Oct. 16, 1956 H. HEINIG 2,766,905

DISPENSING DEVICE

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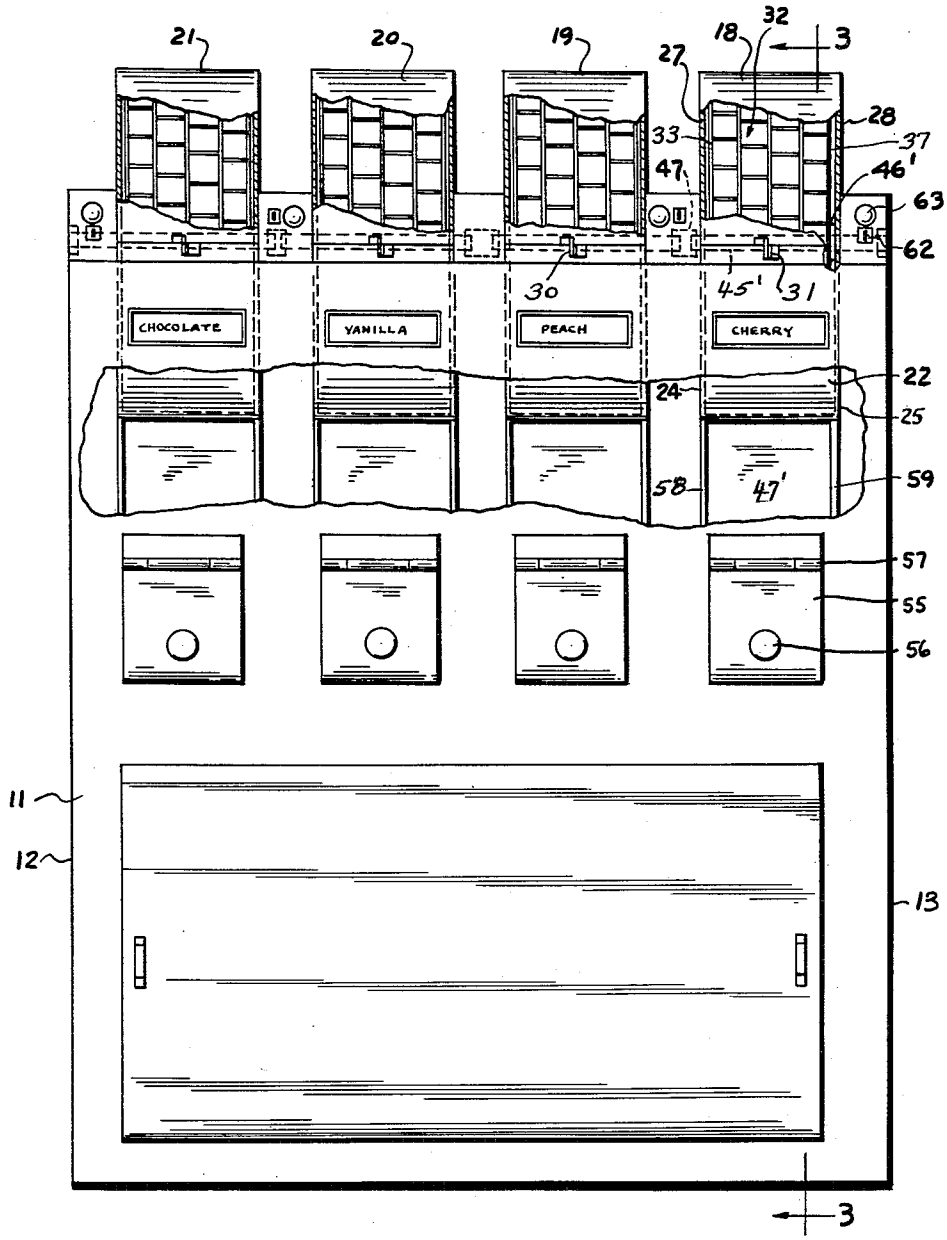


