

Dec. 13, 1960

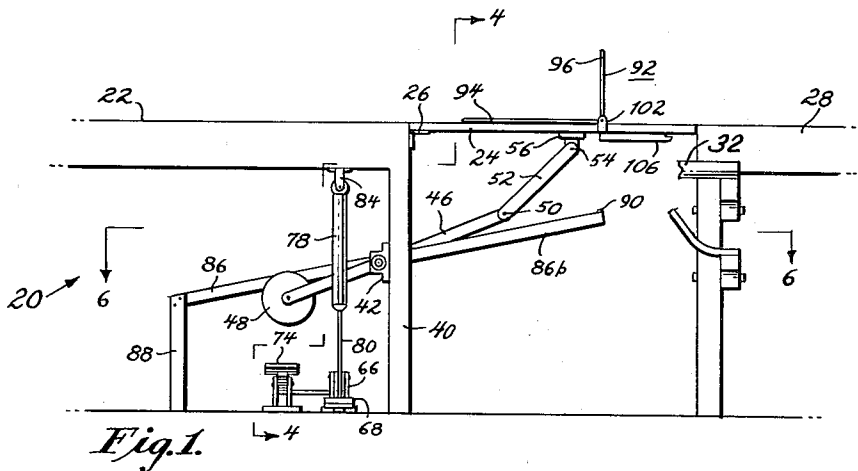
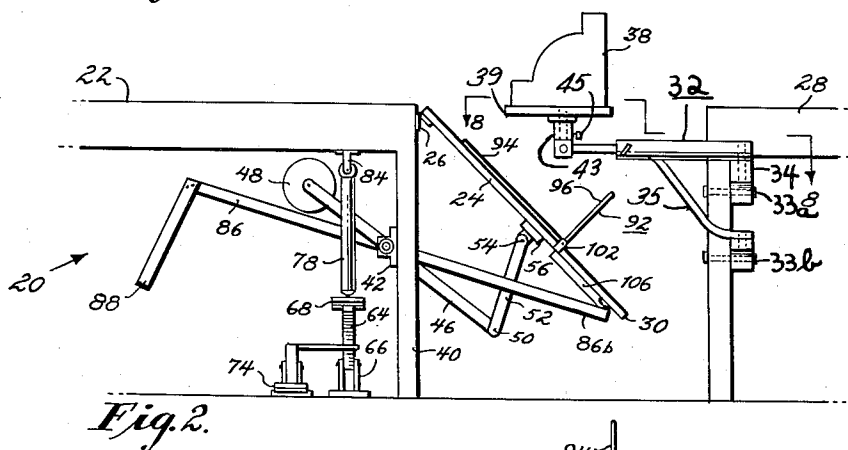
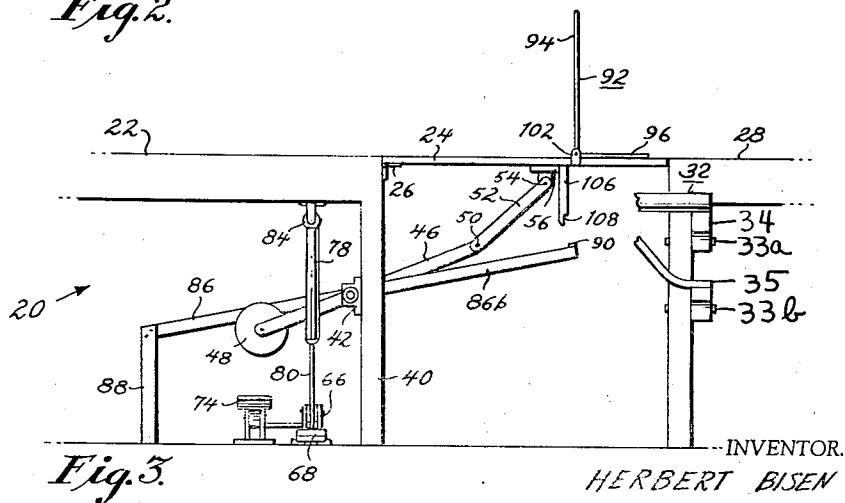
H. BISEN

