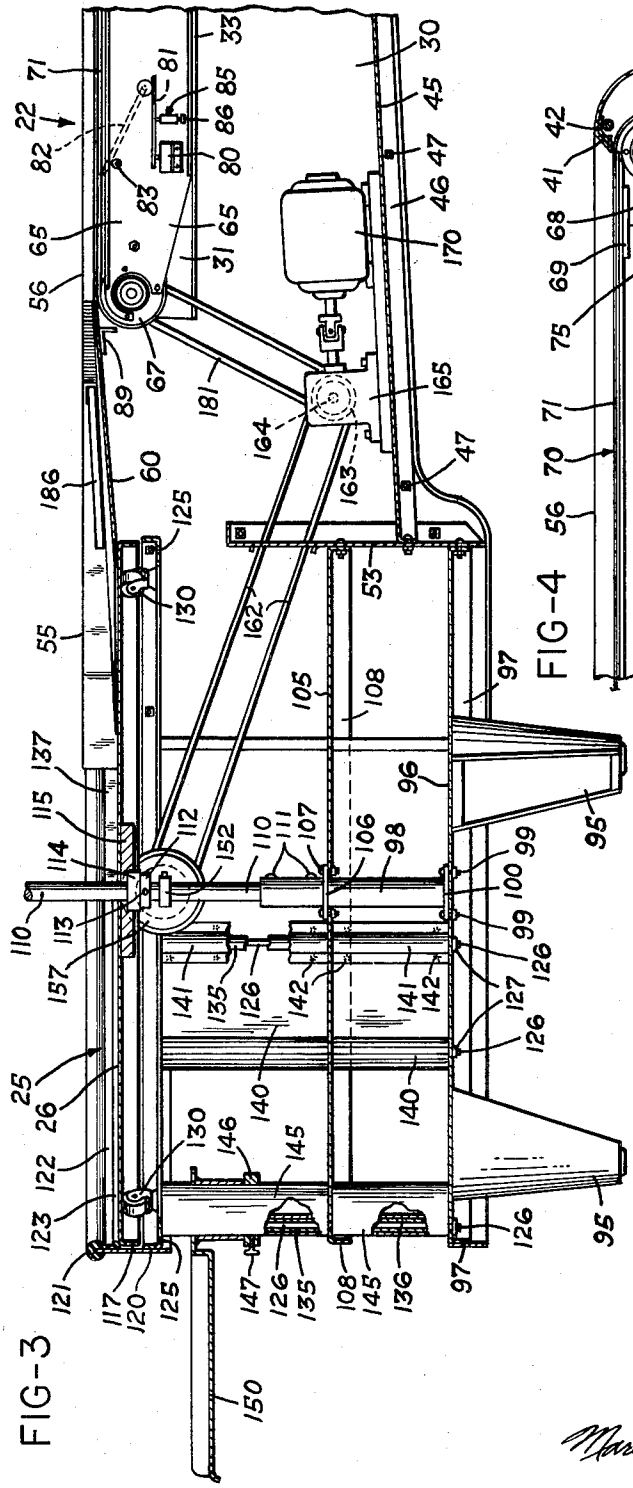


FIG-3

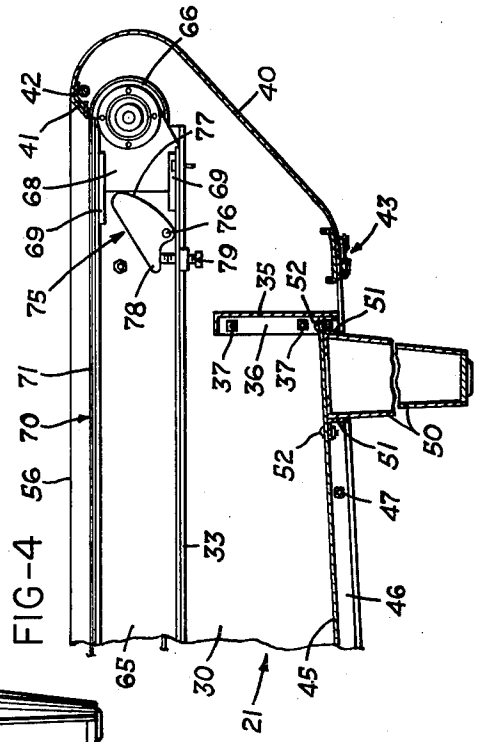


FIG-4

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CHECK OUT COUNTER

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FIG-10

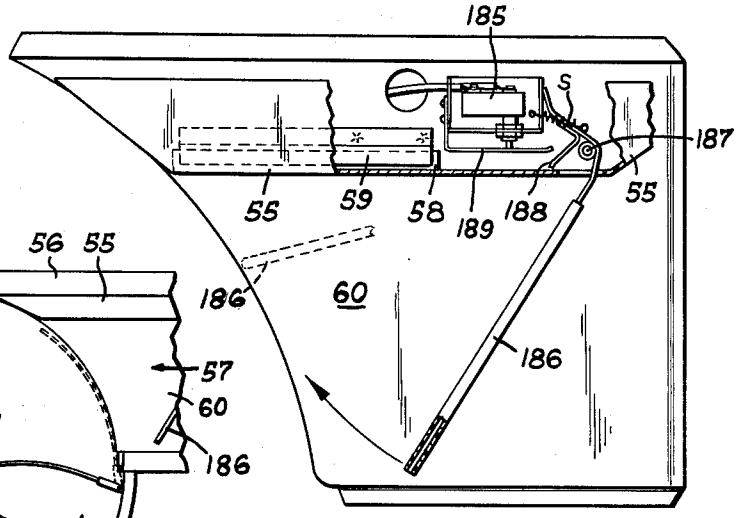



FIG-11

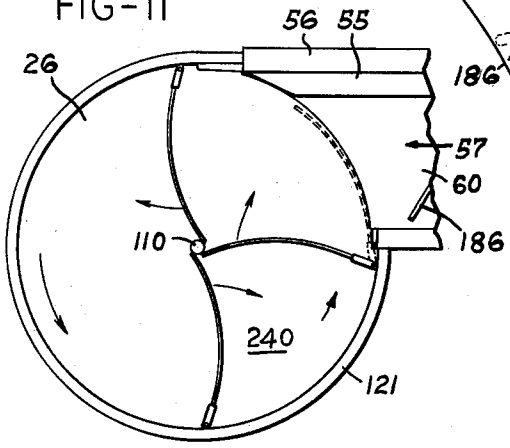



FIG-8

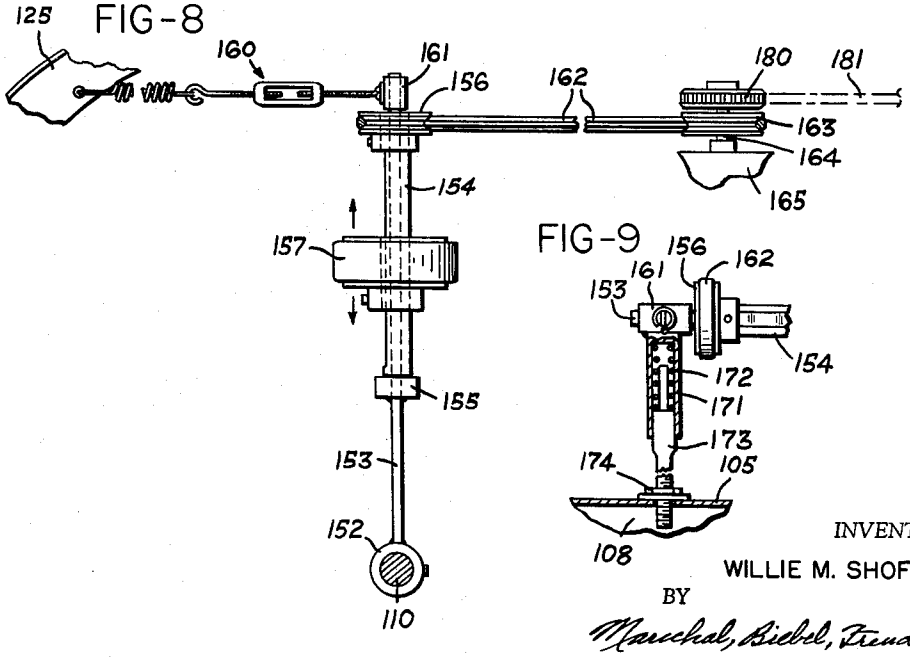



FIG-9




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CHECK OUT COUNTER

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FIG-15

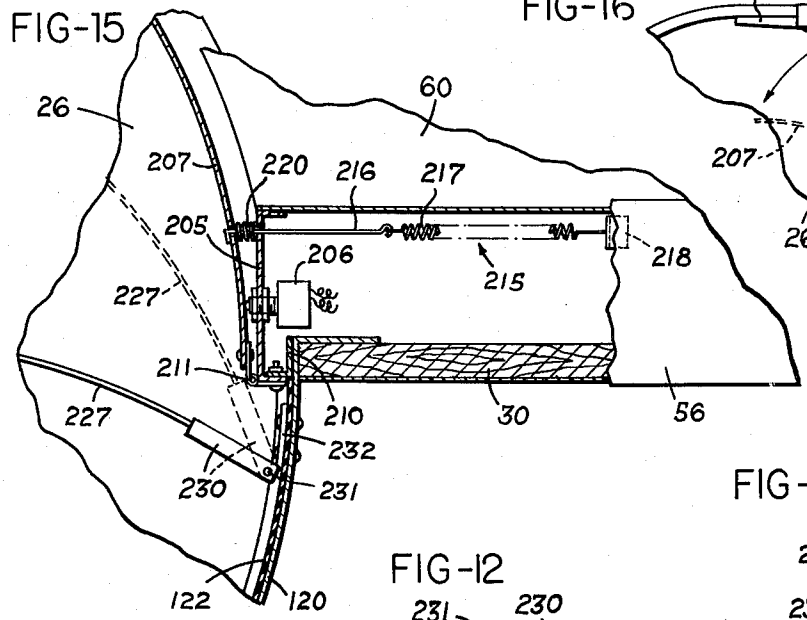



FIG-16

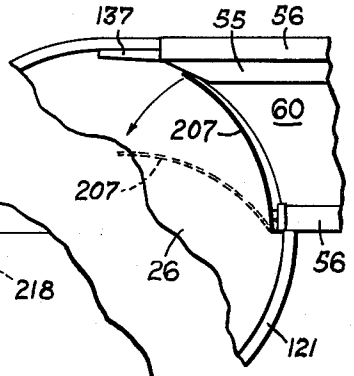



FIG-12

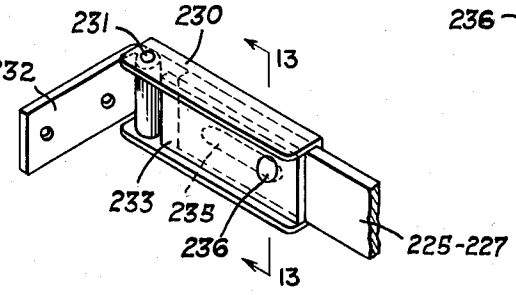



FIG-13

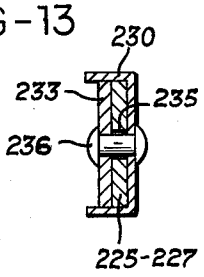
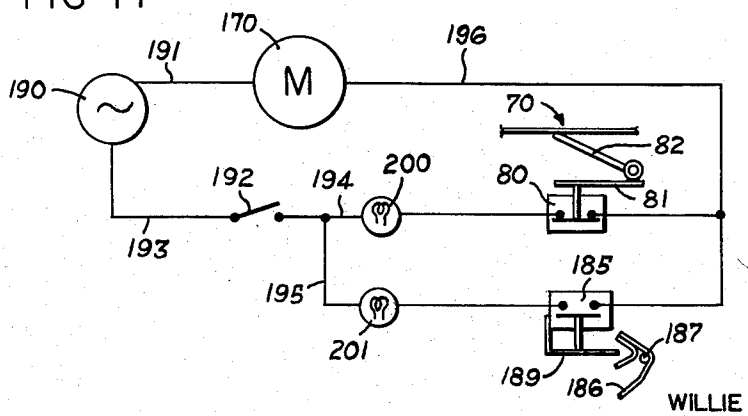



FIG-14




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United States Patent Office 2,978,069
Patented Apr. 4, 1961



2,978,069

# CHECK OUT COUNTER

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Filed Nov. 29, 1957, Ser. No. 699,826

14 Claims. (Cl. 186—1)

This invention relates to counters and more particularly to a check out counter of the type used in retail stores which has improved conveying apparatus.

A primary object of the invention is to provide a check out counter having article conveying units which are operated by the passage of articles from one portion of the counter to another, and in which the operation takes place for varying periods of time as determined by the quantity and size of articles on the counter.

Another object of the invention is to provide a check out counter having improved conveyor drive and control apparatus.

Another object of the present invention is the provision of a check out counter having an improved separator bar structure on the article loading table for separating different groups of articles.