Fig. 1

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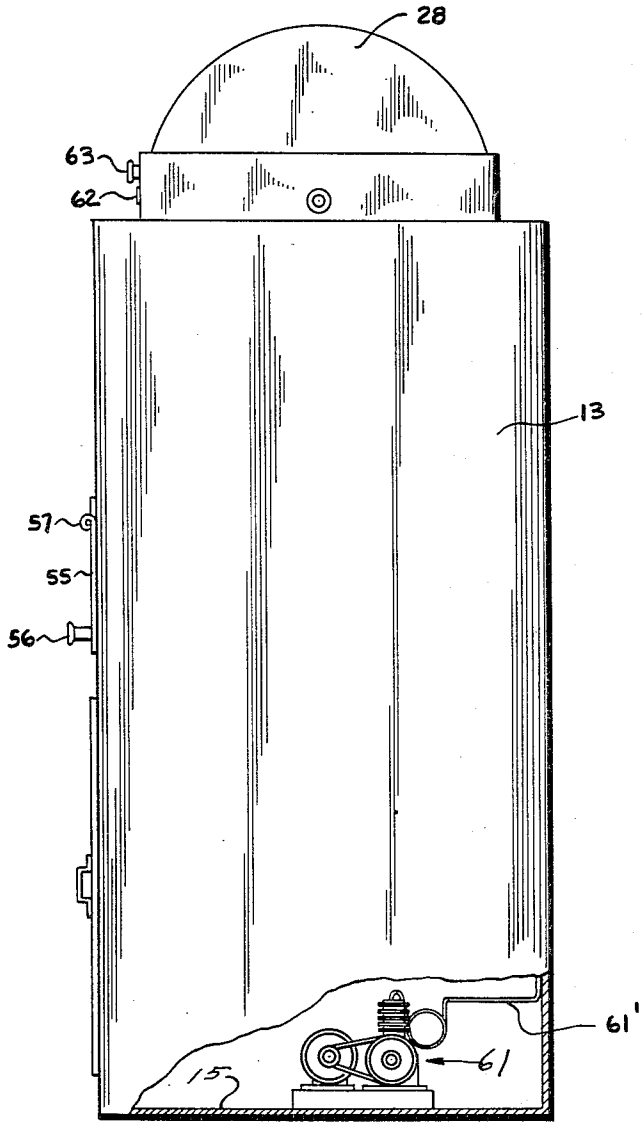


Fig. 2

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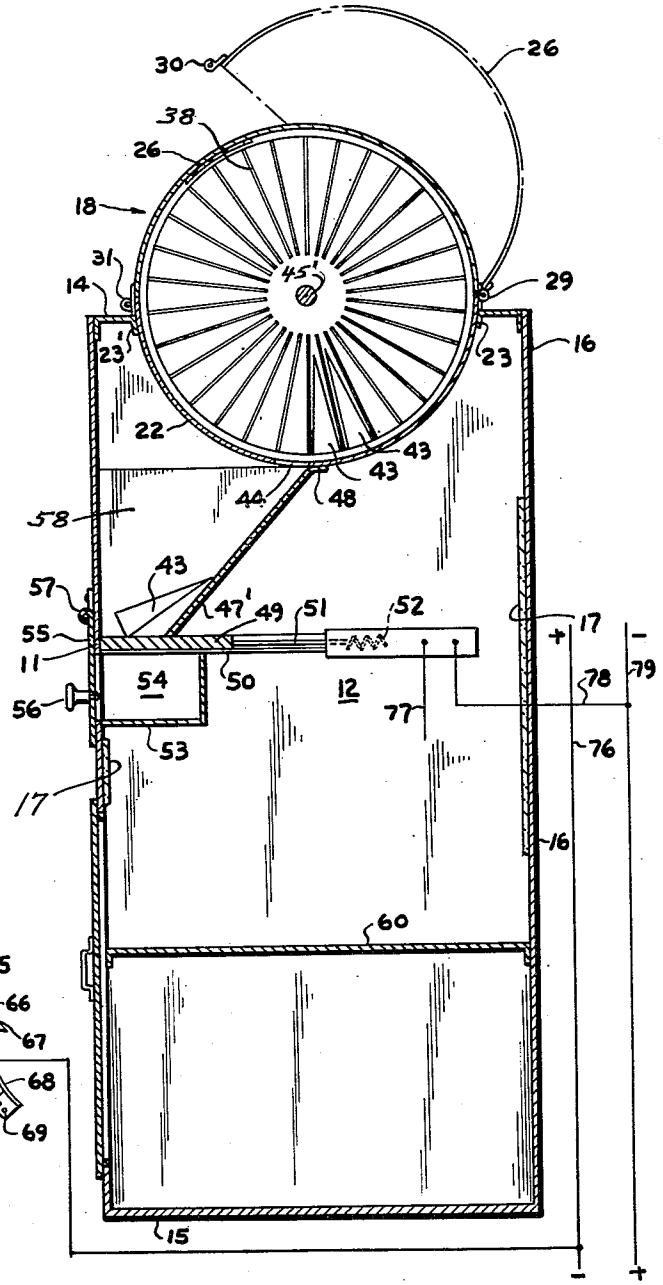
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Fig. 3