2,964,134

CHECKOUT COUNTER

Filed Oct. 17, 1957

2 Sheets-Sheet 1



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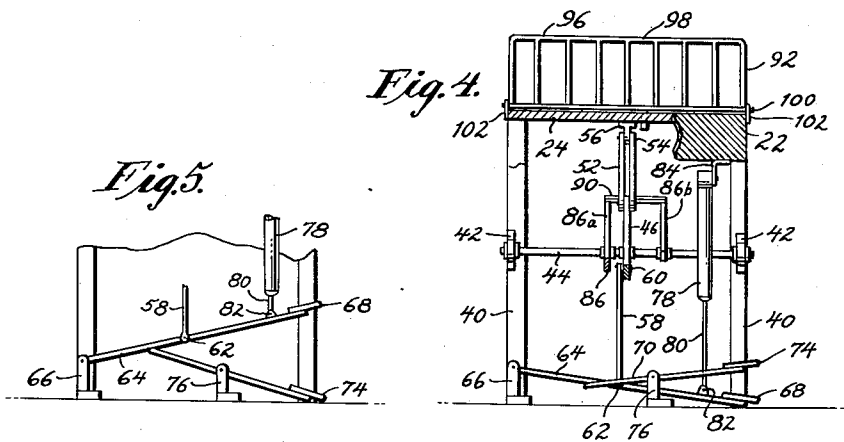
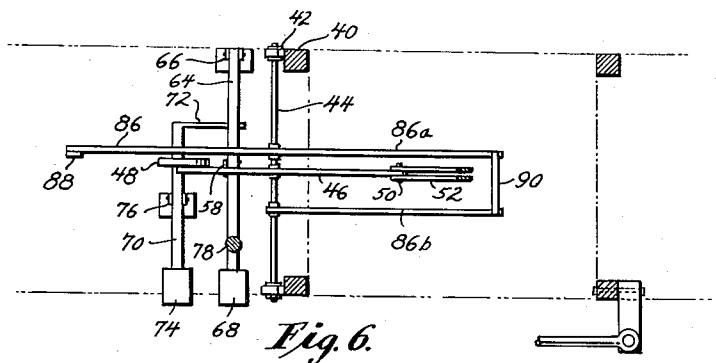
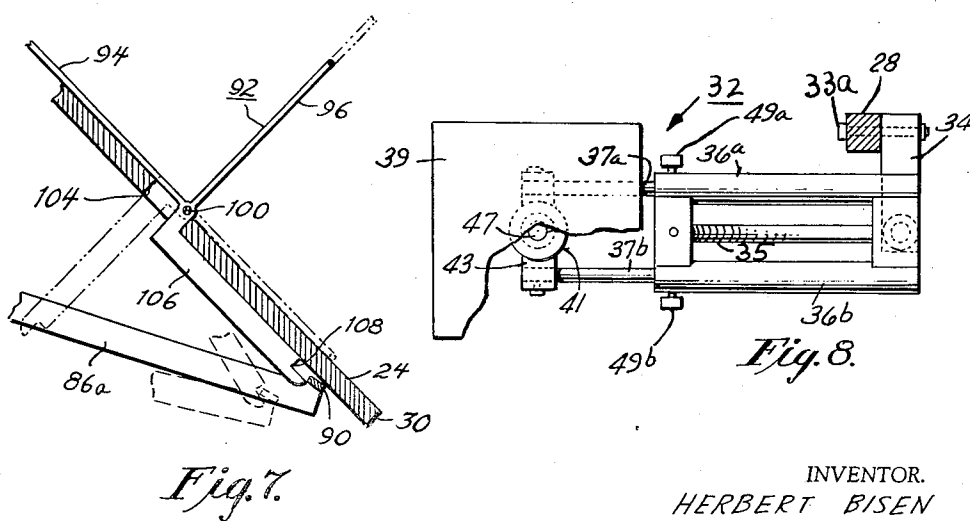
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H. BISEN
CHECKOUT COUNTER

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2 Sheets-Sheet 2



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2,964,134

CHECKOUT COUNTER

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7 Claims. (Cl. 186—1)

The present invention is directed to a checkout counter for supermarkets and the like, and more particularly to a checkout counter in which totaling of purchases and packaging of purchases may be readily accomplished.