Another object of the present invention is the provision of a check out counter having conveyors at different elevations facilitating handling and checking of the various articles by the person operating the counter.

Another object of the present invention is to provide a check out counter having bagging apparatus providing an increased rate of article checking either with or without checking personnel in addition to the checker.

Other objects and advantages of this invention will be apparent from the following description, the accompanying drawings and the appended claims.

In the drawings—

Fig. 1 is a perspective view of a check out counter according to the present invention;

Fig. 2 is a top plan view of a portion of the present check out counter with the separator bars removed for clarity;

Fig. 3 is a sectional view through a portion of the check out counter taken along the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary view of the loading portion of the counter with certain parts shown in elevation;

Fig. 5 is a fragmentary view along the line 5—5 of Fig. 2;

Fig. 6 is a fragmentary view showing the table drive means as taken along the line 6—6 of Fig. 2;

Fig. 7 is a perspective view of additional shelf means;

Fig. 8 is a top plan view of the table drive means;

Fig. 9 is a fragmentary side elevation showing the structure for urging the driving means into contact with the table;

Fig. 10 is a plan view of the gate and switch means adjacent the discharge end of the conveyor;

Fig. 11 is a plan view of the table showing the positioning of the separator bars;

Fig. 12 is a perspective view of the mounting means for the article separator bars;

Fig. 13 is a cross sectional view taken along the line 13—13 of Fig. 10;

Fig. 14 is a schematic wiring diagram showing the electrical connections between the motor and control switches;