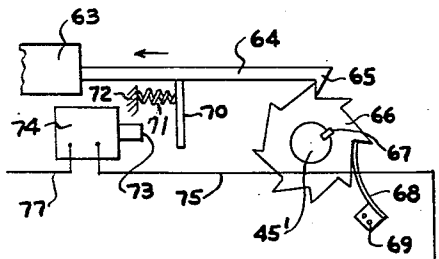


Fig. 4

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DISPENSING DEVICE

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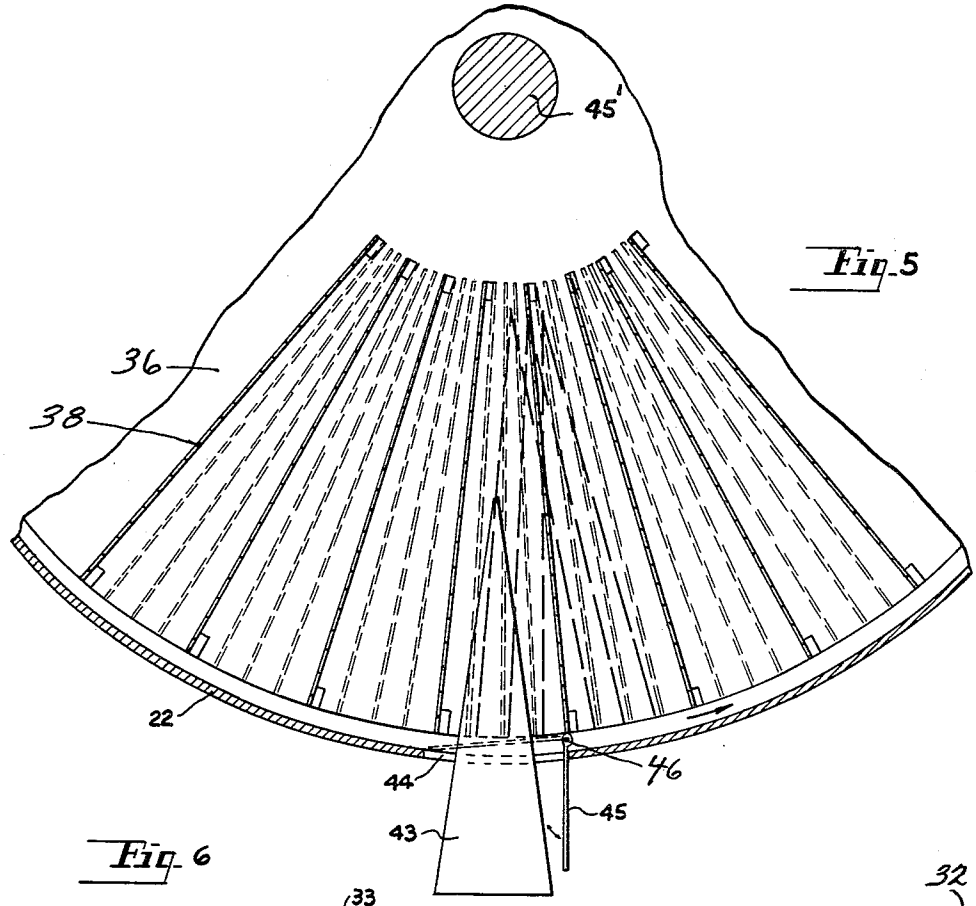
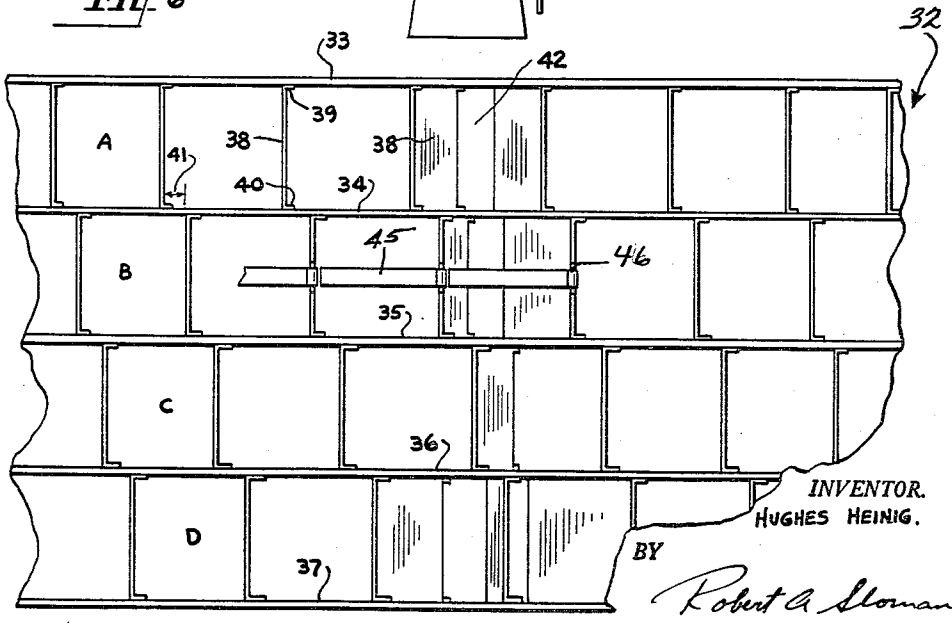


