July 24, 1951 L. J. C. CATTANACH 2,562,015

VENDING DEVICE FOR CYLINDRICAL ARTICLES

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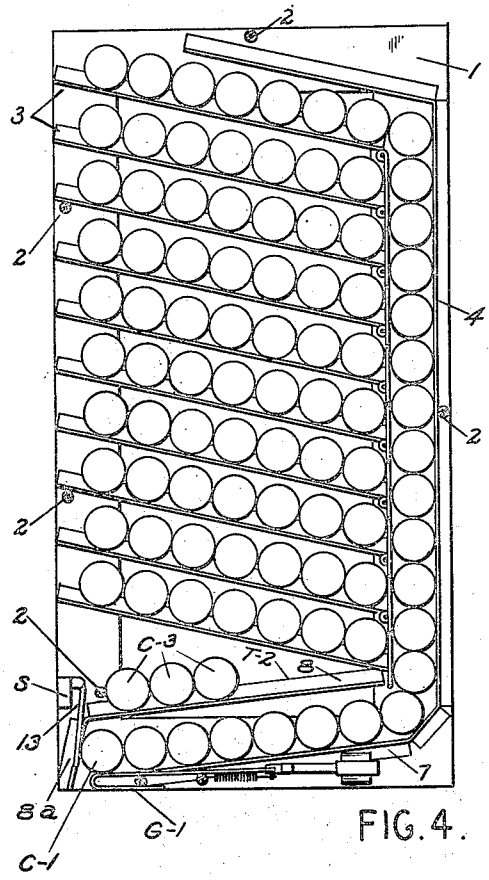


FIG. 4.

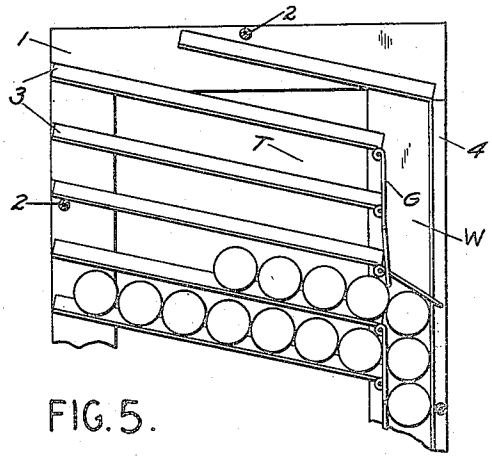


FIG. 5.

FIG. 3.

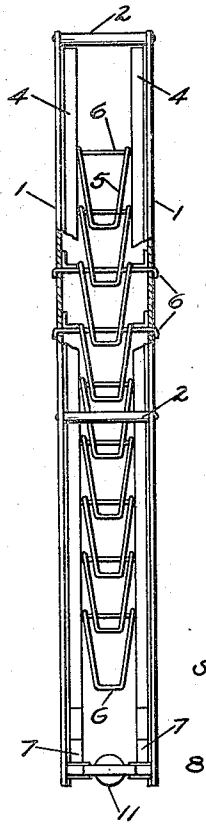
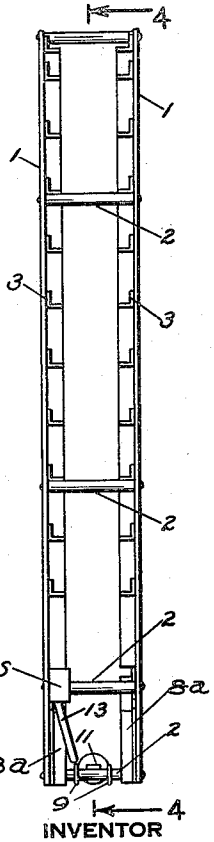


FIG. 2.