Satisfactory totaling and packaging of purchases in supermarkets has long constituted a difficult problem. In large supermarkets where optimum merchandising requires high speed satisfaction of customers, present checkout systems are manned by two or more clerks, particularly during peak purchasing time periods. Thus, one clerk totals the purchases at the cash register, and one or more additional clerks arrange for the packaging of the purchases.

Since in large supermarkets there may be as many as five or more checkout counters in simultaneous operation, the cost of labor resulting from the present inefficient checkout systems is very high.

This invention has as an object the provision of a checkout counter in which facile totaling of the purchases and simultaneous facile packaging of such purchases into a bag may be accomplished by a single checkout clerk.

This invention has as another object the provision of a checkout counter in which loading of a bag is facilitated since a plurality of positions are provided permitting the optimum loading of the bag responsive to the level of the bag's contents, so that an empty bag may be loaded in a position which is most convenient for loading an empty bag, and a relatively full bag may be loaded in a position which is most convenient for loading a relatively full bag.

The present invention has as still another object the provision of a checkout counter whose cash register is movable between a plurality of positions in order to permit the checkout clerk ease of access to the purchases, cash register, and bag while totaling and loading the purchases.

Other objects will appear hereinafter.

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

Referring to the drawings, wherein like reference characters refer to like parts:

Figure 1 is an elevational view seen from the clerk's side of the checkout counter of a preferred embodiment of the present invention, with such embodiment being disposed in its starting position, or position in which it is to receive an empty bag, which position is also used for the loading of such empty bag, and with the mechanism for moving the cash register or cash register keyboard being broken away.

Figure 2 is a view generally similar to that of Figure 1 of the embodiment of Figure 1 except that such embodiment is disposed in its loading or intermediate position, in which position facile disposition of purchases into the upper portion of the bag may be accomplished, and the

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mechanism for moving the cash register or cash register keyboard is shown.

Figure 3 is a view generally similar to that of Figure 1 of the embodiment of Figure 1 except that such embodiment is disposed in its finished or final position, in which position the bag may be removed from the checkout counter.

Figure 4 is a view taken on line 4—4 of Figure 1.

Figure 5 is a fragmentary view showing the arrangement of the pedals.

Figure 6 is a view taken on line 6—6 of Figure 1.

Figure 7 is a fragmentary view revealing the structure and operation of the bag rack linkage and driving means.

Figure 8 is a fragmentary plan view, partly in section, revealing one form of mechanism which may be utilized for the movement of the cash register or the keyboard of the cash register in the checkout counter of the present invention.

Referring initially to Figures 1 through 8 inclusive, the checkout counter of the present invention is designated generally as 20. Checkout counter 20 includes a fixed staging table 22, a loading panel 24 pivotably secured to staging table 22 by means of hinge 26, and a rigid discharge table 28 which abuts the free end 30 of loading panel 24.

The staging table 22 comprises a long flat table onto which the customer deposits his purchases. Staging table 22 may be provided with an endless conveyor belt of conventional construction which may be operated by a switch by the checkout clerk for moving the purchases towards the checkout clerk. The construction of such endless conveyor belt forms no part of the present invention, and accordingly the same will not be described herein.

Discharge table 28 includes the cash register or cash register keyboard supporting mechanism 32 (see in particular Figures 2 and 8) at the side at which the checkout clerk is located. Mechanism 32 is secured to discharge table 28 by bolts 33a and 33b which respectively join the bracket 34 and the brace 35 to a leg of table 28. The bracket 34 carries a pair of spaced parallel tubes 36a and 36b within which are respectively received the support rods 37a and 37b. The cash register 38 of the keyboard of a cash register where a separate keyboard and cash depository are desired is supported on the platform 39 carried on cylinder 41 which is supported on the crossbar 43 which is secured intermediate the support rods 37a and 37b. Lock screw 45 which engages the piston rod 47 that is received within cylinder 41 and on which platform 39 is carried may be used to lock platform 39 at any desired height. Lock screws 49a and 49b may be used to lock support rods 37a and 37b in any desired position so that the cash register 38 may be positioned in the most comfortable disposition for the checkout clerk.

The staging table 22 is provided with a plurality of legs 40, such legs 40 being disposed at its ends and if additional bracing is required, at its middle. The legs 40 at the end of staging table 22 which carries loading panel 24 are provided with aligned bearings 42 (see in particular Figure 4) which supports the shaft 44.