Fig. 15 is a fragmentary plan view of another form of gate and switch apparatus for mounting between the conveyor and the table; and



Fig. 16 is a fragmentary perspective view showing the gate of Fig. 15 in position across the passage between the conveyor and the table.

Referring to Fig. 1, which illustrates a preferred embodiment of the invention, a check out counter 20 comprises an elongated supporting structure 21, a first conveyor unit 22 which is removable from supporting structure 21, a bagging or article receiving table 25 positioned adjacent the end of supporting structure 21 and a second conveying unit 26 which is located on bagging table 25 and is here shown as a rotatable top.

Referring first to the elongated supporting structure 21, the structure comprises a pair of generally parallel unitary side walls 30, constructed of plywood or the like, which carry a pair of elongated rail like brackets 31 attached to the inner surface thereof adjacent the upper edge of the walls. Both rails have an upper flange 32 and a lower flange 33 with the upper flange 32 being bent downwardly on the inner edge thereof to form a short downwardly extending flange parallel to the central body portion of the brackets 31. The outer ends of the side walls 30 are joined by a baffle plate 35 which has inwardly turned flanges 36 for attachment to the adjoining side wall by means of suitable fasteners 37. The extreme outer ends of the side walls 30 are closed by a curved end plate 40 having an angularly disposed flange 41 on the upper end thereof for locking beneath supporting bracket 42. The bracket 42 extends between the opposite side walls 30 to give the end plate 40 sufficient strength to withstand the weight of articles being placed on the supporting structure 21. The other end of the end plate connects to the bottom of supporting structure 21 by means of latches 43.

