

Feb. 13, 1973

P. SCHOHL

3,715,862

AUTOMATIC BAGGER OF GROCERIES SUNDRIES

Filed Aug. 9, 1971

5 Sheets-Sheet 1

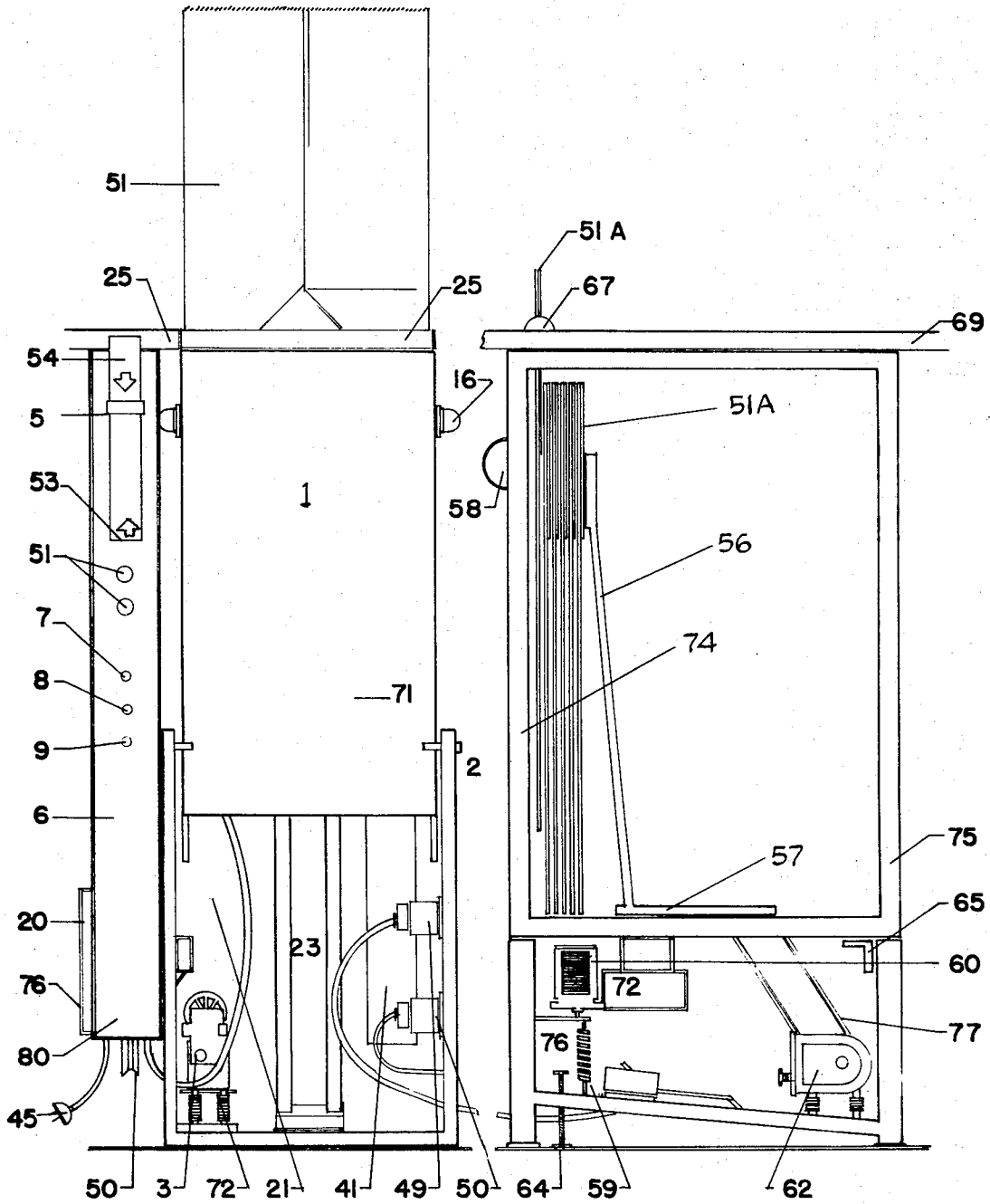


FIG. I

FIG. 1A

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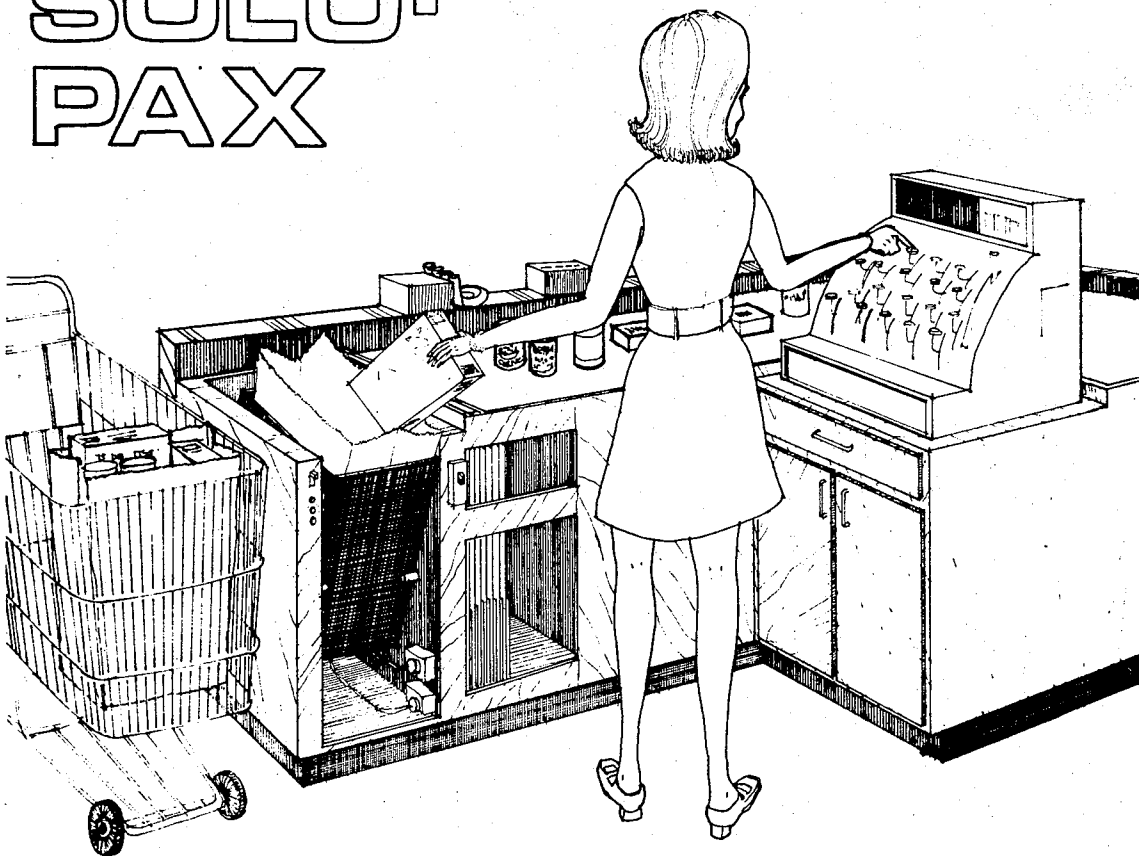