Link 46 is pivotable about shaft 44. The free end of link 46 is provided with a counterweight 48, while the end of link 46 closest to loading panel 24 is pivotably secured by pivot 50 to spaced parallel links 52. Links 52 are pivotably secured by means of pivot 54 to the underside of loading panel 24, the pivot 54 being carried by the bracket 56 which is secured to the underside of loading panel 24.

Link 58 is pivotably secured by means of pivot 60 to link 46 intermediate the counterweight 48 and the shaft

44. The other end of link 58 is pivotably secured by means of pivot 62 to pedal bar 64. Pedal bar 64 is pivotably secured at one end to fulcrum 66 and is provided at its other end with a pedal pad 68.

An L-shaped pedal bar 70 is provided adjacent to pedal bar 64, the projecting leg 72 of L-shaped pedal bar 70 being disposed beneath pedal bar 64. L-shaped pedal bar 70 is provided with a pedal pad 74 at its free end. The pedal pads 68 and 74 are spaced side by side adjacent to each other for ease of operation by the checkout clerk.

The L-shaped pedal bar 70 is pivotably supported by fulcrum 76 intermediate its ends. It is manifest that this arrangement of pedal bars and pedal pads is such that when one pedal pad is raised the other is lowered. Thus, the pedal bar 68 may be pivoted to a raised position by depressing pedal pad 74 or pivoted to a lowered position by depressing pedal pad 68.

A hydraulic cylinder 78 is pivotably secured to pedal bar 64. Thus, the piston rod 80 of hydraulic cylinder 78 is pivotably secured by pivot 82 to pedal bar 64. The cylinder head end of hydraulic cylinder 78 is fixedly secured by means of bracket 84 to the underside of staging table 22. Hydraulic cylinder 78 is constructed so that when pedal pad 74 is depressed, resulting in pivotation of loading panel 24 about its hinge 26 there is initially a free drop of loading panel 24, as for example a free drop of fifteen degrees, followed by a controlled drop according to a predetermined requirement. The rate of drop can be controlled by adjusting hydraulic cylinder 78. The construction of hydraulic cylinder 78 forms no part of the present invention, and cylinders are presently commercially available which will permit the aforesaid operation, as for example cylinders which are used to control the opening and closing of doors.

Trip-lever 86 is pivotably carried on shaft 44, shaft 44 serving as the fulcrum for trip-lever 86. The end of trip-lever 86 remote from loading panel 24 is provided with a counterweight-leg 88. Counterweight-leg 88 normally urges trip-lever 86 to the position shown in Figures 1 and 3, in which position the counterweight-leg 88 is resting upon the supporting surface.

The end of trip-lever 86 which extends on the opposite side of shaft 44 from counterweight-leg 88 is formed into a pair of spaced parallel arms 86a and 86b which support the transverse trip-lever arm 90. Thus, the free ends of trip-lever arms 86a and 86b are fixedly joined together by trip-lever arm 90, with the end of trip-lever arm 86b adjacent shaft 44 being pivoted about shaft 44.

The loading panel 24 carries the bag rack 92 which comprises a pair of perpendicular pallets 94 and 96. Each of the pallets 94 and 96 is formed from a plurality of spaced parallel bars. The pallets 94 and 96 are of the same width, but the pallet 94 is considerably longer than the pallet 96. The bars forming the pallets 94 and 96 are held together within the frame 98. The frame 98 includes the trunnion 100 which is pivotably carried by bearings 102 which are aligned at the sides of loading panel 24.

The loading panel 24 includes an oversize hole 104 in its center through which the hook 106 projects. The hook 106 is rigidly formed from the trunnion 100 and extends beneath the undersurface of loading panel 24. Referring particularly to Figure 7, it will be seen that when the bag rack 92 is pivoted about trunnion 100 from the position shown in solid line to the position shown in phantom line the hook 106 will traverse from its position shown in solid line contiguous to the undersurface of loading panel 24 to its position shown in phantom line, in which position it is perpendicular to the undersurface of loading panel 24.

The free end of hook 106 is provided with a notch 108, which as shown in Figure 7 is of such form as to permit engagement between the hook 106 and the transverse trip-lever arm.