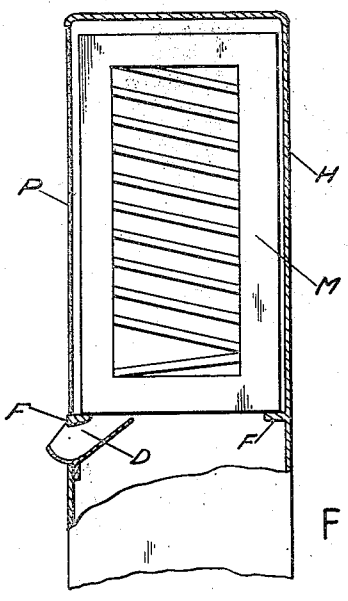


FIG. 1.

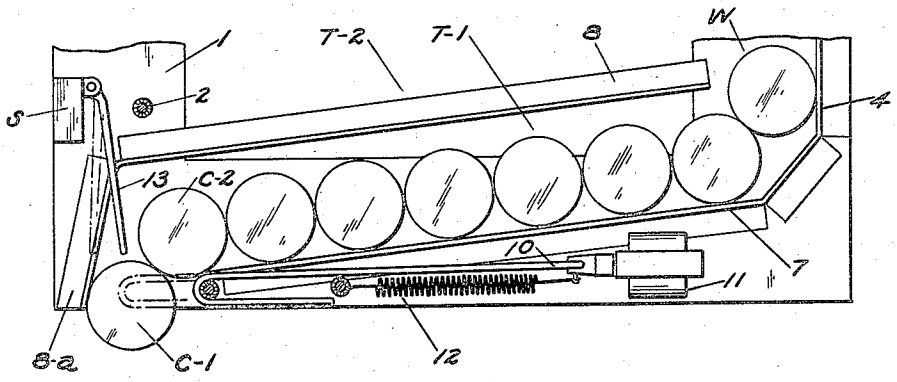
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FIG. 6.



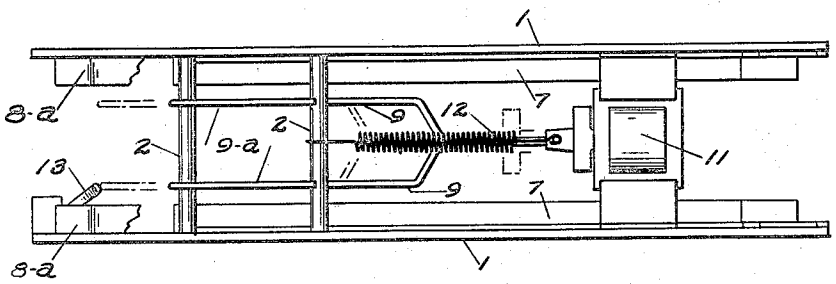


FIG. 7.

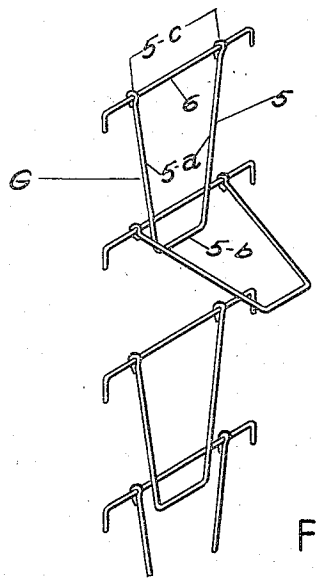


FIG. 8.

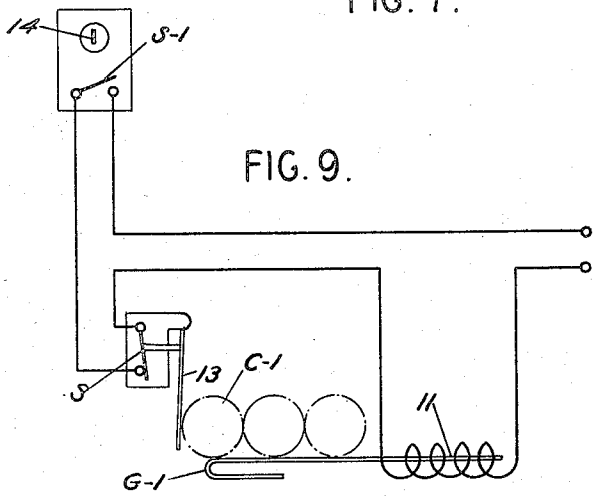


FIG. 9.

