

[72] Inventor **Morton Blake**
 140-17 84 Drive, Jamaica, New York
 11465
 [21] Appl. No. **747,402**
 [22] Filed **June 10, 1968**
 [45] Patented **Oct. 6, 1970**

Primary Examiner—Harvey C. Hornsby
Attorney—Bertram Frank

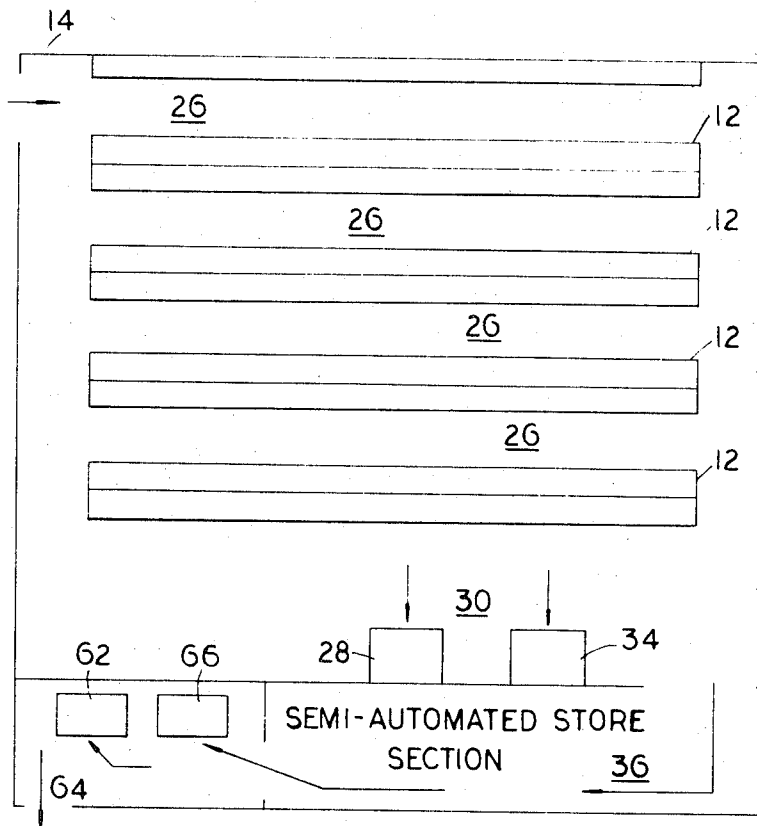
[54] **SEMI-AUTOMATED STORE**
 8 Claims, 11 Drawing Figs.

[52] U.S. Cl. **186/1**
 [51] Int. Cl. **E04h 3/04**
 [50] Field of Search 186/1, 1.2;
 214/(consulted); 221/(consulted)

[56] **References Cited**

UNITED STATES PATENTS			
2,276,294	3/1942	Farmer	186/1
2,353,002	7/1944	Armbruster	186/1
3,247,929	4/1966	Langley	186/1(2)
3,326,325	6/1967	Bradley	186/1
FOREIGN PATENTS			
979,582	1/1965	Great Britain	186/1

ABSTRACT: The present invention relates to a store having an automated section wherein a packaging area is remote from the shopping area. A customer shops for merchandise by choosing punch cards rather than products, the customer thereafter having the cards fed into a computer which calculates the price of the merchandise and simultaneously sends signals to an information storage device and thereafter to the packaging area. The signals activate indicators means adjacent selected bins in which the actual food stuffs are stored so that the purchased goods may be collected in accordance with the signals from the computer. The foods are placed on conveyors in the packaging area and collected and wrapped at a central point and a signal from the packaging area to the information storage device the next order to light or adjacent the selected indicators over the bins. A conveyor means connects the packaging area to the automated section of the store so that the goods may be transferred to the customer in the shopping or automated section.