The operation of the embodiment shown in Figures 1 through 8 is as follows:

In the starting position shown in Figure 1 the loading panel 24 is disposed horizontally and comprises a continuation of the staging table 22. In this position the bag rack is disposed with the pallet 94 resting on the uppermost surface of the loading panel 24. In order to maintain the loading panel 24 in its horizontal disposition the links 46 and 52 are substantially straight. It will be noted that in this position the piston rod 80 extends outside of hydraulic cylinder 78 its maximum distance. Moreover, in this position pedal pad 68 is depressed and pedal pad 74 is in elevated disposition.

In the starting position the checkout clerk deposits the receptacle bag horizontally with the bottom of the bag juxtaposed to the perpendicularly directed pallet 96. The checkout clerk loads articles into the bottom of the bag simultaneously checking such items on the cash register 38. Since cash register 38 is disposed in the position that affords most convenient access to the particular check-out clerk, the grasping and checking of each item followed by its loading is rendered efficiently and quickly, a single clerk being able to select desired items, register them upon the cash register 38, and pack them into the horizontally disposed bag at about the same rate of speed as is required for the simple registering of the items upon the cash register 38. In many cases, it is possible for the clerk to merely push or shove the items into the bag while the same is disposed upon the bag rack 92 in horizontal disposition.

When the bottom portion of the bag carried on the bag rack 92 has been filled, the clerk depresses pedal pad 74 which causes the linkage 46 and 52 to pivot about pivot 50 with the weight of the bag and its articles depressing the loading panel 24. As heretofore noted the rate of depression of the loading panel 24 from the position shown in Figure 1 to the position shown in Figure 2 may be regulated by adjustment of the hydraulic cylinder 78. The clerk may continue loading the bag and registering the loading items on the cash register 38 while the loading panel 24 is pivoting from the horizontal starting position shown in Figure 1 to the loading position shown in Figure 2.

In the loading position shown in Figure 2 the partially filled bag is disposed at an angle to the horizontal equivalent to the angle to the horizontal assumed by loading panel 24. The pallet 94 remains juxtaposed to the upper surface of loading panel 24. In the loading position shown in Figure 2 the piston rod 80 is substantially entirely withdrawn into the hydraulic cylinder 78, and the pedal pad 68 is in its elevated position and the pedal pad 74 is in its depressed position.

In addition, the trip-lever 86 which is normally urged by the counterweight-leg 88 to the position which it occupies in Figure 1 is engaged with the undersurface of loading panel 24 and pivoted about shaft 44, so that counterweight-leg 88 is spaced from the supporting surface, the counterweight-leg 88 serving as a stop in the position which it assumes in Figure 1. Thus, the transverse trip-lever arm is engaged by the undersurface of loading panel 24 to effect the pivotation of trip-lever 86, the weight of loading panel 24, bag rack 92, the bag, and the bag's contents, etc., and the downward urging of pedal pad 74 more than offsetting the weight of counterweight-leg 88.

In the loading position shown in Figure 2 convenient access is had to the upper portion of the bag and the checkout clerk may conveniently load fragile and/or small items into the upper portion of the bag.

When the loading operation has been completed by the checkout clerk, the clerk depresses pedal pad 68 which pivots links 46 and 52 about pivot 50 to the position that was assumed by these links in Figure 1. This effects rapid raising of the loading panel 24, the hydraulic cylinder 78 being so-constructed as not to resist the

withdrawal of its piston rod 80 from its received position shown in Figure 2 to its extended disposition shown in Figure 3. The straightening of the linkage 46 and 52 to assume the form shown in Figure 3 maintains the loading panel 24 in horizontal disposition. The counterweight-leg 88 urges the trip-lever 86 counterclockwise about shaft 44. This effects engagement between the transverse trip-lever arm 90 and the notch 108 of the hook 106 (see phantom drawing of such engagement shown in Figure 7). The thrust of counterweight-leg 88 against the supporting pivots 42 is such as to be greater, in terms of effectiveness of action in respect to trip-lever 86, than the effective weight of the loaded bag and bag rack 92. Thus, the pivoting transverse trip-lever arm 90 remains engaged with the notch 108 for a significant portion of the rise of loading panel 24. This engagement effects pivotation of the trunnion 100 in the bearings 102 since the hook 106 is moved by the trip-lever arm to a position in which it is perpendicular to the undersurface of loading panel 24 and retained in such position until the rise of loading panel 24 results in the release of the hook 106 from the transverse trip-lever arm 90.