Fig. 5

Fig. 6



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DISPENSING DEVICE

Hughes Heinig, Detroit, Mich.

Application October 23, 1952, Serial No. 316,428

1 Claim. (Cl. 221—83)

This invention relates to dispensing devices, and more particularly to a novel coin controlled dispenser.

It is the object of the present invention to provide a novel and simplified dispensing device which is particularly adapted for dispensing icecream cones.

It is the further object of this invention to provide a dispensing mechanism which is inexpensive to manufacture and which has a minimum number of moving parts.

These and other objects will be seen from the following specification and claim in conjunction with the appended drawings in which:

Fig. 1 is a front elevational view of the dispensing device with the front wall partially broken away for illustration.

Fig. 2 is a side elevational view thereof.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is a fragmentary partially diagrammatic view illustrating the drum operating mechanism.

Fig. 5 is an enlarged fragmentary side elevational view of a portion of the drum with its end wall removed; and

Fig. 6 is a fragmentary plan view of a portion of said drum illustrating the circularly offset sets of radial compartments.

It will be understood that the above drawings illustrate merely a preferred embodiment of the invention, and that other embodiments are contemplated within the scope of the claim hereafter set forth.

Referring to the drawings, the present dispensing device consists of a hollow upright body with front wall **11**, side walls **12** and **13**, top and bottom walls **14** and **15**, and rear wall **16**. There is fragmentarily illustrated a portion of insulation **17**, which preferably is applied to the inner surfaces of each of said wall portions, particularly where the body is to be refrigerated.

Positioned at the upper end of said body are a plurality of separate laterally spaced drum housings **18**, **19**, **20** and **21**, each adapted to house a separately rotatable article storage drum in the manner hereafter described.

As each of said drums is of the same construction, the description hereafter will be directed to drum housing **18** and the drum therein, and particularly as Fig. 3 is a section taken on line 3—3 of Fig. 1.

Drum housing **18** includes a semi-circular stationary element **22**, which is secured at points **23** and **23'** to the top wall **14**, and which includes the parallel spaced upright semi-circularly shaped side wall elements **24** and **25** designated in Fig. 1. Housing **18** also includes a separate semi-circularly shaped cover element **26** with parallel spaced semi-circular side wall elements **27** and **28**, said cover being hinged at **29** to the top wall **14**.