A bottom plate 45, having downturned flanges 46 on opposite sides thereof for connecting the plate to the inner surface of opposed side walls 30 by means of fasteners 47, closes the bottom of supporting structure 21. Bottom plate 45 can be used as a supply storage shelf if desired. Support is afforded the outer end of the supporting structure by means of a leg 50 which has an angle 51 attached to opposite sides thereof providing means for fastening the leg to the bottom plate 45 with bolts 52. The inner end of bottom plate 45 is bolted to an upstanding wall 53 which is also bolted to the bagging table 25 thus providing a means for connecting supporting structure 21 to the bagging table. The wall 53 is attached at either side to the inner surface of the generally parallel side walls 30 to provide rigid connections between these parts at the inner end.

A restrictor plate 55 is secured to the outermost of the side walls 30, beginning at the inner end of belt edging strip 56 and extends inwardly toward the inner of the walls 30 to define a throat 57 which collects and moves the articles toward the edging strip 56 on the other wall 30. Edging strips 56 line each side of the walls 30 to overlie the upper surface of brackets 31 and define the lateral limits of article conveying space. The lower edge of plate 55 is turned inwardly toward wall 30 and the upper edge interfits with flange 32 to hold plate 55 in position and retain the desired width of throat 57. Plate 55 has a flange 58 interfitting with guide 59 which can be attached to downwardly inclined ramp 60 by spot welding or other suitable means.

The conveyor unit 22 comprises a pair of spaced substantially parallel rails 65 which are joined together to receive belt rolls 66, 67 adjacent the loading and discharge ends thereof. The loading or outer belt roll 66 is journaled between a pair of mounting plates 68 which are slidably mounted on rails 65 by members 69 which cooperate to define a track in which the plate will slide.

An endless belt 70 having an upper flight 71 is mounted on the belt rolls to move articles from one end of the conveying structure to the other.

Adjacent the back edge of each of the mounting plates is a cam 75 pivoted at 76 to the adjoining side rail 65. Each cam 75 has a curved face 77 and a rearwardly extending pivot arm 78 which acts, under force resulting from adjustment of operating bolt 79, to cause pivotal movement of the cam about pivot point 76. Pivotal movement of the cam 75 causes the surface 77 to exert a pressure against the rear edge of plate 69 with the result that the belt roll 66 can be adjusted longitudinally to tighten belt 70. Since each side of the roll 66 is longitudinally adjustable, the belt 70 can be centered on as well as tightened about the rolls 66, 67.

A micro-switch 80 is mounted on the outer surface of one of the side rails 65 for operation by a pivotally mounted operator arm 81 which is, in turn, pivoted by an operator bar 82 that extends transversely of the belt 70 in contact with the lower surface of upper flight 71. A stop bar 83 extends between the rails 65 just beneath the transversely extending portion of operator bar 82 to limit the downward movement of the arm and prevent possible damage from articles of excessive weight which may be present on the conveyor belt. It is possible to adjust the force necessary to actuate micro-switch 80 by means of an adjustable spring arrangement 85. Adjusting screw 86 of spring arrangement 85 provides simple means for adjusting the pressure exerted by the spring arrangement. The inner or discharge end of belt 70 defines the checking station for articles carried by the belt, since the operator bar 82 is located adjacent the position where the checker normally stands.

The ramp 60 extends from the inner end of belt 70 to a position adjacent the rotating top 26 so that the operator can easily slide the articles from the checking position to the table with minimum effort following itemizing of the individual articles. It is not necessary for the operator to lift any of the articles but merely to slide them down the ramp onto the table, since the end of the ramp 60 adjacent the belt is substantially coplanar with upper flight 71. The ramp is supported on one side by a clip 87, on the other side by angle iron 88 and at the inner end by angle iron 89 which extends between the generally parallel extending side walls.

The bagging table 25 is supported on a plurality of legs 95 which are attached to a lower shelf 96, the shelf having a downturned flange 97 extending around its outer periphery. A hollow standard 98 is attached to the central portion of shelf 96 by bolts 99 which extend through flange 100, which is welded to the standard, and through shelf 96. A second generally circular shelf 105 is mounted on standard 98 through a flange 106 and bolts 107 in a manner similar to that in which lower shelf 96 is mounted on the standard 98. Shelf 105 also has a downturned flange 108 around its outer periphery.

A vertically extending shaft 110 has its lower end secured within standard 98 by means of lock screws 111 while a bearing plate 112 is secured to the shaft intermediate its lower and upper ends by means of a set screw 113. The bearing plate 112 provides a support for bearing 114, the bearing engaging reinforcing plate 115 on the underside of rotating top 26. The shaft 110 can be extended completely through top 26 to form a support for a scale platform 116 (Fig. 2), or the like, or can be constructed so that the upper portion above top 26 is removable.

The second conveyor unit or top 26 comprises a generally circular plate-like body constructed of a durable material such as stainless steel that provides a pleasing appearance and a long wearing surface for receiving articles. The top includes a downturned outer flange 117 providing strength and rigidity to the circumferential portions of the top.

A circumferential band 120 surrounds the outer edge of top 26 in spaced relation thereto and has a preformed mold strip 121 mounted on the upper edge thereof. Strip 121 has a buffer portion 122 carying a sealing ring 123 on the lower end thereof to close the space between the outer edge of top 26 and the inner surface of band 120.

A reinforcing member 125 is attached to the lower surface of band 120 and carries a plurality of downwardly extending rods 126 which are threaded at their lower ends for reception of nuts 127, after the rods have been threaded through suitable openings in shelves 96 and 105. A plurality of casters 130 are secured to reinforcing member 125 in inverted position to provide substantially frictionless support for the outer portion of top 26 which often holds a reasonably large weight of accumulated articles. Cylindrical pipes 135 and 136 are vertically spaced on each of the rods 126 to separate the shelves 96 and 105 as well as to provide additional bracing for the shelves.

