March 11, 1941. J. G. ALLEY 2,234,424

STORE AND STORE COUNTER

Filed Dec. 14, 1938 2 Sheets-Sheet 1

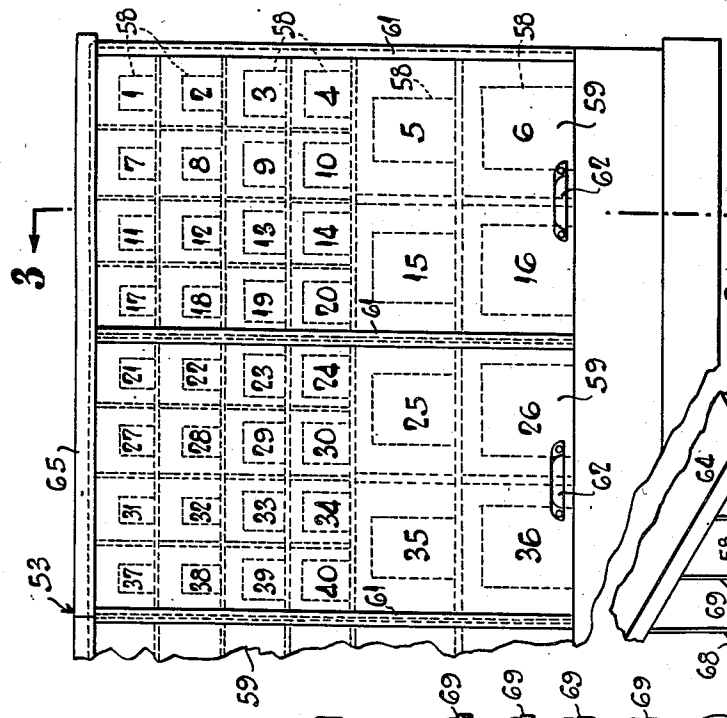


Fig. 2

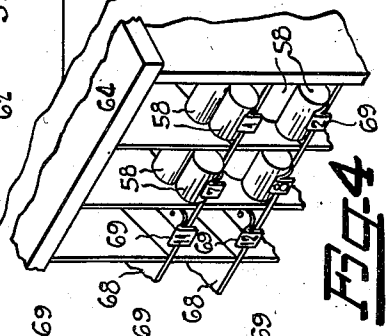


Fig. 4

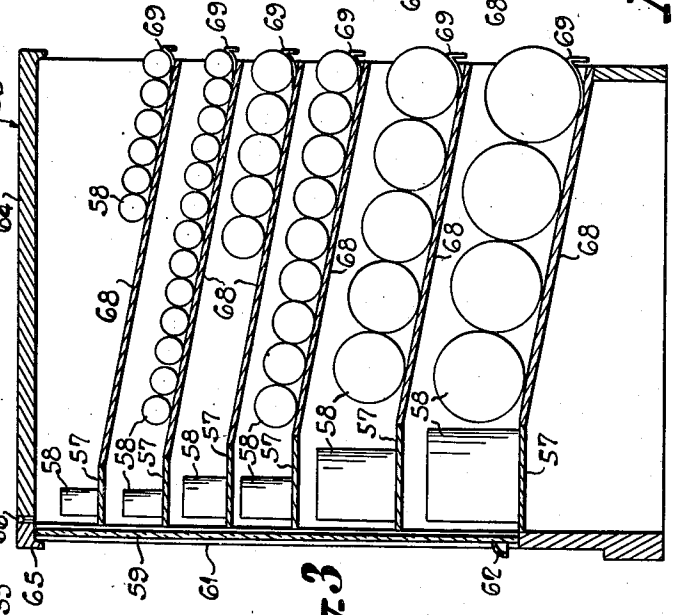


Fig. 3

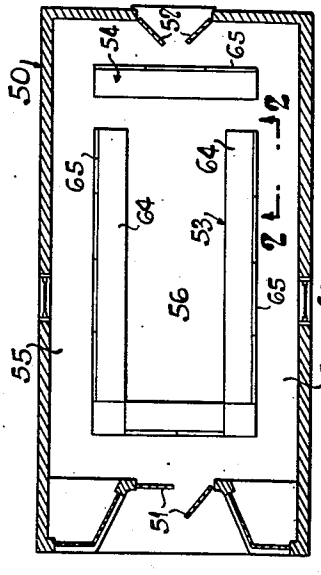


Fig. 1

Inventor:
JAMES G. ALLEY

By

Attorney

March 11, 1941. J. G. ALLEY 2,234,424

STORE AND STORE COUNTER

Filed Dec. 14, 1938 2 Sheets-Sheet 2

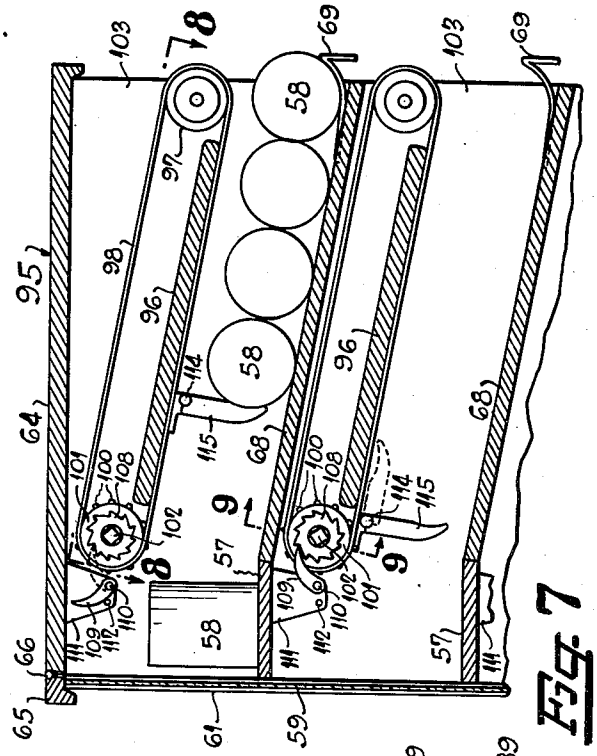


Fig. 7

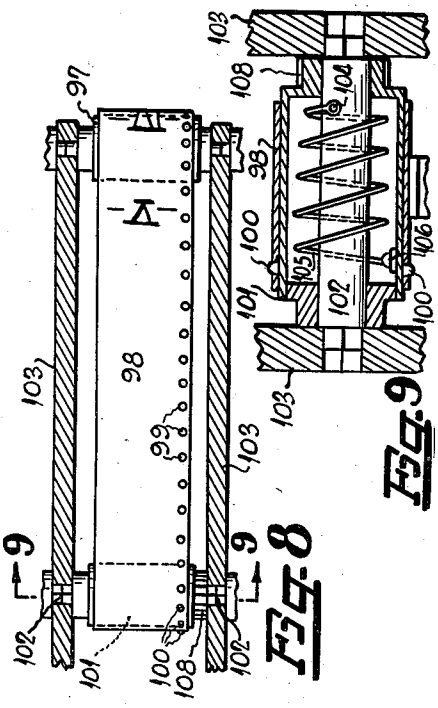


Fig. 8



Fig. 9

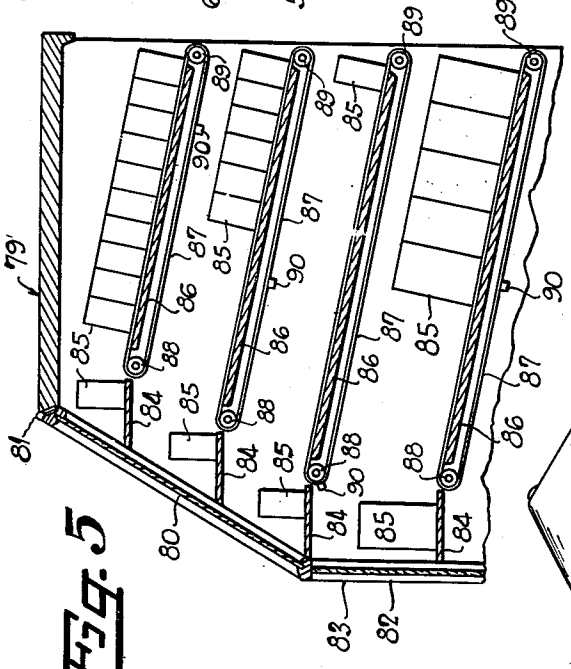


Fig. 5

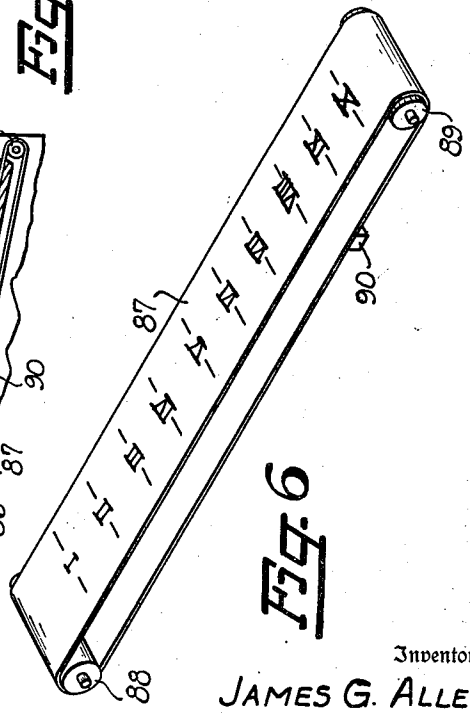


Fig. 6

Inventor:
JAMES G. ALLEY
By James S. Eaton
Attorney

Patented Mar. 11, 1941

2,234,424

# UNITED STATES PATENT OFFICE

2,234,424

## STORE AND STORE COUNTER

James G. Alley, Greensboro, N. C.

Application December 14, 1938, Serial No. 245,691

4 Claims. (Cl. 312—45)

This invention relates to a display and a storage counter which will allow the customers to observe the goods but will not allow them to handle the same. More specifically, it relates to a display counter having a plurality of inclined chutes for holding merchandise, the upper end of each inclined chute merging into a horizontal portion upon which a display package can be placed. The display end of each chute is visible to the customer whereas the delivery end is accessible to the clerk, and from this end the goods are withdrawn. Each time a package is withdrawn from the delivery end, the adjacent package slides or rolls to the position occupied by the package removed. Of course, it is necessary to provide a suitable stop at the delivery end so that the packages will not roll or slide from the chute.