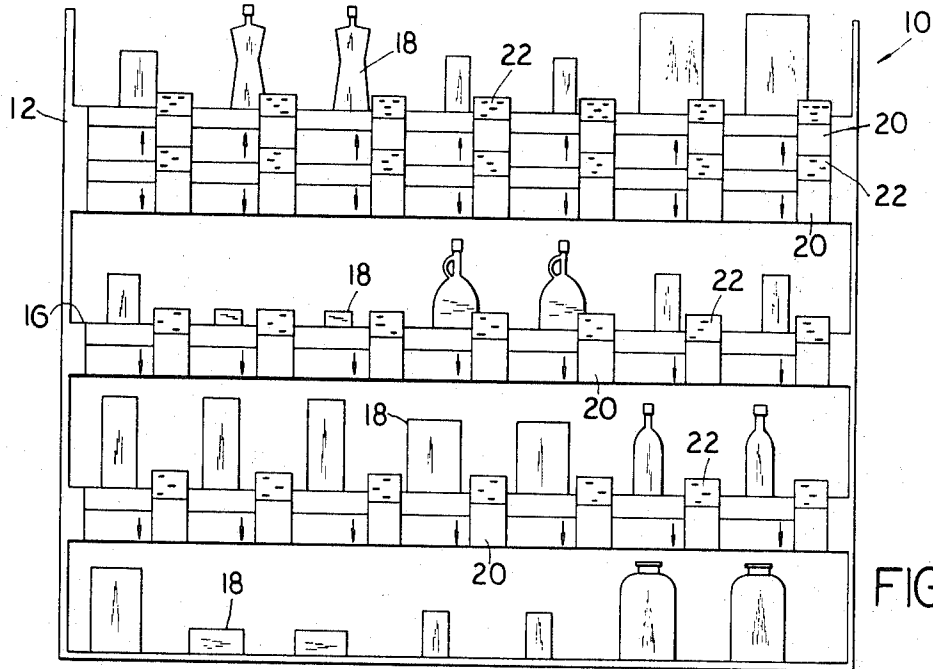


FIG. 1

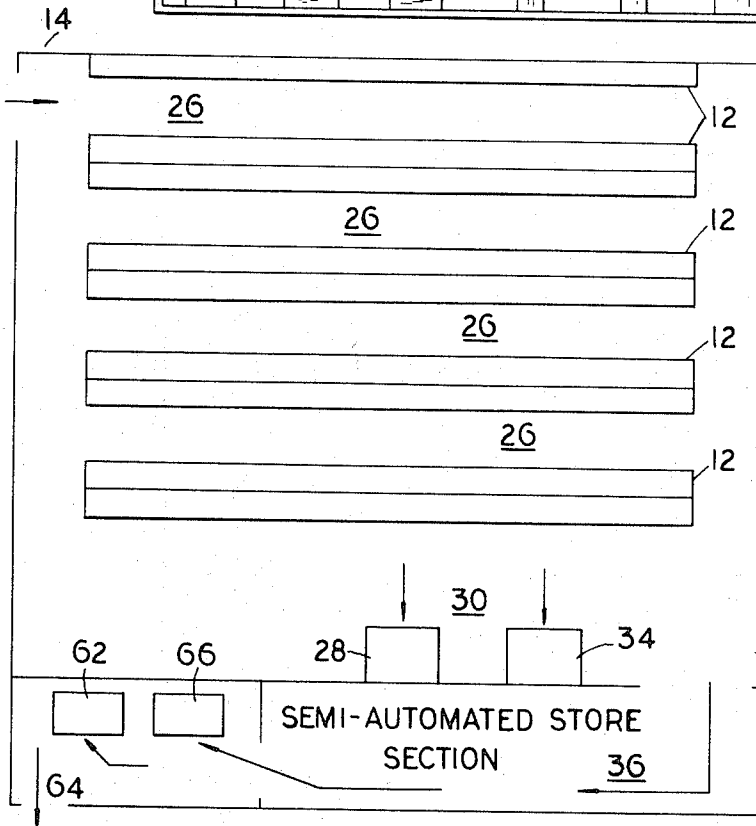


FIG. 2

INVENTOR.
MORTON BLAKE
BY HIS ATTORNEY

Rutman Frank

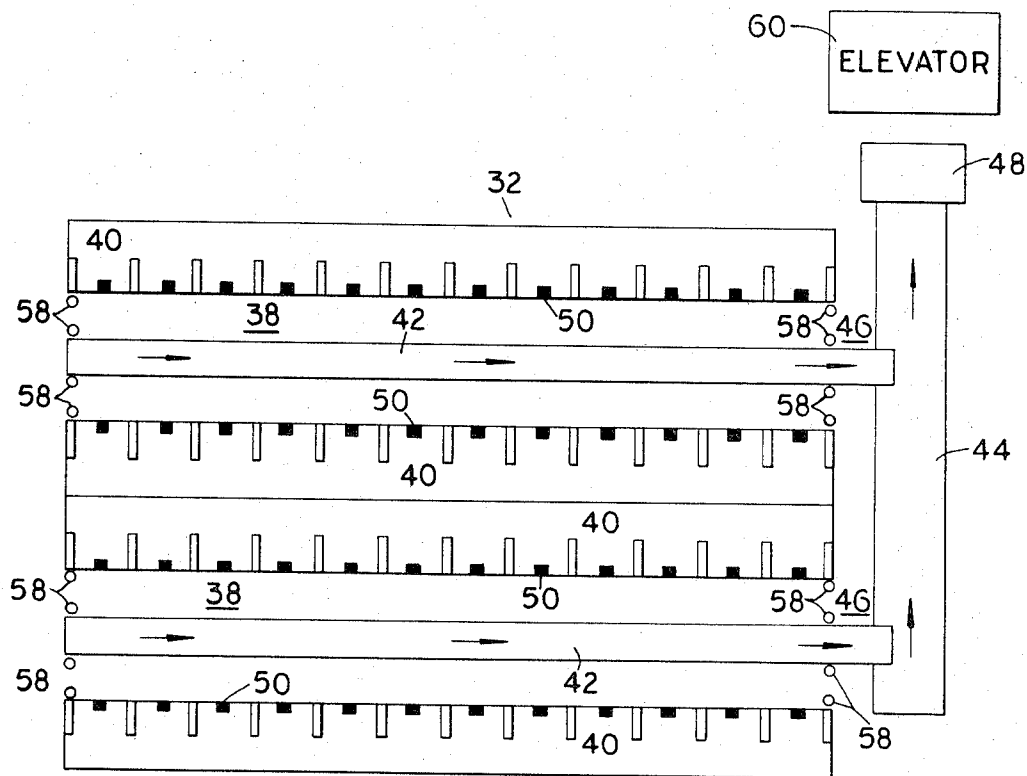


FIG. 3

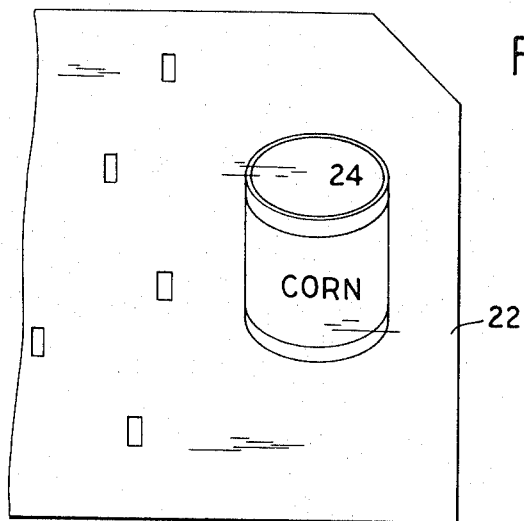


FIG. 4

INVENTOR.
MORTON BLAKE
BY HIS ATTORNEY

Arthur Frank

QUANTITY	DESCRIPTION	PRICE	TAX	TOTAL PRICE
1	XYZ BRAND	.21		.21
3	A BRAND	.69		2.07
2	CD BRAND	1.99	.11	4.09

FIG. 5

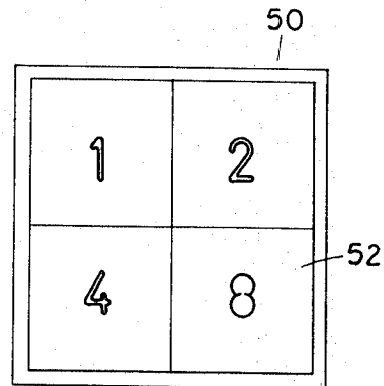
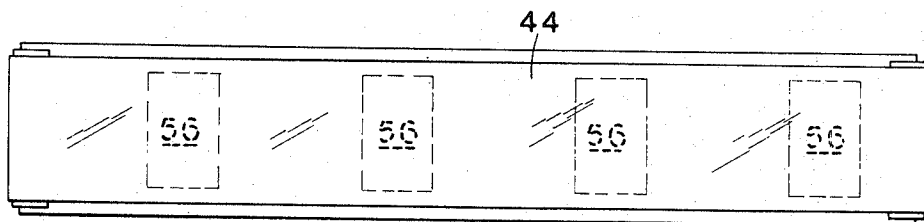