Cover **26** is upwardly openable as indicated in dotted lines in Fig. 3, to provide access to the rotatable drum **32**, which is journalled within said drum housing. Cover **26** includes a transversely apertured locking clip **30**, which with said cover closed cooperatively registers with a similarly apertured locking post **31** secured to the stationary portion of said drum housing. If desired, a padlock or

other device may be provided for locking the cover **26** in closed position.

Referring to Fig. 6, rotatable drum **32** has a pair of discs **33** and **37** in parallel spaced relation defining the upright end walls thereof. Intermediate end walls **33** and **37** are a plurality of parallel spaced circular discs **34**, **35**, **36** to thereby define within said drum a plurality of independent circular openings.

Within each of said circular openings, there are provided a plurality of spaced radially directed partitions **38** secured to adjacent end plates, such as plates **33** and **34**, as at points **39** and **40**, to thereby define throughout the periphery of each of said circular openings a plurality of sets of circularly arranged radially directed article storage compartments A, B, C, and D respectively.

It will be noted from Fig. 6 that the compartments in one set are circularly offset a predetermined distance as indicated by the designation **41**, with respect to an adjacent set of compartments. It will be noted that there are transverse slots **42** at the inner ends of said compartments formed by the converging partitions **38**, within which are stored the cones **43**, filled with icecream of a predetermined flavor.

As illustrated in Figs. 3 and 5, a transverse outlet **44** is formed in the bottom of the drum housing element **22** through which the cones **43** are adapted to successively drop from the various compartments A, B, C, and D formed within said drum.

The above described circular offset of the compartments of adjacent sets thus provides that no more than one compartment will be in registry with the outlet **44** for any particular position of rotation of the drum **32**.

For illustration, referring to Figs. 5 and 6, if the compartment A is in registry with the outlet **44**, compartments B, C, and D will be out of registry so that only the cone in the particular compartment A will drop by gravity through said outlet **44**. Upon a slight incremental rotary movement of drum **32**, a short distance, as indicated by the offset distance **41**, the cone in compartment B will then be in registry with said outlet so that the same will drop by gravity through said outlet.

Successively, an additional short rotary movement of said drum will place compartment C in registry with outlet **44**, and thereafter an additional increment of rotation will place compartment D in registry with outlet **44**.

By this arrangement, it is apparent that a large number of cones may be stored within the drum and that only a slight rotary movement of the drum is required for dispensing the cones successively and alternately from the adjacent compartments in the various sets of such compartments.

It is contemplated that the stationary element **22** of drum housing **18** will cooperate with the peripheral outlets of the various compartments for retaining the articles within said drum.

The present preferred embodiment of the invention, however, illustrates a rectangular gate **45**, which is hinged at one end at **46** to a peripheral portion of drum **32** and with its other end adapted to bear against the interior portions of drum housing element **22**, to thereby maintain the gate **45** substantially closing off said compartments and maintaining the cones **43** therein.

Consequently, for a certain portion of the rotation of said drum, the outer end of the gate **45** will ride along the interior surface of drum housing element **22** until said gate registers with opening **44**. At which time, the gate will drop by gravity about its hinge **46** to the vertical position shown in Fig. 5. This will permit the cone **43** to drop out of its compartment and through the slot **44** and down the chute in the manner hereafter described. It furthermore follows that continued rotation of drum **32** will mechanically close the gate **45** by virtue of the en-

gagement of the bounding wall of the outlet 44 in housing element 22.

Horizontally arranged shaft 45' extends through drum 32 and is suitably secured thereto, such as at 46', and the outwardly projecting ends of shaft 45' are journalled within the bearings 47, which are illustrated in Fig. 1.

An elongated chute 47' is arranged below outlet 44 with the upper end of said chute in registry with said outlet, and secured to drum housing element 22 at 48. The lower end of the chute 47' terminates in an opening in front wall 11 of the dispenser body normally covered by the hinged door 55 with handle 56.