Thus, when the loading panel 24 assumes the position in which it is horizontally disposed and flush with staging table 22 and discharge table 28, the bag rack 92 has been pivoted to a position in which the pallet 96 is resting on the uppermost surface of loading panel 24 and the pallet 94 is perpendicular to the uppermost surface of loading panel 24. In this position the loaded bag is perpendicularly disposed and is most accessible for removal by the customer.

Once the loaded bag has been removed from the bag rack 92 the bag rack 92 may be pivoted by simply pushing the pallet 94 downwardly and a new bag may be deposited upon the bag rack 92.

The staging table has been illustrated as comprising a straight table. However, it is to be understood that the staging table may be curved or angular. Moreover, the path assumed by the movable cash register may be tailored to suit any particular mode of station operation.

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.

I claim:

1. A checkout counter including an elongated table having a substantially horizontal top, a leaf pivotably hinged to one end of said table, a bag rack pivotably carried on the uppermost surface of said leaf, said bag rack including a pair of pallets fixedly secured to each other in angular disposition, means engaged with said leaf responsive to the checkout clerk's control for pivoting said leaf and bag rack, and means for pivoting said bag rack between a position in which the top surfaces of both of its pallets are disposed at an acute angle to the plane of the table top and a position in which one of its pallets is generally upright.

2. A checkout counter in accordance with claim 1 in which the pair of pallets of the bag rack are fixedly joined together in perpendicular end to end disposition, and in which the means engaged with the leaf and the bag rack is engaged with the means for pivoting said bag rack

during the pivotation of the leaf about the end of said table whereby said bag rack is pivoted when said leaf is pivoted.

3. A checkout counter in accordance with claim 1 having means for supporting cash registering means adjacent to but spaced from the one end of said table and juxtaposed to said bag rack, cash registering means carried on said support means and means for adjustably moving said cash registering support means in respect to said table and said bag sack.

4. A checkout counter including an elongated table, a leaf pivotably hinged to one end of said table, means controlled by the checkout clerk secured to said leaf for pivoting said leaf between a position in which the uppermost surface of said leaf is flush with the uppermost surface of said table and a position in which the uppermost surface of said leaf is inclined at an acute angle in respect to the uppermost surface of said table, a bag rack pivotably mounted on the uppermost surface of said leaf, said bag rack including a pair of pallets joined together in perpendicular end to end disposition, lever means projecting from said bag rack beneath said leaf, and bag rack pivoting means operatively engaged with said lever means for pivoting said bag rack between a position in which one of its pallets is resting on the uppermost surface of said leaf and a position in which the other of its pallets is resting on the uppermost surface of said leaf, said pivotation of the bag rack being effected when said leaf and bag rack are pivoted from the position in which the uppermost surface of said leaf is angularly inclined in respect to the uppermost surface of said table to the position in which the uppermost surface of said leaf is flush with the uppermost surface of said table.

5. A checkout counter in accordance with claim 4 having means for supporting cash registering means adjacent to but spaced from the one end of said table and juxtaposed to said bag rack, cash registering means carried on said support means and means for adjustably moving said cash registering support means in respect to said table and said bag rack.

6. A checkout counter in accordance with claim 4 in which the bag rack pivoting means is normally urged in a direction opposite to the direction of pivotation of said leaf, said bag rack pivoting means pivoting said bag rack during its operative engagement therewith in a direction opposite to the direction of pivotation of said leaf.

7. A checkout counter in accordance with claim 4 in which the means secured to the leaf for pivoting the leaf includes means for controlling the rate of pivotation of the leaf when the leaf is pivoted from its position in which its uppermost surface is flush with the uppermost surface of the table to its position in which its uppermost surface is angularly inclined in respect to the uppermost surface of the table.

References Cited in the file of this patent

UNITED STATES PATENTS

1,689,156	Ruffner	Oct. 23, 1928
1,948,522	Jacobs	Feb. 27, 1934
2,038,758	Paxton	Apr. 28, 1936
2,237,080	Muse	Apr. 1, 1941
2,641,400	Simmons	June 9, 1953
2,883,004	Bellino	Apr. 21, 1959