A member 137 is mounted on band 120 to fill in the small space between the wall and the periphery of band 120 and to insure that top 26 is kept in constant contact with casters 130. Member 137 carries a roller 138 adjacent its outer end making contact with the upper surface of top 26 to retain the top in contact with its driving means and against casters 130, as described.

Decorative panels 140 are secured to rods 126 by means of U-shaped mounting brackets 141, to enclose part of the area between the vertically spaced shelves and define storage areas for bags and the like. The mounting brackets 141 are secured to the back side of the panels 140 by any suitable means such as spot welds 142.

As best shown in Fig. 3 of the drawings, one of the rods 126 is enclosed by cylindrical members 145. The upper of the two cylindrical members 145 has an annular collar 146 mounted for vertical adjustment by a thumb screw 147, the vertical adjustment of the collar being effected by loosening the screw and moving the collar to the desired position and then retightening the screw to hold the collar in position. The collar 146 serves as a mounting abutment for freely pivoting bagging shelf 150, the shelf having a downwardly extending tubular portion which surrounds one cylindrical member 145. Since the bagging shelf is free to pivot, a person who accidentally bumps into the shelf can push it out of the way without incurring injury which might otherwise result. Additionally, during slack periods when a separate bagging operator would not normally be used on the counter, the bagging shelf can be easily swung out of the way into the space between rotatable top 26 and second shelf 105.

During periods when the bagging operator is not used, it is the normal practice for the checker, that is the person who tabulates the prices of the articles being purchased, also to effect bagging of the purchased articles. To eliminate the necessity of the checker's walking around the table 25 to the bagging shelf 150, a second bagging shelf 151 is provided adjacent the checker's normal working position (see Fig. 2). Shelf 151 serves also as a seat for the checker during the checking operation, either with or without a bagging operator being present. This feature therefore not only eliminates unnecessary steps by the checker but also speeds up the entire checking process by providing for bagging at the checker's position when desired.

Rotation of top 26 is effected through a driving arrangement including a collar 152 carried on shaft 110 just below bearing support 112 for the purpose of providing means for mounting one end of a shaft 153 which carries a drive sleeve 154. The sleeve 154 is positioned between a collar 155, which is integrally attached to shaft 153, and carries a pulley 156 on the opposite or outer end.

As best shown in Fig. 8, the sleeve 154 has a friction

wheel 157 mounted for radial adjustment thereon to vary the rotational speed of top 26. A turnbuckle-spring biasing arrangement 160 extends between the reinforcing structure of the table 25 and a collar 161 on the shaft 153 to provide a means for continuously pulling drive belt 162 tightly against the pulley. At the other end, belt 162 encircles pulley 163 on the drive shaft 164 of transmission 165, the transmission being driven by motor 170 (Fig. 3).

In order that friction wheel 157 will properly engage table top 26 a hollow sleeve 171 is attached to collar 161 and receives a coil spring 172 which pushes against the upper end of support rod 173. Rod 173 is attached at its lower end to shelf 105 by means of nut 174 which prevents the rod from slipping through the opening in the table but still provides for the limited pivotal or rocking movement of rod 173 caused by spring arrangement 160 in tightening belt 162.

Operation of the conveyor belt 70 and the rotatable top 26, which constitute the first and second conveyor means respectively, is, as mentioned, effected by means of the electric motor 170 through transmission 165, both the motor and the transmission being conveniently mounted on bottom plate 45. The output shaft 164 of the transmission 165 carries, in addition to pulley 163, a sprocket 180 (Fig. 8) which receives a drive chain 181 for effecting a driving connection with sprocket 182 carried on the shaft of inner belt roll 67. Thus the single motor 170 is used to drive both the belt 70 and the rotatable top 26.

The number or quantity of articles passing from conveyor belt 70 to table 26 over ramp 60, in the course of a day's time, may be quite large and since the operator is required to itemize each article as it is moved from one conveyor to the other, he will be required to expend considerable physical effort. Obviously the checking operation can be speeded up and the operator required to do less work if the articles are automatically advanced toward the check station as the articles are tabulated and also if they are removed from the checking station following tabulation. To alleviate the physical effort required, the conveyor 70 is situated at a higher elevation than is the top 26 so that the ramp 60 will be inclined, as previously mentioned, to aid the operator in sliding the articles between conveyors. Even when the articles have been slid onto table top 26 the area immediately adjacent the end of ramp 60 will soon become filled with articles and necessitate removal from the area by the operator since the table top will not rotate while articles are depressing operator bar 82 to interrupt micro-switch 80.

Therefore, a micro-switch 185 is secured to the upper surface of ramp 60 within restrictor 55 to by-pass micro-switch 80 when articles are slid down ramp 60. The micro-switch 185 is actuated by means of an arm or gate 186 which extends across the throat 57 from within the interior of restrictor 55. The gate is hinged about axis 187 and carries an actuating arm 188 on the other side of the pivot axis from gate 186 which cooperates with spring arm 189 to actuate the micro-switch. Spring S is suitably connected to bias gate 186 to its normal position across ramp 60. Articles being moved down the ramp 60 will cause pivotal movement of gate 186 in a clockwise direction about pivot axis 187 and thereby operate micro-switch 185 actuating motor 170 and thereby operating belt 70 and table top 26. Such operation of course moves the articles a slight distance from the end of the ramp 60. The passage of subsequent articles through throat 57 will likewise cause actuation of the motor and further remove the articles from the discharge end of the ramp to make room for new or additional articles.