Horizontally reciprocal trap door 49 normally closes off the lower end of chute 47' and is slidably mounted between and upon a pair of spaced guideways 50. Plunger 51 extending from solenoid 52 is secured at its outer end to the trap door 49, so that momentary energization of said solenoid will withdraw said trap door from the path of downward movement of cone 43 and permit the same to enter delivery chamber 54, which has a bounding bottom wall 53, and which represents the lower end of said chute.

The door 55, of which there is one corresponding to each of the drum housings, is hinged to front wall 11 at 57 and may be opened, upwardly by handle 56 to permit manual access to the dispensed cone 43 within chamber 54.

The chute 47' includes the upright spaced side walls 58 and 59, which cooperate with the interior surface of front wall 11 thereby completing the chute construction.

Cone storage shelf 60 is provided within the lower portion of the dispenser body as illustrated in Fig. 3; and as shown in Fig. 2, a suitable refrigerating mechanism 61 is positioned upon the bottom wall 15, which operates in a conventional manner. The detail of the mechanism of the refrigerating mechanism forms no part of the present invention and consequently a detailed description thereof is omitted. It will be noted, however, that the refrigerating mechanism is adapted to supply a refrigerant through the coil 61', which will terminate in any desired part of the housing or within the drum housing for refrigerating the interiors thereof.

As shown in Fig. 1, there is provided a coin receiving slot 62 adjacent to and corresponding to each of the drum housings 18, 19, 20 and 21; and said coin slots are associated with a suitable coin control mechanism for permitting release of the manually reciprocal plunger 63 upon the insertion of a suitable coin. The construction of the coin control mechanism forms no part of the present invention as it may be purchased on the open market, and consequently the exact detail of its structure and the description thereof is omitted herein. It is sufficient to state that the mechanism is such that insertion of the proper coin within the slot 62 will release the plunger 63, so that it may be manually withdrawn for effecting a slight incremental rotary movement of the corresponding drum 32.

Referring to Fig. 4, the plunger 63 has inwardly projecting therefrom an arm 64 carrying a pawl 65 adapted for cooperative driving engagement with the ratchet wheel 66, which is secured, such as by the key 67 to the rotatable shaft 45', upon which the drum is secured.

Spring detent 68 anchored at 69 to some portion of the dispenser body cooperatively bears against ratchet 66 and limits rotation thereof to a counterclockwise direction.

Switch actuating bar 70 depends from arm 64 and engages one end of a spring 71, which is anchored at 72. Consequently, outward movement of the plunger 63 and arm 64 compresses spring 71 and said spring is effective for returning said arm and plunger to its original position, so that the pawl 65 engages the next succeeding ratchet on ratchet wheel 66.

The depending bar 70 upon outward movement with plunger 63 engages the switch element 73 of the electrical switch 74. Said switch is connected by the lead wire 75 to the power line 76. There is a second lead wire 77 which connects the switch 74 with the solenoid 52 shown in Fig. 3, so that outward movement of plunger 63 momentarily energizes solenoid 52. This effects an inward movement of the spring biased plunger 51, which connects trap door 49, and permits the dispensed cone 43 to fall within the delivery chamber 54, which terminates in an opening in front wall 11 covered by the door 55.

The electrical circuit from the solenoid is completed by an additional lead wire 78, which joins the second power line 79.

It is contemplated that the various drums within housings 18, 19, 20 and 21 will be supplied with ice cream cones of different flavors, if desired. Naturally, there is a separate coin controlled manually operable plunger 63 for each of the cone containing drums 32 of the various drum housings.

Having described my invention, reference should now be had to the claim which follows for determining the scope thereof.

I claim:

In a dispensing device having a drum housing with an outlet at its bottom and a drum rotatably journaled therein on a horizontal axis with a plurality of circularly arranged radial storage compartments in sets open at the drum periphery and adapted to be successively registerable with said outlet on intermittent rotation of said drum; a chute registerable at its upper end with said outlet and with its lower end terminating at the front of the dispensing device, a coin controlled manually slidable longitudinally movable arm, a horizontally reciprocal trap door normally blocking the lower end of said chute, a spring normally holding said door closed, a solenoid joined to said door, and an electric switch connected into a circuit including a power source with said solenoid and engageable by said arm on longitudinal movement thereof for momentarily activating said solenoid to open said door.

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