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UNITED STATES PATENT OFFICE

2,562,015

VENDING DEVICE FOR CYLINDRICAL ARTICLES

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Application May 18, 1950, Serial No. 162,676

1 Claim. (Cl. 194—10)

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My invention consists in a new and useful improvement in Devices for vending liquid containers and is intended more particularly for producing a novel machine which is automatically coin-operated for sale of cans of fruit and vegetable juices. The particularly novel and useful features of my improved device are (1) the combination of a housing and a plurality of magazines mounted in the housing, to be charged with the containers of various juices, respectively, and an automatic coin-operated mechanism for dispensing the containers from selected magazines, (2) the combination of elements comprising the dispensing mechanism, and (3) the means for the control of the passage of the cans through each magazine.

While I have illustrated in the drawings and have hereinafter fully described certain specific embodiments of my invention, it is to be distinctly understood that I do not consider my invention to be limited to said specific embodiments, but refer for its scope to the claim appended hereto.

In the drawings:

Fig. 1 is a side elevation of a magazine and a vertical section of a fragment of the housing of the device.

Fig. 2 is an enlarged end elevation of the magazine viewed from the left side of Fig. 4.

Fig. 3 is an enlarged elevation of the magazine, similar to Fig. 2, but viewed from the right side of Fig. 4, a portion being broken away.

Fig. 4 is a vertical section on the line 4—4 of Fig. 2, in the direction of the arrows, showing the magazine fully charged with cans.

Fig. 5 is a fragmentary view, similar to Fig. 4, showing the magazine partially depleted.

Fig. 6 is a greatly enlarged fragment of Fig. 4, showing the dispensing mechanism in discharge position.

Fig. 7 is a bottom plan of the dispensing mechanism shown in Fig. 6.

Fig. 8 is a greatly enlarged perspective of four of the can gates shown in side elevation in Fig. 5.

Fig. 9 is a diagrammatic view of the coin-operated can dispensing mechanism.

As illustrated in the drawings, my improved apparatus has a housing H with a removable front panel P, flanges F and a dispenser D. Removably mounted on the flanges F there is a plurality of magazines, one of which is shown in Fig. 1. The magazine M has side frames or panels 1 connected by spacer bars 2. A plurality of slightly inclined trackways T are formed in the magazine M by pairs of angle-irons 3

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mounted on the frames 1. The angle-irons 3 are so disposed on the frames 1 that their higher ends are flush with the edge of one open side of the magazine M (Figs. 2 and 4) and their lower ends are spaced from the edge of the other open side of the magazine M (Figs. 3 and 4) to form a discharge well W having the angle-irons 4 on the said other edge of the magazine M.

Each trackway T is provided at its lower end, where it debouches into the well W, with a gate G. Each gate G (Fig. 8) is formed by a wire bail 5 having convergent sides 5—*a*, end 5—*b* and hooks 5—*c* about rods 6 mounted in the frames 1 (Fig. 3). It will be noted (Figs. 3, 4 and 8) that the bail 5 of the gate G of one trackway T depends from its rod 6 to overlap the rod 6 of the gate G of the next lower trackway T.

Communicating with the lower end of the well W there is an inclined trackway T—1 formed by angle-irons 7 mounted on the frames 1 and extending from the angle-irons 4 of the well W to a point suitably spaced from the other side edge of the magazine M. (Figs. 4 and 6.) A trackway T—2 formed by angle-irons 8 mounted on the frames 1 is disposed above and parallel with the trackway T—1 and extends downwardly from the junction of the lowest trackway T with the well W to a point adjacent the other side of the magazine M, its lower end being obstructed by one of the tie rods 2. The angle-irons 8 have portions 8—*a* projecting downwardly from the lower end of the trackway T—2 and registering with the angle-irons 7 of the trackway T—1.