The size of the article will to some extent determine the amount of time which the motor 170 is energized since the gate 186 must be swung a greater or lesser distance to permit passage of the article through the restricting throat 57.

For example, if a relatively large item such as a bag of potatoes, sugar, etc. reaches the checking station and interrupts the motor circuit the removal of the article will leave a relatively large vacant space on the belt adjacent the check out station. At this time the micro-switch 80 may still be held open by smaller articles resting on operator bar 82 so that the belt 70 will not operate. Therefore when the large article is pushed down ramp 60 through gate 186 the gate will necessarily stay open for a longer period of time than would be the case with a smaller item, and operate the conveying units for a time period sufficient to advance additional articles to the checking station. Additionally, the removal of a small article will require less advancement and such less advancement is achieved through the lesser time period required to move the article through the gate. Of course, a number of small items can be checked individually and moved onto the ramp 60 for group movement through gate 186 at any desired time.

Referring to Fig. 14 of the drawings to understand the electric circuitry, a power source 190 is connected to the motor 170 through a line 191 and to a switch 192 through line 193. The switch 192 can be the usual toggle-type, off-on switch and is mounted in the upper surface of belt edging strip 56 adjacent the checking station. The dead side of switch 192 has lines 194, 195 connected in parallel to the line 196 coming from the motor 190. The line 194 contains a red light 200 and micro-switch 80 connected in series and the line 195 has green light 201 and micro-switch 185 connected in series. The red light 200 and the green light 201 are mounted on either side of switch 192 to inform the operator of the condition of micro-switches 80 and 185. When micro-switch 80 is closed the red light will be illuminated while during the time micro-switch 185 is closed the green light 201 will be illuminated.

Thus, as shown in the drawings, when toggle switch is open no power will be supplied to motor 190 because the circuit is open. Upon closure of switch 192 the circuit will be completed through the micro-switch 80 to the motor 190 and the conveyor belt 70 and top 26 will operate. The presence of articles on the belt at the checking station will open micro-switch 80 and the line 194 disrupting motor 190 and any further movement of belt 70. At this time the articles come to rest adjacent the checking station so that the operator can tabulate the prices of the individual articles and slide them toward table top 26 through operator gate 186. When this is done the operator gate is moved from its position transverse of the ramp 60 and causes closure of micro-switch 185 to complete line 195. This operation once again closes a circuit to motor 190 and both the conveyor belt 70 and the table top 26 are driven.

In a modified form of gate structure shown in Fig. 15 of the drawings, the inner side wall 30 has an end closure plate 205 which carries a micro-switch 206 that is held in normally open position by the operator gate 207. The micro-switch 206 and operator gate 207 replace the micro-switch 185 and operator gate 186 previously described. The gate 207 is pivotally mounted to the angle 210, by means of a hinge 211 and is drawn or biased toward a normally closed position by means of spring arrangement 215. The spring arrangement 215 includes an elongated connecting rod 216 that extends through gate 207 and closure plate 205 into the area between belt edging strip 56 and side wall 30. Coil spring 217 is attached to the connecting rod 216 at one end and to bracket 218 at the other end to draw the gate toward the position holding the switch 206 in the normally open position. In this position the gate 207 extends generally transversely of the ramp 60 in much the same manner as gate 186 so that articles being pushed down ramp 60 from the checking station on the inner end of

conveyor belt 70 onto the table top 26 will necessitate pivotal movement of the gate and cause switch 206 to close. A shock absorbing spring 220 is mounted on rod 216 between gate 207 and the closure plate 205. As shown in Fig. 16 the outer end of gate 207 will contact the sloped end surface of restrictor 55 when in its closed position thus forming a tight closure of throat 57.

During work periods when separate groups of articles belonging to different purchasers immediately follow each other it is advantageous that the person doing the checking can begin checking a subsequent order immediately upon completion of the preceding order without waiting for the bagging operator to remove all of the articles from rotating top 26. To do this means are provided to effectively separate the successive orders into groups and avoid confusion of the orders. Also, a single individual order may contain fragile or perishable items such as eggs, fruit and certain vegetables, which should be loaded last to avoid breaking or crushing thereof. Separation is afforded in the present invention by a plurality of rigid separator bars 225, 226, 227 which are hinged to the inner surface of circumferential band by means of hinge plates and screws.

As shown in Figs. 12 and 13 each of the separator bars has a body member 230 of generally U-shaped cross section to receive hinge pin 231 for attachment to the hinge plate 232. The body member 230 has a vertically extending plate 233 spaced from the central web to receive the end of each of the separator bars 225—227. As shown, the inner ends of the separator bars are slotted as at 235, to receive a rivet or bolt 236 that extends through body member 230 and wall 233.

By slotting the inner end of the separator bars they can be elongated to contact shaft 110 and prevent articles from revolving around the table 26 past the particular bar. On the other hand, the effective length can be shortened by sliding the bar toward hinge pin 231 so that the inner end of the bar will clear shaft 110 and, in the case of bars 225, 226, pivot against the inner surface of circumferential band 120.