FIG. 2

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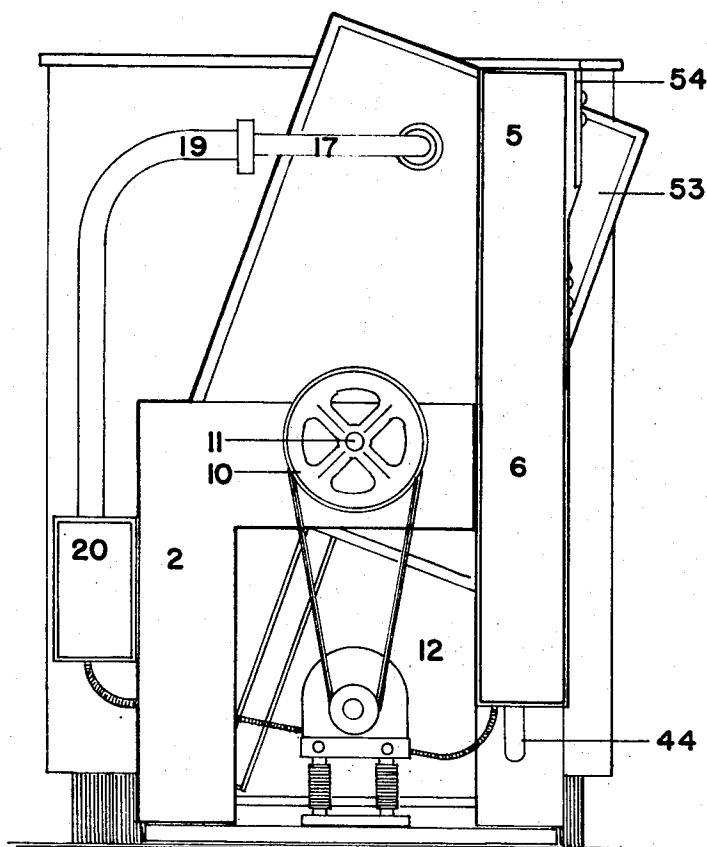


FIG. 3

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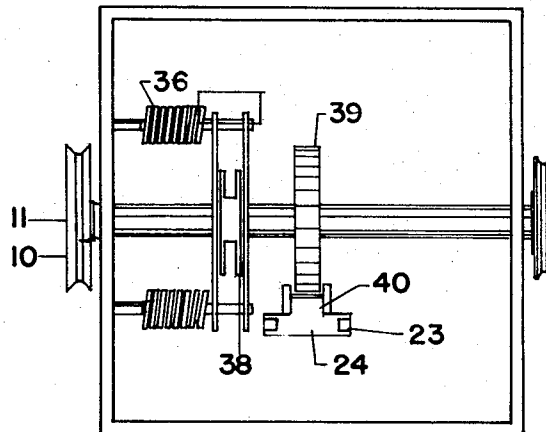


FIG. 4

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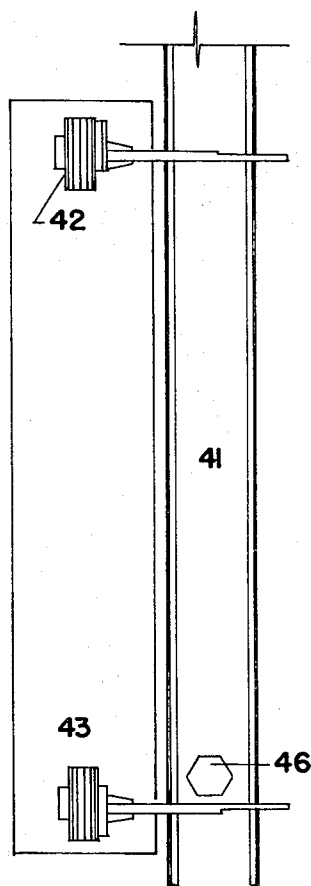


FIG. 5

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2 Claims

ABSTRACT OF THE DISCLOSURE

This invention is a novel way to improve and eliminate extra motion and lost time in the packaging of groceries and most of the items found in supermarkets and stores. After observing for many years the old manner of packaging the customers' items, it was noted that the cashier must pick up each item to price, and she either sets it back down or gives it a toss to the far end of the check-out counter. Why not be able to bag at the same time, as you check out? This invention operates on a small rugged 110 electrical system. Simply plug in anywhere. The machine will fit under any conventional grocery counter and be out of the way. It can be used at all times or it can be by-passed.