Suitably mounted below the trackway T—1 there is a gate G—1 formed by two parallel rods 9 slidable on two of the tie rods 2 and having portions 9—*a* curved backwardly about one of the tie rods 2 to limit the movement of the gate G—1 in open position. The rods 9 are connected by a rod 10 with a suitable electrically operated actuator for the gate G—1, such as a solenoid 11. A return spring 12 attached to one of the rods 2 and the rod 10 is provided to bias the gate G—1 into closed position. (Fig. 9.)

Suitably pivoted on one of the frames 1 there is a switch lever 13 (Figs. 4, 6 and 9) which depends into the lower end of the trackway T—1 and is provided with a spring (not shown) to bias the lever 13 into position to open the switch S (Fig. 6) in circuit with a coin-actuated switch S—1 and the solenoid 11.

It is to be understood that each of the magazines mounted in the housing H is provided with its electrically operated dispensing mechanism, above described, that a single coin-actu-

ated switch S—1 is provided on the housing H, and that the housing H is provided with any suitable means (not shown) whereby the vendee operating a manually-actuated switch connects the circuit through the coin-actuated switch S—1 to the circuit of the dispensing mechanism of the particular magazine containing cans of the juice desired by the vendee.

I will now describe the use and operation of my improved device. When the magazine M has been fully charged with cans C, as illustrated in Fig. 4, the cans C, rolling from the topmost trackway T and fed downwardly through the well W, fill the trackway T—1, the foremost can C—1, having passed off of the angle-irons 7 of the trackway T—1, is supported by the rods 9 of the gate G—1 which is closed by the spring 12, the solenoid 11 being inactive. The can C—1 resting against the portions 8—*a* of the angle-irons 8 displaces the switch lever 13 and thereby closes the switch S.

The parts being as shown in Fig. 4, the device is conditioned to vend.

When the vendee has set the manually-actuated switch to control the dispensing mechanism of the magazine containing the cans of the juice desired and the proper coin is inserted in the coin-slot 14 of the switch S—1, the switch S—1 is closed by any suitable means, thereby energizing the solenoid 11 which functions to open the gate G—1 (Fig. 6) permitting can C—1 to pass by gravity from the magazine M and through the dispenser D of the housing H, to the vendee. When the gate G—1 is withdrawn from beneath the can C—1, the can C—1 moving downwardly releases the lever 13 which under its spring's pressure functions to open the switch S to de-energize the solenoid 11 to release the gate G—1 which is closed by its spring 12. It is to be understood that the parts are so designed and related that the movements of the gate G—1 are such that the can C—1 is discharged by gravity and its following can C—2 is retained by the closing gate G—1, and presses the lever 13 to close the switch S, the switch S—1 having become open by passage of the coin, so that the parts are again as illustrated in Fig. 4.

It is obvious from Fig. 4 that the gates G of the trackways T are maintained in closed position so long as there are cans C in the wall W up to the level of each gate G. As illustrated in Fig. 5 so soon as the cans C in the well W are fed below a gate G, the gate G is opened by pressure of the rolling cans C in its trackway T, to permit the cans C to feed into the well W and the trackway T—1.

The trackway T—2 is provided in the otherwise waste space in magazine M, intermediate the lowest trackway T and the dispensing trackway T—1, so as to provide a storage space for extra cans C—3 which are manually stowed in and removed from trackway T—2 as desired.

Having described my invention, what I claim is:

In a device for vending liquid containers, the combination of a magazine for the containers; a discharge chute in said magazine; a gate for opening and closing said chute; an electric solenoid for opening the gate when energized; a spring for closing the gate when the solenoid is de-energized; a coin-actuated switch for energizing the solenoid when it is closed; a second switch to de-energize the solenoid when it is opened; a spring to open said second switch; and a lever to close said second switch, said lever extending into said chute, the parts being so designed and related that a container in the chute, when the gate is closed, presses said lever to close said second switch, and when the gate is opened releases said lever to open said second switch.

LEO J. C. CATTANACH.

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