It is a further object of this invention to provide a counter of the class described having means for indicating the number of packages in each chute. This is particularly useful in grocery stores when taking inventory. By providing this indicating means, it is possible to determine at a glance just how many packages of the various materials are disposed in each chute.

It is a still further object of this invention to provide a counter having a plurality of chutes for storing merchandise, the display end of each of said chutes having a platform upon which a display article rests and the storage end having a conveyor therein upon which merchandise is placed. This conveyor likewise has means for indicating the number of articles left in the chute. By providing a conveyor in the delivery end of the chute it is not necessary to incline the same. Instead the clerk only rotates the conveyor belt a slight amount which will advance packages in the chute to a point where one of them may be removed. In other words, by providing conveyor belts in the chutes, the clerk is not dependent upon gravity for advancing the packages to delivery position, but instead he may operate the conveyor to positively advance the packages.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

Figure 1 is a sectional plan view showing a store layout with my improved type of counters installed therein;

Figure 2 is an enlarged front elevation of a portion of a counter and taken along the line 2—2 in Figure 1;

Figure 3 is an enlarged transverse vertical sectional view taken along the line 3—3 in Figure 2;

Figure 4 is an isometric view looking at the opposite side of the upper right-hand corner of the counter shown in Figure 2;

Figure 5 is a vertical sectional view through a portion of a counter showing a slightly modified form of the invention in which a conveyor belt is employed in the delivery end of the chutes;