This machine not only makes packaging much easier, it also furnishes the bag (FIG. 1) 67 to cashier. When using automatic bagging as shown in FIG. 2, it automatically keeps the countertop clear at other times. The automatic bagger will hold the bag open by a vacuum system (FIG. 3) 20, 19, 17. Also, it employs a tilt attitude (FIG. 3). This tilted piston is only 15" from the cash register. The cashier can price with the right hand; then, at the same time, place objects in tilted piston (FIG. 2). This tilt attitude enables the packaging of irregular shapes without falling sidewise or tipping. When the bag is full, fingertip touch on the "up" (FIG. 1) 53, causes the vacuum system (FIG. 1) 20, to terminate through automatic release of microswitch (FIG. 1) 72. Energizing motor (FIG. 1) 3, tilt piston (FIG. 3) 1 goes to vertical (FIG. 1) 1. Interpiston plate (FIG. 1) 25 rises to top, with packed bag 51 and machine stops. Packed bag is now at counter-top 69 while the bag was rising inside of piston 1. At the same time, the folded bag is rising in bag-feed (FIG. 1A) to counter 69, via adapted 67. To start filling another bag, push down button (FIG. 1) 54. Interpiston plate (FIG. 1) 25 will lower 13".

EXPLANATION OF VIEWS

FIG. 1

Front view of automatic bagger and bag-feed plugged into each other and both energized via 45, FIG. 1. This is the operational attitude of both, note bag feed under the counter and automatic bagger is flush with 11" x 14" opening cut in present counter. (Better shown in FIG. 2.) The packed bag is at countertop level, and a fresh bag 51A is ready to go into the piston 1 after pushing down on 54, FIG. 1. You will note from the prone front view that under piston 1 are rack 40 and H-member 24 in "up" position resting in guide 23. This group 40, 24, FIG. 4, rises and lowers; however, 23 guide is stationary. (Better shown in FIG. 1.) FIG. 1 showing vacuum 20, which is a vacuum system placed in an insulated box with a built-in baffle to cut down on the noise, automatic bagger will operate without bag feed simply by unplugging it from receptacle 49. Also the vacuum may be removed by unplugging 50. The complete machine embodies these 3 units. Both machines are grounded to case 6 at grounding screw 80, using a No. 12 3 conductor multi-strand rubber-covered approved cord 45.

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FIG. 1A—Prone front view of bag-feed

A component of an automatic bagger, rectangular vertical box 12½" x 14" x 29" whose base 74 has a 20° angle to allow for 64 adjusting bolts. 75 is a 20° slanting sub-base to support folded bags. Said base is not fastened, but rests on 4 angular supports. On bottom of sub-base 75, angle 72 is attached and solenoid 60 body is attached. The tongue of solenoid 76 is attached to another angular iron 59, and both then put under a strain by spring. Five rubber rollers 58 are activated by belt-driven motor 62, FIG. 1A. When 51 bag is packed (FIG. 2) and control button 53 on box 5 is pushed up, electric power from junction box 6, through cable 44 (FIG. 3) and through receptacle 49 (FIG. 1) simultaneously causing solenoid 60 to close, also causing vibration to bounce all bags upward and forward, followed by 57 follower and bag-support, FIG. 1A. At this time, rubber-rollers are turning counter-clockwise and bag is rising upward in the bag-feed and through counter by way of adapter 67 and approximately 3" above the counter. When the packed bag is counter height, electrical supply is automatically cut to the bagger in bag-feed. No action is made in the bag-feed at down-stroke of automatic bagger.

FIG. 2

This drawing was made with a girl using the automatic bagger. The register, counter, and groceries are not part of invention. They are used only to illustrate the new method and practicability of same.

FIG. 3

This is a side left view, showing the piston 1 tilted. Machine can be plugged by 45, all starting switches 7, 8 and 9 are flipped up ready to operate.