FIG. 6

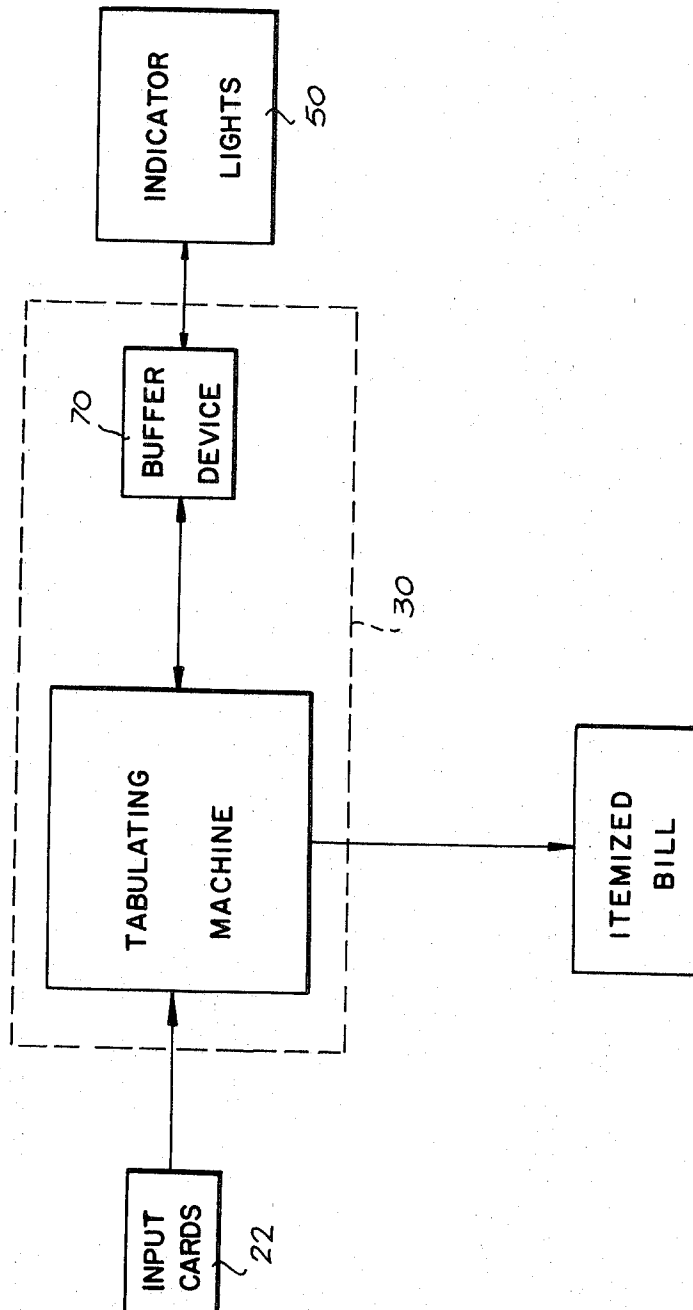
FIG. 7



INVENTOR.
MORTON BLAKE
BY HIS ATTORNEY

Bertam Frank

FIG. 8



INVENTOR.
MORTON BLAKE
BY *Bertram Frank*
ATTORNEY

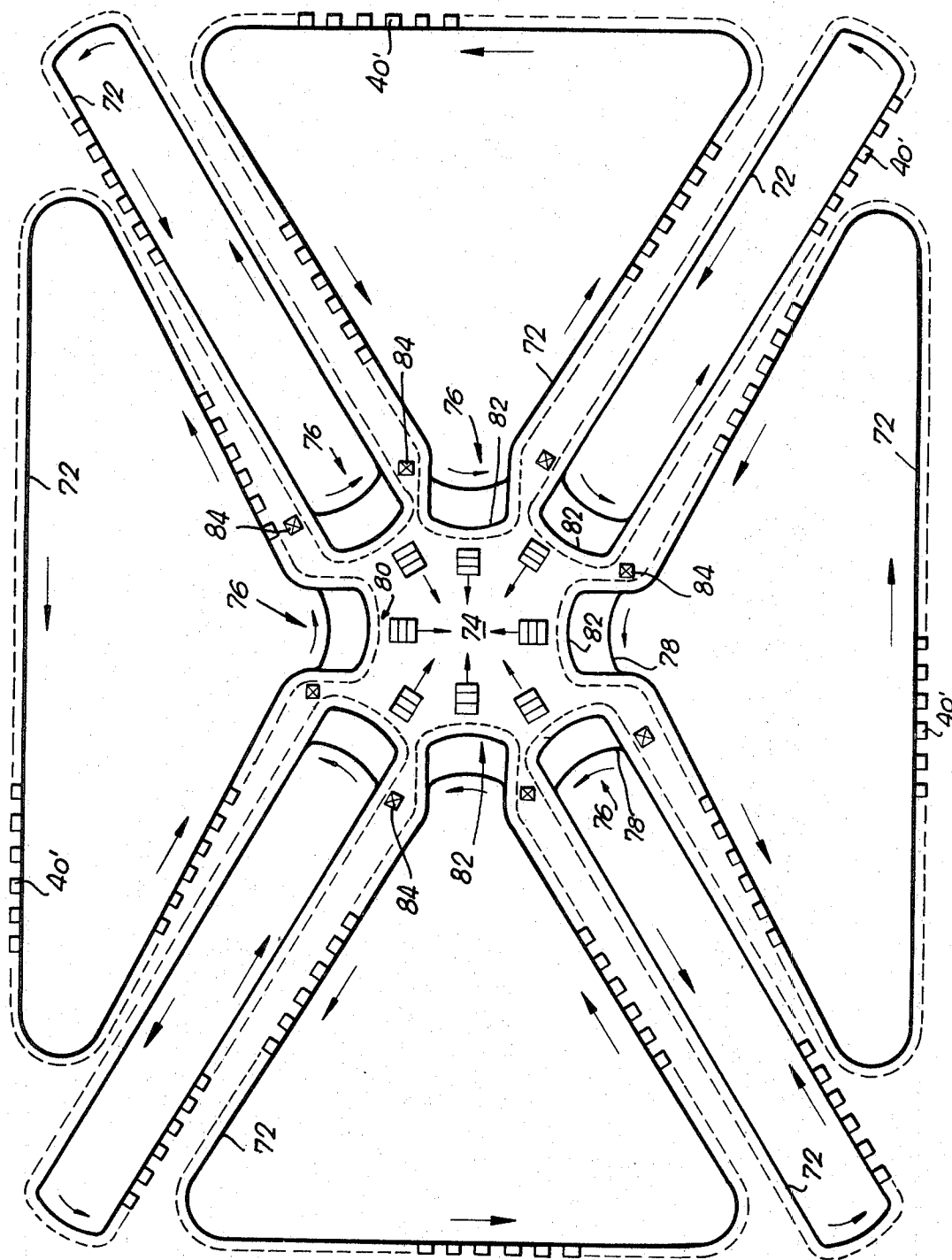
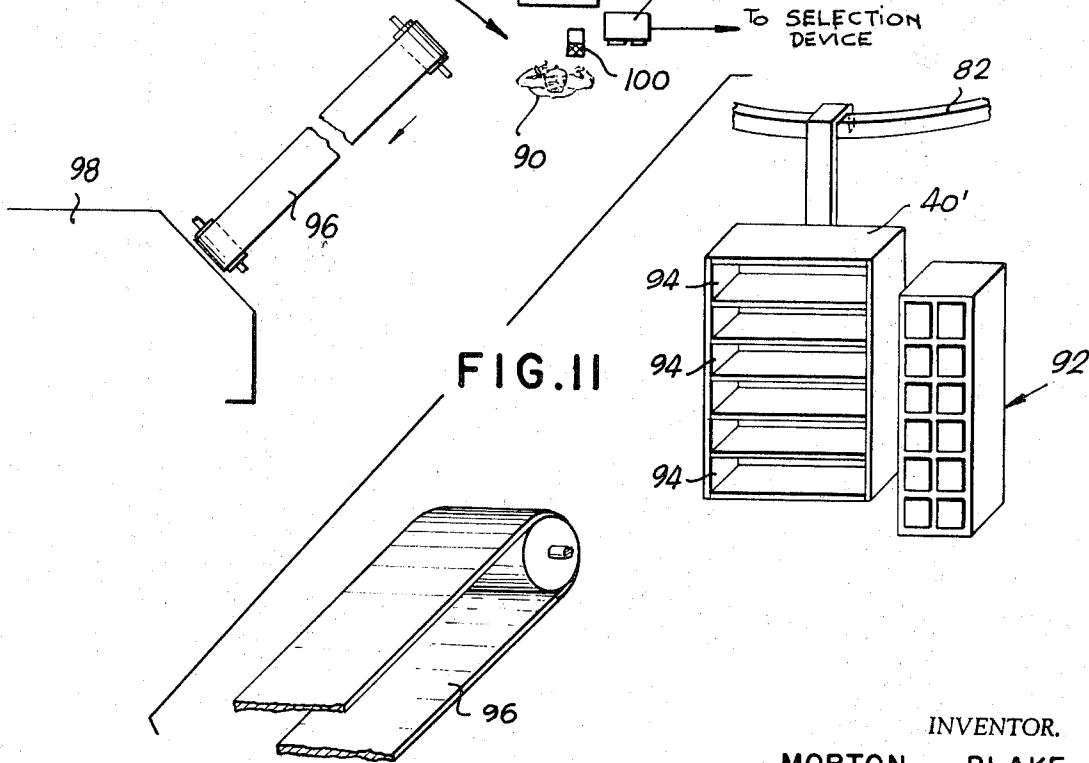
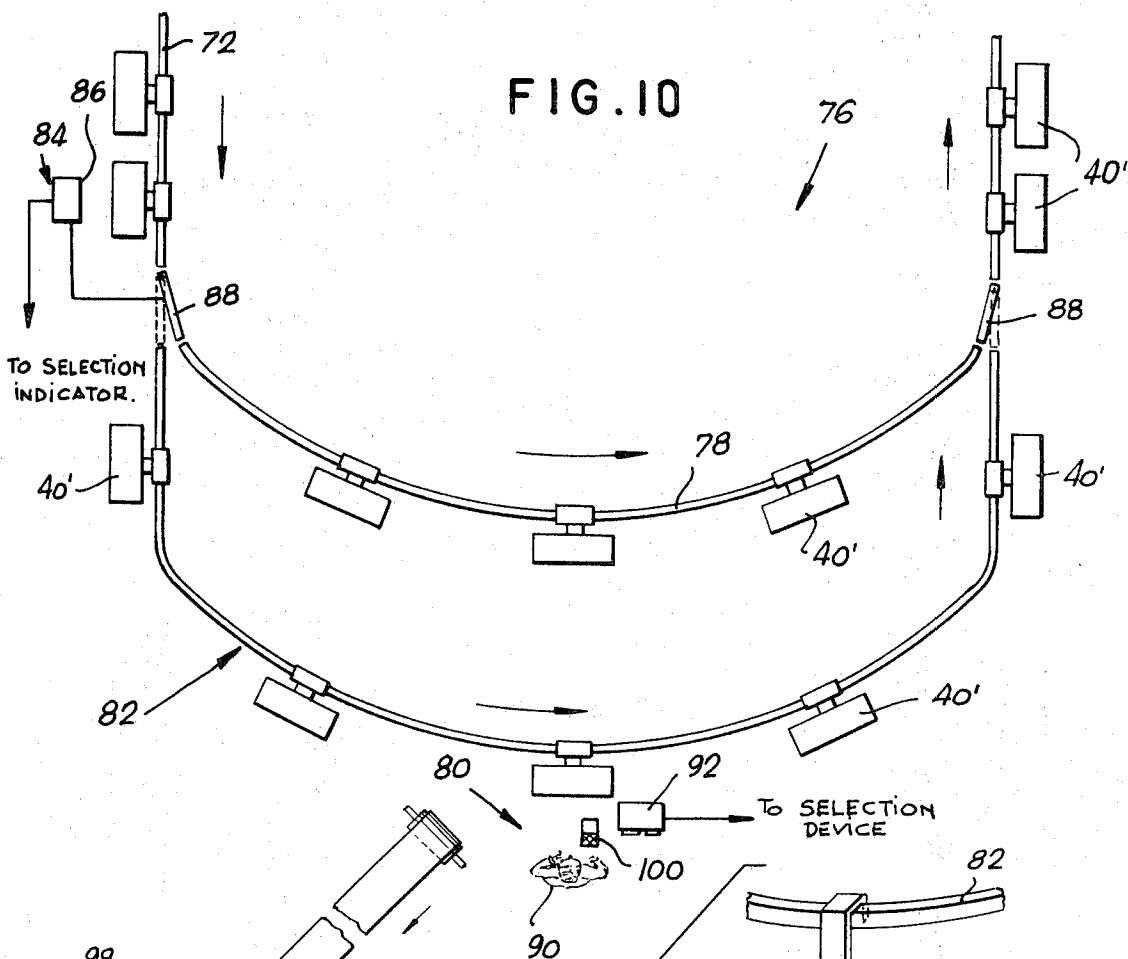


FIG. 9

INVENTOR.
MORTON BLAKE
BY *Bertum Frank*
ATTORNEY



INVENTOR.
MORTON BLAKE
BY *Pertram Frank*
ATTORNEY

SEMI-AUTOMATED STORE

This invention relates to an automated food store and more particularly to an automatic means of choosing products for purchase and the packaging of the same, and is a continuation-in-part of my application filed Nov. 22, 1966 bearing Ser. No. 596,143, now abandoned.