In use, the purchaser, such as a person buying food in a super market, unloads his articles on the loading end of supporting structure 21 while motor 170 is energized through switch 192 to drive conveyor belt 70. At this time micro-switch 80 is closed and micro-switch 188 is open. As the articles progress toward the discharge end of the belt, adjacent the checker's position they pass over operator bar 82 and open micro-switch 80 causing deactuation of driving motor 170 with consequent stoppage of the conveyor belt 70. As the checker is itemizing each article he can either slide them down ramp 60 one at a time onto rotatable top 26 thereby closing micro-switch 185 through pivotal movement of operator gate 186 or he can collect a group of itemized articles on the ramp 60 and push them as a unit past gate 186. In either case, the motor 170 will be energized during the time period which the gate is opened by the passage of articles from the discharge end of supporting structure 21 onto rotatable top 26. Closing of micro-switch 185 permits the electric current to bypass the circuit controlled by micro-switch 80 so that motor 170 can operate when articles are located above operator bar 82. The length of the interval the motor 170 will be energized by articles passing through gate 186 depends upon the size of the article thereby giving an operating period commensurate with the size of the article to assure adequate advancement of the articles on the belt 70 and the articles being loaded onto table 25. As the articles are advanced onto the table 25, separator bar 225 would initially be resting against band 120 so that the articles would advance toward separator bar 226.

If, during the course of checking, certain fragile articles appear the operator can individually lift them to the space 240 between bars 226 and 227 and effectively prevent heavier articles from pushing against them, protection being assured by the bar 226. Since the bagging operator will be standing adjacent the bagging shelf 150 when he is loading the heavier articles that are stopped by separator bar 226, the more fragile articles which the checker places in space 240 will be out of reach. When the checker has completed his checking of a particular order, bar 227 can be released and the fragile articles formerly occupying space 240 permitted to advance around the top 26 to a location adjacent the bagging operator's position.

Additionally, since the rotation of top 26 is only intermittent rather than continuous, the amount of sliding friction between the articles resting against the various separator bars and the table top is reduced. Reduction or removal of such sliding friction is advantageous not only from the standpoint of protecting the articles on the table but also prolonging the life of table top 26.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that this invention is not limited to this precise form of apparatus and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. A checkout counter comprising in combination, an elongated supporting structure having loading and discharge ends, a conveyor belt having an upper conveying flight mounted in said supporting structure for transporting articles from the loading end of said structure to a checking station adjacent the discharge end thereof, a table positioned adjacent the discharge end of said structure, an article receiving top mounted for rotary movement about a vertical axis secured to said table, a drive wheel secured to said table in contact with the underside of said rotatable top, a motor operably connected to said drive wheel to effect rotation of said top, means operably connecting said motor to said conveyor belt, an electric circuit for energizing said motor, and switch means in said electric circuit operated by the passage of articles from the discharge end of said supporting structure onto said rotatable top to energize said motor and operate said conveyor belt and said table top simultaneously.

2. A check out counter comprising in combination, an elongated supporting structure having loading and discharge ends, first conveying means mounted in said supporting structure for transporting articles from the loading end of said structure to a checking station adjacent the discharge end thereof, a table positioned adjacent the discharge end of said structure, second conveyor means mounted on said table to receive articles from the discharge end of said supporting structure, a bagging shelf pivotally mounted on said table for pivotal movement into a stored position within said table, driving means including the motor operably connected to said first and second conveying means, an electric circuit for energizing said motor, and switch means in said electric circuit operated by the passage of articles from the discharge end of said supporting structure onto said second conveying means to energize said motor and operate said first and second conveying means.

3. A checkout counter comprising in combination, an elongated supporting structure having loading and discharge ends, first conveying means mounted in said supporting structure for transporting articles from the loading end of said structure to a checking station adjacent the discharge end thereof, a table positioned adjacent the discharge end of said structure, second conveyor means mounted on said table to receive articles from the discharge end of said supporting structure, a bagging shelf pivotally mounted on said table for pivotal movement into a stored position within said table, a second bagging shelf attached to said table substantially opposite said first bagging shelf providing a seat for the operator adjacent the checking station, driving means including the motor operably connected to said first and second conveying

means, an electric circuit for energizing said motor, and switch means in said electric circuit operated by the passage of articles from the discharge end of said supporting structure onto said second conveying means to energize said motor and operate said first and second conveying means.

4. A check out counter comprising in combination, an elongated supporting structure having loading and discharge ends, first conveying means mounted in said supporting structure for transporting articles from the loading end of said structure to a checking station adjacent the discharge end of said structure, a table adjacent the discharge end of said supporting structure, a rotatable top mounted on said table at a lower elevation than said first conveying means for receiving the articles from the checking station, driving means including a motor operably connected to said first conveying means and to said rotatable top to effect operation thereof, an electric circuit for energizing said motor and said driving means, a ramp inclined downwardly from the end of said first conveyor means to said rotatable top at the discharge end of said supporting structure, switch means in said electric circuit, and a switch operator bar extending across said ramp providing for operation of said switch to actuate said driving motor in response to passage of articles from said ramp onto said rotatable table top.

5. A check out counter comprising in combination, an elongated supporting structure having loading and discharge ends, first conveying means mounted in said supporting structure for transporting articles from the loading end of said structure to a checking station adjacent the discharge end of said structure, a table adjacent and at a lower level than the discharge end of said supporting structure, a rotatable top on said table for receiving the articles from the checking station, driving means including a motor operably connected to said first conveying means and to said rotatable top to effect operation thereof, an electric circuit for energizing said motor and said driving means, a ramp leading from said discharge end of said first conveyor means to said rotatable top at the discharge end of said supporting structure, switch means in said electric circuit, and a switch operator bar extending across said ramp providing for operation of said switch to actuate said driving motor in response to passage of articles from said ramp onto said rotatable table top.