FIG. 4

Looking directly down into piston 1 with piston plate 25 removed, we see a ½" shaft 11 centering a 2" gear 39 meshing rack gear 40, this rack attached to a 1" x 2" H-member 24 in guide 23. The inverted section of H-member 24 slides up and down in a guide as shown in FIG. 1. This guide is attached to the bottom of piston 1. As piston 1 tilts, the guide also tilts (FIG. 3 for example). As the motor turns clockwise, brake lining 38 pressed by spring 36 is causing friction and shaft 11 turning clockwise, gear also turning clockwise causing piston 1 to tilt forward and hold in that position as motor 3 ceases on the upstroke. The opposite will occur returning piston 1 to vertical.

FIG. 5

This is a prone view looking from the rear of automatic bagger.

This 2" x 11" board 41, being attached to the underside of piston 1, supports the spring loaded, long-bladed upper 42 and lower 43 limit switches and associated wiring.

Coinciding with movement of said board, the piston tilts, allowing strike bolt 46 mounted on the lower end of H-member 24 (FIG. 4) and rack gear 40 to control upper and lower movements.

First form

This shows structure and union of parts in automatic bagger. The tilt-out position of piston 1 is slightly larger than the standard grocery bag, 7" x 12" x 17". The bag is to be inserted into piston 1. The supporting base 2 is made of ½" plywood and supports the piston. Horizontal shaft 11, FIG. 3, runs through base to left side of piston and out the right side of piston through right supporting base. On said shaft inside of piston a friction

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arrangement, as described in FIG. 4 causes the piston-box to tilt. The operator touches "up" control, and the piston box goes to vertical.

Motor 3 is $\frac{1}{15}$ horsepower with reduction gears and is reversible. FIG. 1 sliding control glass illuminated window with "up" and "down" arrows, 54 down 53 up. FIG. 5 a metal box having a reversing switch and a small signal light shows the systems energized. This control slides slightly on end of metal box 5. 6 is the metal electrical system box feeding power to all components. The main disconnect toggles 7, 8, 9 (FIG. 1) connect power to motor 3, vacuum 20 and solenoid motor on bag-feed via receptacles 49 and 50.

Pulley 10 powers both counter-clockwise or clockwise shaft 11 and tilt mechanism. External section is vacuum piston port 16, which is medium for holding bag in tilt position, vacuum routing 17, vacuum flex-plastic hose 19 to vacuum system 20. As stated, this system is automatic. Push down 54, inner plate lowers 13". Piston tilts, vacuum holds the bag. After packing the bag, vacuum ceases, push-up control piston plate goes to vertical and a new bag is ready at counter-top through bag-feed. A nine conductor multistrand flex loop 44 energizes all components. Note FIG. 3 with rack 40 and guide 23 H-member 24 at rear tilt attitude with rack 40 and guide 23. Here again, to accomplish vertical tilting (up and down) is part of the invention.

Pressure is applied to brake lining 38 which is secured to 4 x 6 member attached to floor of piston. Pressure against two inch pulley as shaft 11 turns clockwise, gear

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will also turn clockwise. Pressure also caused piston 1 to tilt and return.

The bag-feed as shown in FIG. 5 is a very simple machine using only 2 electrical parts ($\frac{1}{15}$ horsepower geared motor and solenoid) This is fully explained in FIG. 5, front view of automatic bag-feed.

I claim:

1. In combination with a checkout counter having a portion constituting a loading platform: a magazine for holding a stack of bags, means for feeding a bag to a position adjacent said loading platform whereby it can be grasped by an operator, a pivotally mounted bag receiving well, piston means forming a movable bottom for said well, means for pivoting said well about a horizontal axis, means for moving said piston means up and down in said well, and vacuum means located in the sides of said well to hold a bag in open position while articles are inserted therein.

2. The combination as set forth in claim 1 which includes manually operated switches to actuate said means in sequence.

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TRAVIS S. McGEHEE, Primary Examiner

U.S. Cl. X.R.

53—163, 245; 186—1A