The shopper, when purchasing food stuffs, and the like, attempts to shop and carry the goods purchased encounters many problems heretofore not relieved by our modern technology. For example, the shopper is plagued by the necessity of either carrying the goods purchased through the store or push carts containing the heavy food stuffs desired to be purchased. The woman shopper invariably finds the chore of her normal food shopping to be an exhausting experience both from the standpoint of carrying the purchased goods as well as the ordeal of facing crowded stores and waiting on long lines to make a final payment for the purchase of the goods purchased.

On the other hand, the store owners face yet other problems due to the rather archaic manner of display of the prepackaged goods and other goods as well as the number of people necessary to successfully run a "supermarket" type of operation. The store owner is faced with the labor problem and high overhead in that men must be hired to stack and load the various shelves in the supermarket. Men must be hired to mark the canned goods with the specific prices. Pilferage has been considered a necessary evil which the store owner must contend with and live with. Further food handlers and dispensers must be hired to be sure that the food stuffs which the shopper purchases is properly displayed as well as being made available for the ready access of the shopper. In all, the time consuming jobs of displaying and stacking the foods is further complicated by the necessity of the modern day store to exhibit a neat and clean appearance, free from debris, making the market attractive to a prospective shopper.

The problem of reducing the amount of time that a shopper must spend in the store has also plagued the store owner since he realizes that an unhappy shopper in the respect that they become annoyed and bored by the interminable time spent in shopping, must be appeased by the hiring of additional cashiers and the like to keep the flow of customers as rapid as possible thereby necessitating not only cashiers but wrappers and packers to aid in the continuation and facilitate the packing of the goods so that the customer or purchaser may leave the store with the packaged goods in a considered short time.

Further, the consumer who was unable to attend the shopping centers was precluded from making purchases. Even by telephoning an order to the shopping center or market, required an extremely long wait for obtaining the delivery of that order.

The present invention contemplates the overcoming of the above mentioned objectionable features to the present day supermarket type store, however, fully realizing that certain items which are purchased cannot be automated to the degree of canned goods or prepackaged goods. Therefore, the present invention contemplates the wedding of an automated section as well as a semiautomated section and a packaging area separate and apart from the shopping areas, however, merging at a single point to provide the shopper with a minimized amount of excursion to accomplish the necessary shopping chores.

The objects of the present invention have been achieved by providing a semiautomated supermarket having a minimum of employees and yet providing the shopper with personalized attention in the areas of food which are not prepackaged.

Yet another object of the present invention is to permit a shopper to choose and select goods which do not have to be carried or hauled by the shopper from the point of choosing the article to the point of paying for the same.

A further object of the present invention is to provide a semiautomated supermarket in which the shopper may, if desired, return goods to the shelves without carrying such goods and making unnecessary trips.

A further object of the present invention is to provide a supermarket owner with a store which requires a minimum of supervision and a minimum of employees.

Yet a further object of the present invention is to provide a supermarket in which the owners thereof face a greatly reduced pilferage problem.

Still a further object of the present invention is to provide a method of shopping for a consumer which is speedy and efficient.

Another object of the present invention is to provide a unique storage and distributing area to expedite the packaging of the goods purchased.

Still another object of the present invention is to provide a means of ordering goods from a remote point.

Yet another object of the present invention is to provide a warehousing and distribution system for maintaining an efficient packaging area as well as facilitating inventory requirements.

The objects of the present invention have been achieved by providing a semiautomated supermarket comprising an automated shopping area for prepackaged goods, a shopping area for non-prepackaged goods, a packaging area not available to the shopper, and a cashier's area in which the prepackaged goods will arrive packaged and paid for.

For a better understanding of the present invention reference should be had to the accompanying drawings wherein like numerals of reference indicate similar parts throughout the several views and wherein:

FIG. 1 is a front view of a counter or food display, FIG. 2 is a flow diagram of the automated store area, FIG. 3 is a flow diagram of the packaging area of a store, FIG. 4 is a plan view of a punch card used for selecting the goods in the prepackaged section,

FIG. 5 is a view of the tabulated customer sheet, FIG. 6 is a pictorial representation of the light groupings above each bin in the packaging area,

FIG. 7 is a plan view of a conveyor means, FIG. 8 is a block diagram showing the relationship between the various elements and members,

FIG. 9 is a plan view of an alternative storage and packaging area.

FIG. 10 is a representation of one end of the endless conveyor.

FIG. 11 is a representation of the pickup point.

Although the principles of the present invention may be broadly applicable to a number of areas of customer participation in the choosing of articles for purchase, the present invention is particularly well adapted for a supermarket food shopping area and hence it has been illustrated and will so be described.

The following description of the present invention will be treated in three distinct segments, the first relating to the automated shopping area; the second relating to the packaging area; and the third relating to the cooperation of these various areas and their operation.

AUTOMATED SHOPPING AREA

As shown in FIG. 1 the food display counters 10 may be provided with a shelving arrangement 12 in the automated shopping area 14. The display counters 10 utilize a number of shelves 16 arranged in long counter-like arrangements having the particular canned or prepackaged goods 18 displayed by a single row of cans and having disposed therebeneath a means of dispensing 20 punch cards 22. The punch cards 22 may be in position in the dispensing means 20 at or near the shelf 16 to which the card is associated with the goods. The shopper when desiring to select a particular type of canned food or prepackaged goods 18 has merely to remove one card 22 for each object to be purchased in that category. The punch card 22 may be provided, as shown in FIG. 4, with a picture 24 of the particular product to be purchased and may have prominently displayed thereon the price of the article and size

of the article to be purchased. This is to ensure that the punch card 22 selected from the dispensing means 20 represents the specific product desired to be purchased.