6. A check out counter comprising in combination, an elongated supporting structure having loading and discharge ends, belt conveying means having an upper conveying flight for transporting articles from the loading to the discharge end of said supporting structure, a table including a rotatable top positioned adjacent the discharge end of said structure to receive articles therefrom, driving means including an electric actuating circuit for operating said conveyor belt and said rotatable top, first switch means operably contacting the lower surface of said upper conveying flight providing for interruption of said actuating circuit in response to the weight of articles being transported by said upper flight, and second switch means connected to said actuating circuit to operate said driving means in response to the passage of articles from the discharge end of said supporting structure onto said rotatable table top.

7. A check out counter comprising in combination, an elongated supporting structure having loading and discharge ends, first conveying means including an upper conveying flight for transporting articles from the loading to the discharge end of said supporting structure, a table adjacent the discharge end of said supporting structure, a rotatable top on said table for receiving articles from the discharge end of said supporting structure, an electric motor operably connected to said first conveying means and to said rotatable table top to effect operation thereof, an electric circuit for actuating said motor, first switch means having an actuator bar operably contacting the lower surface of said upper flight providing for deactuation of said motor in response to the weight of articles being transported by the upper flight of said conveyor, second switch means connected in circuit with said first switch means to provide for actuation of said motor when said first switch means is held open by the weight of articles on said conveyor belt, and an operator gate operatively connected to said second switch pivotally secured to said counter and extending across the discharge end of said supporting structure, said operator bar providing for closing of said normally open switch to actuate said driving motor in response to passage of articles from said supporting structure onto said rotatable table top.

8. A check out counter comprising in combination, an elongated supporting structure having loading and discharge ends, first conveying means including an upper conveying flight for transporting articles from the loading to the discharge end of said supporting structure, a table adjacent the discharge end of said supporting structure, a ramp supported between said first conveying means and said table, a rotatable top on said table for receiving articles from said ramp, an electric motor operably connected to said first conveying means and to said rotatable table top to effect operation thereof, an electric circuit for actuating said motor, first switch means having an actuator bar operably contacting the lower surface of said upper flight providing for interruption of said motor circuit in response to the weight of articles on said upper flight, a second switch mounted on said counter and connected in circuit with said first switch means, an operator gate pivotally attached to said supporting structure, and spring biasing means connected between said supporting structure and said gate holding said gate transversely of said ramp and in contact with said second switch, said switch closing upon movement of said gate by articles passing from said ramp onto said table to cause operation of said motor.

9. A check out counter comprising in combination, a supporting structure including a conveyor unit having loading and discharge ends, a table adjacent the discharge end of said supporting structure to receive articles therefrom, a rotatable top on said table, a shaft extending upwardly from the center of said top, a rigid separator mounted on said table, and means adjustably securing said rigid separator to said table for pivotal movement against the outer wall of said table and for longitudinal adjustment to lock said separator in non-pivoting position against said shaft.

10. A check out counter comprising in combination, a supporting structure including a conveyor unit having loading and discharge ends, a table adjacent the discharge end of said supporting structure to receive articles therefrom, a rotatable top on said table, a member extending upwardly from the center of said top, a rigid separator mounted on said table, a hinge pivotally securing said separator to said table, and a pin on said hinge extending through a slot in the end of said separator bar for longitudinal adjustment of said separator into and from engagement with said shaft.

11. In a grocery store check out counter, a conveyor belt movably supported in said counter and having a loading end and a discharge end, a bagging table rotatably supported by said counter and spaced from said discharge end, electric drive means operably connected to move said belt and to rotate said table, a ramp positioned on said counter between said discharge end and said table for receiving groceries from said belt and delivering them to said table, and electrical circuit opening and closing means operably connected to said drive means and having a control arm pivotally supported above and overlying said ramp for swinging movement in response to the delivery of groceries from said belt onto said ramp to provide for the passage of said groceries on said ramp from said discharge end to said table.

12. In a grocery store check out counter, a conveyor belt movably supported in said counter and having a loading end and a discharge end, a bagging table rotatably supported by said counter at a lower level than and spaced from said discharge end, motor means operably connected to move said belt, an inclined ramp positioned on said counter between said discharge end and said table for receiving groceries from said belt and delivering them downwardly to said table, a gate pivotally supported above and overlying said ramp for swinging movement in response to the delivery of groceries from said belt onto said ramp to provide for the passage of said groceries from said discharge end to said table, and switch means electrically connected to operate said motor means and positioned for actuation by the movement of said gate.

13. In a grocery store check out counter, a conveyor belt movably supported in said counter and having a loading end and a discharge end, a bagging table rotatably supported by said counter at a lower level than and spaced from said discharge end, electric drive means operably connected to move said belt, an inclined ramp positioned on said counter between said discharge end and said table for receiving groceries from said belt and delivering them downwardly to said table, a restrictor plate mounted on said ramp defining a throat for the passage of groceries therethrough from said belt to said table, a gate pivotally mounted on said counter overlying said throat and biased in a normally throat closing position for opening movement in response to the delivery



of groceries from said belt onto said ramp, and switch means electrically connected to operate said drive means and positioned for actuation by the movement of said gate.

14. A grocery store check out counter comprising, a supporting structure including a conveyor unit having a grocery loading end and a grocery discharge end, a table adjacent said discharge end for receiving groceries discharged therefrom, said table having a rotatable top received within a relatively fixed substantially circumferential grocery retaining wall and a center post, and a plurality of wall conforming grocery separating partitions mounted in spaced relation on said wall for pivotal movement in overlying relation to said table against said center post for dividing said table into a plurality of distinct grocery retaining segments.

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