Figure 6 is an isometric view of the conveyor belt used in the form of the invention shown in Figure 5, also showing the means for ascertaining the number of packages which are disposed in each tube;

Figure 7 is a vertical sectional view showing still another modified form of the invention;

Figure 8 is a sectional plan view taken along the line 8—8 in Figure 7;

Figure 9 is a sectional view taken along the line 9—9 in Figures 7 and 8.

Referring more particularly to the drawings, the numeral 50 indicates a store which has front doors 51 and rear doors 52. Disposed within this store are counters 53 and 54, leaving a suitable aisle 55 therearound in which the customers are adapted to stand. The clerk stands in the space 56 with the counters 53 and 54 around him. By observing Figures 2, 3 and 4, it is seen that the counter 53 has a plurality of chutes therein. The chutes shown are numbered 1 to 40 inclusive, and are disposed at each end of the chute (Figure 4). The bottom portion of the upper end of each chute has a horizontal display portion 57 near the front side of the counter. By front side of the counter, it is meant the side on which the purchaser stands and the rear side is that portion on which the clerk stands.

Upon the horizontal portion 57 a suitable can, box, or other product of merchandise 58 is placed and this can or box may be viewed by the purchaser through a glass 59. The glass 59 is slidably mounted between guides 61, said glass having a handle 62 near its lower side for removing the glass therefrom. It will be noted that the counter 53 has a stationary top portion 64 and a pivoted top portion 65, said pivoted portion being hinged as at 66. When it is desired to remove the glass 59 for replenishing the chute, it is only necessary to rotate the top portion 65 in a clockwise manner in Figure 3, after which the glass 59 may be removed from between the guides.