The shopper by merely traversing the various isles 26 wherein these counter-like shelving arrangements 12 are provided, may merely choose a card 22 for each product or a number of cards for a number of one product, desired to be purchased, and by merely carrying the cards 22 from one portion of the isle 26 to the other is able to pick and choose the canned or prepackaged goods 18 desired to be purchased. In the event that the purchaser upon reconsideration does not want a particular article for which he or she has already chosen a particular card 22 he may merely, by placing the card 22 back in the appropriate card dispensing means 20 or even discarding the card 22, figuratively return the goods to the shelf 16 or discard the goods by throwing the card 22 away. A receiver (not shown) may be provided at the end of each isle 26 to collect the discarded punch cards 22.

The proprietor of the supermarket by merely displaying a single row of the prepackaged goods 18 for each different brand or each different product may eliminate the necessity of continually stacking the shelves 16 so that the personnel ordinarily required to stack the shelves 16 may perform other duties. The shelves 16 may be provided with a glass enclosure (not shown) to prevent the pilferage of the single row of goods 18 and may provide a permanent positioning of the type of goods desired to be purchased in various locations of the automated section 14 of the store, such that the shopper may become familiar with and know exactly where certain articles of goods are available, or their cards 22 for their selection.

As shown in FIG. 2 the shopper may traverse the various isles 26 formed by the shelving arrangements 12 as previously described and may choose the prepackaged goods 18 which they are desirous of purchasing. Because of the various arrangements and availability of the cards 22 for indicating the purchase of a product, the consumer may be provided with a clear isle 26 for easy traverse and a continuous flow of consumers may be handled with relative ease because of the uncluttered nature of the isles 26 provided in the automated shopping area 14.

At the end of the well aligned isles 26 a counter 28 may be provided where an operator collects the punch cards 22 selected by the shopper and feeds them to a computer 30 which may produce electrical impulses in accordance with the particular cards 22 inserted therein. These electrical impulses may be diverted from the computer 30 down to the packaging area 32 hereinafter described. The computer 30 may calculate the number of articles, the relative prices and provide the customer with an overall itemized bill which is paid at that time by the shopper who thereafter retains the bill as identification to later pick up the packaged order.

After leaving the automated shopping area 14, the consumer may thereafter proceed to the semiautomated section 36 wherein the non-prepackaged foods or articles of merchandise may be purchased.

PACKAGING AREA

As shown in FIG. 3, by way of the schematic representation, the packaging area 32 may be provided with a plurality of aisles 38, the sides of which are formed with stocked shelves or bins 40 for the various goods 18 displayed in the automated shopping area 14 of the supermarket. Down the center of each aisle 38 there may be provided a conveyor means 42 such that a packaging clerk having information regarding the number of cans or packages purchased by the consumer may remove the packages or cans from the storage bin 40 and place them on the conveyor means 42 so that they may flow toward a main conveyor 44 at the end 46 of the plurality of aisles 38. As shown in the FIG. 3, the main conveyor 44 runs transverse to the direction of flow of the aisle conveyor means 42. In this manner the goods 18 sent down the aisle conveyor means 42 may be dumped upon a transverse moving main conveyor 44

and thereby taken or transmitted to a packaging station 48. A pair of clerks may be provided for each aisle 38, one clerk on each side of the aisle conveyor means 42 in their respective aisle 38 so that the stock of goods 18 on each side of each aisle 38 is maintained by a single stock clerk, who will remove the goods 18 from the bins 40 and place them on the respective aisle conveyor 42.

The stocked prepackaged goods 18, as previously described, are stored in storage bins 40 and above each bin 40 there may be provided an indicator means 50. The indicator means 50 may take the form of a cluster of four lights 52 as shown in FIG. 6. The cluster of lights 52, above each bin 40, for each particular article of food, when lit, will indicate the number of each item in that bin 40 to be removed and placed on the aisle conveyor means 42. The indicator means 50 above each bin 40 will be activated in accordance with the impulses supplied from the computer 30 in the automated shopping area 14. When more than one of each article is desired to be purchased, a card is obtained for each article so that the computer 30 will indicate by adding the number of cards for the various items and distributing that information to the cluster of lights 52 above each storage bin 40 in the packaging area 32.

When a number of cards 22 are inserted into the computer 30 the cards 22 will represent an order of a single individual so that the computer 30, will feed the information down to the indicator means 50 above each storage bin 40 so that the clerks in the packing area 32 will have the lights lit in their particular aisles 38 for a single order. With this arrangement the clerk may merely go down the aisle 38 and placing them on the conveyor means 42. The conveyor means 40 in the various aisles 38 will feed the prepackaged goods 18 to the main conveyor 44 at which point the main conveyor 44 moves the goods 18 to the packaging station 48. At the end of the main conveyor 44, there may be provided three or four packaging clerks, one will package the articles from the particular order, or one clerk may package one order. In this latter case, a door arrangement may be provided to divert the goods 18 to one of the clerks at the packaging station 48. While this information is sent to the indicator means 50, other orders are being processed and the orders are stored in a buffer 70 or information storage device until the processed order is completed.

In order to determine when each order has been removed from the main conveyor 44 so that the information on the computer 30 sent to the information storage device 70 may now be released so that it may feed the information for the next order to the indicator means 50 above the storage bins 40, the main conveyor 44 must be completely cleared of the previously ordered material. In this respect, weight sensing devices 56 may be disposed beneath the main conveyor 44, so that, the main conveyor 44 in the aisles 38 as well as the transverse conveyor 44 will inform the computer 30 or information storage device 70 when it is clear to operate the indicator means 50 for the next order. Other means may be made available for indicating that the conveyors are clear, such as, an arm which will automatically clear the conveyors or indicate that the conveyors are cleared, or an electric eye arrangement 58 at the end 46 of each aisle 38 or a switch (not shown) that the clerk may trip.

As shown in FIG. 8, the punch cards 22 are fed to the computer 30 which delivers an itemized bill to the customer for the goods purchased and simultaneously sends signals to the information storage device 70 for storage of the information until the indicator lights 50 and conveyors 42 are cleared of the previous order that was filled. When the conveyors 42 have been cleared a signal is sent back to the information storage device 70 so that the signals comprising the next order may be sent into the packaging area 32 as previously mentioned. The information storage device 70 may be an integral feature of the computer 30 herein used.

After the customers order has been assembled at the packing station 48 and thereafter packed, the order may be placed on an elevator or conveyor 60 which will bring the en-

tire order wrapped and packaged from the packaging area 32 up to a central clearing point 62 in the semiautomated section 36 which may be contiguous to the exit 64 of the supermarket. In this manner, when the customer who has already paid for the prepackaged goods 18 purchased in the automated section 14 in the supermarket, reaches the pay station 66 for the semiautomated section 36 of the supermarket; at that point when paying for the foods purchased in that section may also pick up the order which has already been sent up from the packaging area 32.

Alternatively, as shown in FIG. 9, the bins 40' may be mounted on a plurality of endless tracks or conveyors 72. The endless conveyors 72 may be positioned so that at a common center point 74 clerks may congregate to remove the required goods from the appropriate bins 40'. As seen in FIG. 9, the endless conveyors are arranged in the form of spokes in a wheel, with the common center point 74 located at the hub thereof. As previously described, each bin 40' would contain a specific type of goods so that the plurality of bins 40' hung on each conveyor 72 would comprise the total stock of the supermarket.

Referring now to FIG. 10 the following description will relate to one of the conveyors 72, however, it should be particularly understood that the description of the one conveyor will carry to all the other conveyor systems indicated. Each conveyor 72 has at its most inwardly disposed end 76 a by-pass rail 78 which is in continual movement so that the bin 40' which contain goods not selected may pass the pickup point 80 disposed at the center point 74. A selection rail 82 will contain the bins which have been selected, because of the products contained therein, by means of an electronic selection device 84 which is activated by means of the buffer or information storage device 70 as a result of the cards 22 being inserted into the computer 30. The selection means 84, being activated by the card 22, will inquire, via the use of a sensing or scanning device 86 as to the identification of the bin 40', having desired goods therein, by determining the composition of reflective spots 87 or other means of indicia on the moving storage bin 40' and compares this identification to a stored table (not shown) that contains the identification number of goods contained in the particular bin 40'. When the identification is made of the proper bin 40', the selection device 84, again receiving information from the information storage device 70, determines the number of pieces of goods to be selected from the selected bin 40'. It further stores the relative location of the bin 40' and activates a switcher 88 disposed at the junction of the by-pass rail 78 and the goods selection rail 82 so that the bin will be routed to the selection rail 82.

Referring again to FIG. 10, it may be seen that the bins 40' switched to the selection rail 82 will pass in front of a clerk's position 90 at which position the clerk will remove the goods indicated. In order to indicate the goods to be removed from the selected bin a system of indicator lights 50 similar to that described in the preferred embodiment may be used. However, the alternative form preferred for the alternative embodiment may be in the form of a cathode ray tube 92 on which the quantity of goods are specifically indicated. Further, the bin may be divided into three or four sections, each section 94 containing a different product and the selection indicator or cathode ray tube 92 may also have different levels, each level corresponding to a section of the bin 40' therefore, if a clerk in viewing his selection indicator 92 sees a number "2" on the first level and a number "1" on the third level, he understands that two articles are to be removed from the first section and one article is to be removed from the third section of the bin 40'.

The clerk, upon removing the goods from the various sections of the bins 40', may place the selected goods on a removal conveyor 96 to be transported to a central packaging section 98 which is remote from the conveyor system 72.

The bins 40' not containing the goods desired for a particular order, will travel along the by-pass rail 78 until it merges on to the main conveyor and may traverse the complete rotation

until it is brought again to the sensing means 84 to be either selected or rejected for the succeeding order.

If the bin 40' is needed, the selection means 84 calculates and stores the relative position of the bin 40' with respect to the pickup point 80 by keeping track of the number of bins selected to be diverted to the selection rail and the point of pickup 80. When the bin 40' reaches the pickup point 80, the number of goods to be selected is displayed on the selection indicator 92 or indicator means (as in the preferred embodiment) the selection clerk picks goods as indicated and puts them on the removal conveyor 96. When that clerk has completed his selection of goods from the bin 40', he may activate a release mechanism 100, which may take the form of a foot pedal, toggle switch or similar device, thereby releasing the bin 40' so that it may travel toward the junction point of the selection rail and by-pass rail back to the main conveyor. It should be recognized that all of the conveyor systems are cleared when one order is completed and this clearing feature is controlled by the selection device 84 which is used in conjunction with each of the conveyor systems in the plurality shown in FIG. 9. The selection device 84 will clear the order selection information for that particular bin 40' and subtract the same from the stored relative location of the bins 40' so that the next bin 40' stopping at the selection point 80 will now be the bin under consideration and the selection indicator 96 will display the necessary information to allow the pickup clerk to select the goods therefrom.

REMOTE ORDERING SYSTEM

The above described procedure for shopping wherein indicator cards 22 are used rather than the selection of the goods per se may be augmented by the system of ordering goods from a remote point via telephone and also the supermarket proprietors use of an off premises computer which is used on a time sharing basis. Utilizing the same principles as above enumerated for the packaging of goods, it may be seen that a customer at home may be provided with a list of goods at its local supermarket. Each item would have a respectively associated code number which may be transmitted telephonically by means of the touch tone dial or other devices used to communicate signals on the presently existing telephones. If a customer is desirous of ordering a plurality of goods the order is transmitted to the off premises computer in which the information is stored as in the buffer section 70 of the computer in the supermarket. The order in its computerized form is transmitted to the packaging area in the same manner that the computer would transfer the order thereto, except in this off premises computer the buffer device is more remote from the packaging area. Once the order has been transmitted to the packaging area, the exact same procedures are followed in the packaging area as previously described in the preferred and alternative embodiment. It will be recognized that one off premises computer may service a plurality of supermarkets in this respect.

OPERATION

In operation of the preferred embodiment a customer when entering the supermarket and following the flow lines indicated in FIG. 2 will enter the automated section 14 of the supermarket first and as the customer goes down the various aisles 26 he picks out the punch cards 22 which are conveniently located adjacent the prepackaged goods 18 which each punch card 22 would represent. The customer accumulates a number of punch cards 22 in relation to the prepackaged foods 18 desired to be purchased and when the cards have accumulated exits the automated section 14 of the supermarket at the point of the computer 30 where the cards 22 are given to the clerk who tabulates the order and calculates the information for making up the necessary billing arrangement. The information tabulated in the computer 30 is thereafter stored in the information storage device 70; until the main conveyor 44 is indicated as clear, and sent down to

the packaging area 32. The indicator means 50, located above each of the various bins 40 in the packaging area 32 are activated in accordance with the information given to them by the computer 30 or buffer 70 and the various cluster of lights 52 above the bins 40 are illuminated indicating the number of articles which are purchased in each particular category. The packaging area clerks move down their respective aisles 38 choosing the prepackaged goods 18 where the lights above the various bins 40 indicate the quantity of each to be purchased. The packaging clerk thereafter puts the indicated goods and the number thereof on the aisle conveyor means 42 and the aisle conveyors move the purchased goods down to the main conveyor 44 where a transfer is made such that the transversely moving main conveyor 44 will then move the goods to the packaging station 48. At the packaging station 48, the clerk will remove the goods from the main conveyor 44 and put them in the appropriate boxes or paper bags which the customer may carry and places the packaged order onto the elevator 60 so that the elevator 60 may transfer the goods from the packaging area to the semiautomated section 36 of the supermarket at the clearing point 62. The computer 30 will then receive a signal from the weight sensing devices 56 and/or the electric eye 58 arrangement so that the stored next order may be sent to the packaging area 32.