Each of the horizontal platforms 57 has the upper end of an inclined portion 68 abutting thereagainst, said inclined portion slanting downwardly towards the rear of the counter. The rear end of each of the chutes has a leaf

spring member 69 secured thereto which acts as a stop for the rearmost article of merchandise. These members 69 are flexible and therefore will give way when sufficient pressure is exerted against them during the removal of a package 58. When the lowermost package has been removed, the adjacent packages will advance until the lowermost package assumes the position of the package previously removed. It will also be noted that this member 69 has the number placed on the front end thereof. When a customer desires to purchase groceries, it is only necessary for him to pass along the aisle 55 and while doing so he can make note of the number of the chutes corresponding to the articles that he desires to purchase. When a list of the chute numbers and the number of each article desired by the customer, are handed or communicated to the clerk on the inside of the counter, the goods can be quickly withdrawn from the back side of the chutes, because the corresponding numbers are placed at these ends.

Figure 5 shows a slightly modified form of the invention in which a grocery counter 79 is provided, having an inclined transparent display window 80 near the front side thereof, said window being hinged as at 81 near the top of the counter. The lower end of the window 80 merges into a vertically disposed transparent display window 82, said window 82 being removably mounted in guides 83, very much in the same manner as the windows 59 are mounted in guides 61 of the preceding form. Located near the transparent windows 80 and 82 are horizontal platforms 84 upon which the display packages 85 are placed. These display platforms 84 are substantially at the same elevation as the upper end of an adjacent platform 86, which platform is adapted to support the upper layer of a belt 87. The belt 87 is mounted upon rollers 88 and 89, which are disposed at each end of the member 86.

Although I have shown the conveyor belt 87 as well as the platform 86, inclined at a slight angle the inclined feature is not necessary in this form of the invention. The display package 85 of course remains in stationary position near the display windows, but the packages to be dispensed by the clerk from the rear of the counter are disposed upon the upper layer of the belt 87. When the package near the rear end of the counter is removed, the clerk then presses his hand on the top of the belt and pulls it towards the rear side of the counter a slight amount to reposition the packages so that another one may be removed.

By referring to Figure 6 it will be noted that Roman numerals I, II, III, IV, V, VI, VII, VIII, IX and X are stamped on the top side of the belt 87. Upon each of these numerals a package is adapted to be placed. With the belt in the position shown in Figure 6, the chute is filled with goods. Ten packages will be disposed upon the belt and one upon the display platform 84. Each time a package is removed a Roman numeral is displaced and this numeral will indicate the exact number of packages remaining in the chute including the package on the horizontal display platform 84. This, of course, is a convenient indicating means for telling exactly the number of packages within each chute and has been found to be very useful when taking inventory.

The lower side of the belt 87 has a projection 90 secured thereon. This projection is located in such a position that when the last package on the belt is disposed in the delivery position, that the projection will be abutting the lower side of the horizontal platform 84. When it is desired to refill the chute and place additional packages upon the numbered localities of the belt, the belt is reversed in the chute until the numeral X on the belt is disposed near the replenishing end of the chute. Then the belt is rotated in a clockwise manner (Figures 5 and 6), during which time a package is placed upon the numerals as they successively appear; consequently when the numeral I appears at the replenishing end the numeral X and its corresponding package will be disposed at the dispensing end. In this form of the invention, as in the preceding form, the merchandise is replenished from the front side of the counter and dispensed from the rear side. This will insure that the oldest stock will always be at the dispensing end, thereby preventing the goods from becoming stale.

Figures 7, 8 and 9 show still another modified form of the invention which is similar in many respects to the form shown in Figures 1 to 4 inclusive. Like reference characters therefore will apply to like parts with new numerals being applied to the parts which are different. This counter 95 comprises a plurality of inclined chutes which have a platform at the upper side thereof for displaying packages with an indicating means controlled by the packages in the chute for telling the exact number disposed therein. This indicating means is associated with the gravity type of counter. In other words the novel feature of this form of the invention is the means actuated by the movement of the packages for indicating the number of packages disposed within each chute.