The customer in the interim has been able to do the necessary shopping in the semiautomated section 36 of the supermarket and can now present his overall bill or tabulated receipt (see FIG. 5) to allow him to pick up the order, packaged in the packaging area, at the clearing point 62.

As a further alternative, there may be provided the aisle arrangement for the packaging area 32 which may more expeditiously handle the filling of orders received from the computer. For example, a clerk may be stationed at the end of each aisle 46, near the transverse or main conveyor 44 and the storage bins 40 may be provided with such a mechanism as to cause the bins 40 to move. The clerk therefore, instead of moving up and down the aisle 38 would stand in one position and the storage bins 40 which may be on a conveyor type system (not shown) would move past the clerk who would remove the goods from each bin 40 in accordance with the indicator means 50. In this manner the aisle conveyors 42 may be eliminated.

Yet another alternative, the storage bins 40 may be provided, as described in the preferred embodiment as fixed in position, and the clerk may traverse the aisle 38 on a moving belt. With this arrangement the clerk would merely stand on the moving belt and be provided with a means of collecting goods, such as a small dump cart, and as he passed each bin 40 where the indicator means 50 was lit, could merely, by a remote control device, stop the belt and remove goods from the bins 40. At the end of the aisle 38, he may merely dump the collected goods onto the main conveyor 44 as described in the preferred embodiment.

It will be seen that utilizing either of these alternatives may be employed without a serious departure from the essence of the invention, however, these alternatives would constitute a more expensive installation to implement.

It will be recognized by those skilled in the art that the objects of the present invention have been achieved by providing a fully automated section of a supermarket as well as a packaging area wherein a customer may purchase prepackaged goods and have the order packaged in a relatively short time and without the necessity of carrying the goods purchased from position to position. Further, the owner of the supermarket, because of this automated feature, may reduce the number of employees necessary to handle the packaged goods and may further reduce overhead and pilferage in this section of the store. Still other advantages may be seen in that a much more efficient inventory control may be implemented through the use of the computer and a new method of ordering goods via telephone may be used. In this latter respect a customer may order from a published booklet or catalogue and by telephoning the supermarket and giving corresponding

numbers to a key punch operator the order may be put on cards or the like and fed to the computer 30 or a separate computer (not shown) specifically used for telephone orders.

While in accordance with the patent statutes a preferred and alternative embodiments have been disclosed and described in detail, it is particularly understood that the invention is not limited thereto or thereby.

I claim:

1. A supermarket comprising an automated shopping area for the purpose of displaying prepackaged goods, a semiautomated section for the purchase of displaying non-prepackaged goods, a packaging area remote from said automated shopping area, at least one computer positioned in said automated shopping area in part calculating the price of the goods purchased, said at least one computer creating information pulses in accordance with goods to be purchased for transmission to said packaging area, an information storage device disposed within said computer adapted to store a plurality of information pulses representing food purchases of numerous persons and adapted to selectively transmit such information to said packaging area, said automated shopping area having a plurality of prepackaged goods display counters, punch cards associated with each of said multiplicity of said prepackaged goods and readily accessible to customers and removably connected to the display counters, a multiplicity of food bins containing goods to be ordered disposed in said packaging area, indicator means comprising a cluster of numbered lights disposed in said packaging area in communication with said information storage device in said computer to which said information pulses are selectively transmitted, said indicator means being positioned adjacent a selected food bin containing goods ordered wherein lights are actuated in response to said information pulses to indicate the number of goods to be removed therefrom, and a conveyor means communicating between said packaging area and the automated area for delivery of wrapped goods from said packaging area.

2. A supermarket according to claim 1 wherein said packaging area is provided for wrapping the goods purchased, said packaging area comprising a multiplicity of rows of storage bins arranged in aisles, a conveyor means disposed in each of said aisles and running the length thereof, a main conveyor means at the end of the aisles running transverse to each of said conveyor means so that prepackaged goods placed on each of said conveyor means will be transferred to said main conveyor, a packaging station disposed at one end of said main conveyor adapted to receive the prepackaged goods transferred thereonto from said conveyor means, and indicator means in communication with said information storage device and positioned above each of said storage bins for indicating the number of prepackaged goods to be removed from said storage bin that should be placed on said conveyor means for transmittal to said packaging station.

3. A supermarket according to claim 1 wherein each of said indicator means comprises a cluster of four lights which communicate with said information storage device and are activated by information impulses to indicate a number above each selected storage bin.

4. A supermarket according to claim 3 wherein a cluster of lights is disposed above each of said storage bins.

5. A supermarket according to claim 1 wherein said packaging area is provided for collecting and wrapping the packaged goods, said packaging area comprising a multiplicity of endless conveyors, a multiplicity of storage bins depending from each of said endless conveyors and containing particular goods, reflective spots disposed on said bins for identifying the goods therein, a selection device disposed adjacent each of said endless conveyors and in communication with said information storage device and said computer for selecting the storage bins containing the food to be packaged, said endless conveyor being provided with a by-pass rail and a selection rail, said selected storage bins containing goods to be wrapped being diverted onto said selection rail, a pickup point disposed adjacent said selection rail whereby ordered goods are

removed from each of the storage bins containing goods to be wrapped, and an indicator means in communication with said information storage device positioned near said pickup point for indicating the amount of goods to be removed from a selected bin.

6. A supermarket according to claim 5 wherein said selection device actuates an indicator means which receives information pulses from said information storage device at the pickup point where the goods are removed from said storage bins.

7. A supermarket according to claim 6 wherein said by-pass rail diverts non-selected storage bins and by-passes said pickup point said selection device adapted to switch said selected storage bins onto said selection rail for advancement to said pickup point.

8. A supermarket according to claim 5 wherein a removal conveyor is positioned adjacent said pickup point for removing to a wrapping station the goods removed from said selection storage bin.

15

20

25

30

35

40

45

50

55

60

65

70

75