Disposed in each chute at a substantial distance above the bottom inclined portion 68 thereof, is an inclined board 96 which is parallel to the bottom portion 68. Rotatably mounted at the delivery end of the chute and in close proximity to the end of the board 96 is a roller 97 upon which is mounted an endless belt 98. This belt has a plurality of spaced perforations 99 thereon which are penetrated by projections or teeth 100 upon the periphery of shell 101. The shell 101 is rotatably mounted around fixed shaft 102, the ends of said shaft being square and adapted to snugly fit in sidewalls 103 of the chute (see Figures 8 and 9). Secured to the shaft 102 as at 104 is a torsion spring 105, the other end of said spring being secured as at 106 to the interior periphery of shell 101. The tendency of this spring is to rotate the shell 101 in a counterclockwise manner in Figure 7 at all times. This shell has a ratchet 108 integral with one end thereof. The ratchet may be engaged by dog 109 when it is desired to hold the belt 98 in position against the force exerted by torsion spring 105. This dog and ratchet assembly is especially useful when the belt is drawn to the position shown in the lower portion of Figure 7 so that the chute may be replenished. The dog 109 is pivoted as at 110 to depending bracket 111. A pin 112 extends from the side of this bracket to support the dog when the belt is not in a locked position.

It will be noted that the lower side of the belt has pivoted thereto as at 114, a downwardly depending finger 115. This finger is adapted to contact the foremost can in the chute. Under the force of the torsion spring 105, the finger 115 will be caused to follow up the movement of the cans toward the rear of the counter as cans

are removed therefrom by the clerk. When it is desired to fill the chute, the finger 115 pulled to the front portion of the chute and there it is rotated to dotted line position as shown in the lower portion of Figure 7 after which the dog 109 is placed into engaged position with the ratchet 108.

On the top of the belt 98 suitable numerals are placed at the proper position to correspond to the position of the merchandise 58 in the chute. In Figure 8, the Roman numerals IV is visible at the rear end of the chute which indicates that there are four cans disposed in the inclined portion of the chute, as the finger 115 moves towards the rear of the counter in Figure 7, the other numbers corresponding to the number of the cans in the chute will appear at the rear end of the chute thereby affording means whereby a person may easily take inventory of his stock.

Although the belt 98, finger 115, rollers 97 and shell 101, have been described as an indicating means, for the purpose of showing the clerk the number of packages disposed in a chute, it is not limited to this use. If it is desired to use packages which are not round and which will not easily slide from the front to the rear of the chute, the above named parts may be used as a means for impelling the packages rearwardly. It will be only necessary to strengthen the spring 105 where such a use is desired for these parts. It is evident that if the spring 105 is strengthened sufficiently to move all of the packages in the chute rearwardly against the stop 69 that it will not be necessary to incline the portion 68 of the chute, since gravity plays no part in moving the packages rearwardly.

In the drawings and specification, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only and not for the purposes of limitation, the scope of the invention being set forth in the appended claims.

I claim:

1. A store counter having a flat top and a transparent front for displaying and storing packages and having a plurality of chutes extending from the front to the rear side thereof, the bottom of each of said chutes having a substantially horizontal portion adjacent the front side for displaying a package, the remaining portion of said bottom being smooth and inclined downwardly and rearwardly from said horizontal portion whereby the packages stored therein will move rearwardly by gravity, the rear side of the counter being open whereby packages may be removed therefrom; and means disposed at the rear end of each chute for arresting the packages as they move rearwardly.

2. A store counter having transverse vertically disposed partitions and transverse horizontally disposed partitions dividing the interior of the counter into a plurality of compartments extending from the front to the rear side thereof, the bottom of each compartment having a level portion on which a package of merchandise is adapted to be displayed, the remaining portion of each bottom portion of each compartment sloping downwardly and rearwardly from said level portion, and means at the lowermost end of each compartment for arresting packages of merchandise which may have moved downwardly and rearwardly in said compartments, the level portion having means adjacent thereto preventing access to a package from the front ends of the compartment, and the rear end of each compartment being open for removal of packages.

3. In a store counter having a front transparent wall disposed next to the customer of the store and having an open rear side, and having a plurality of rearwardly sloping chutes, the end of the chute which is disposed next to the customer and the transparent front having a substantially level bottom whereby a package of merchandise can be stored for display immediately against the inside of the transparent front, and whereby the other articles of merchandise will roll or slide down the chute as the clerk removes the lowermost one from the rear end of the chute, and means for preventing the packages from rolling or sliding out of the rear end of the chutes.

4. A display and storage cabinet having a flat top serving as a store counter and having a plurality of chutes inclined from the front to the rear for storing packages of merchandise, each chute near the front of the cabinet having a level bottom for supporting a package, means permitting the package to be seen by an observer standing in front of the cabinet, but preventing removal of the package from the front side of the cabinet, the rear side of the cabinet being open whereby the clerk may remove a package from the rear end of the chute, the bottom of each chute from the rear edge of the level portion to the rear side of the cabinet being smooth and inclined rearwardly whereby packages will move by gravity towards the rear ends of the chutes, and means preventing the packages from moving by gravity out of the rear ends of the chutes.

JAMES G. ALLEY.