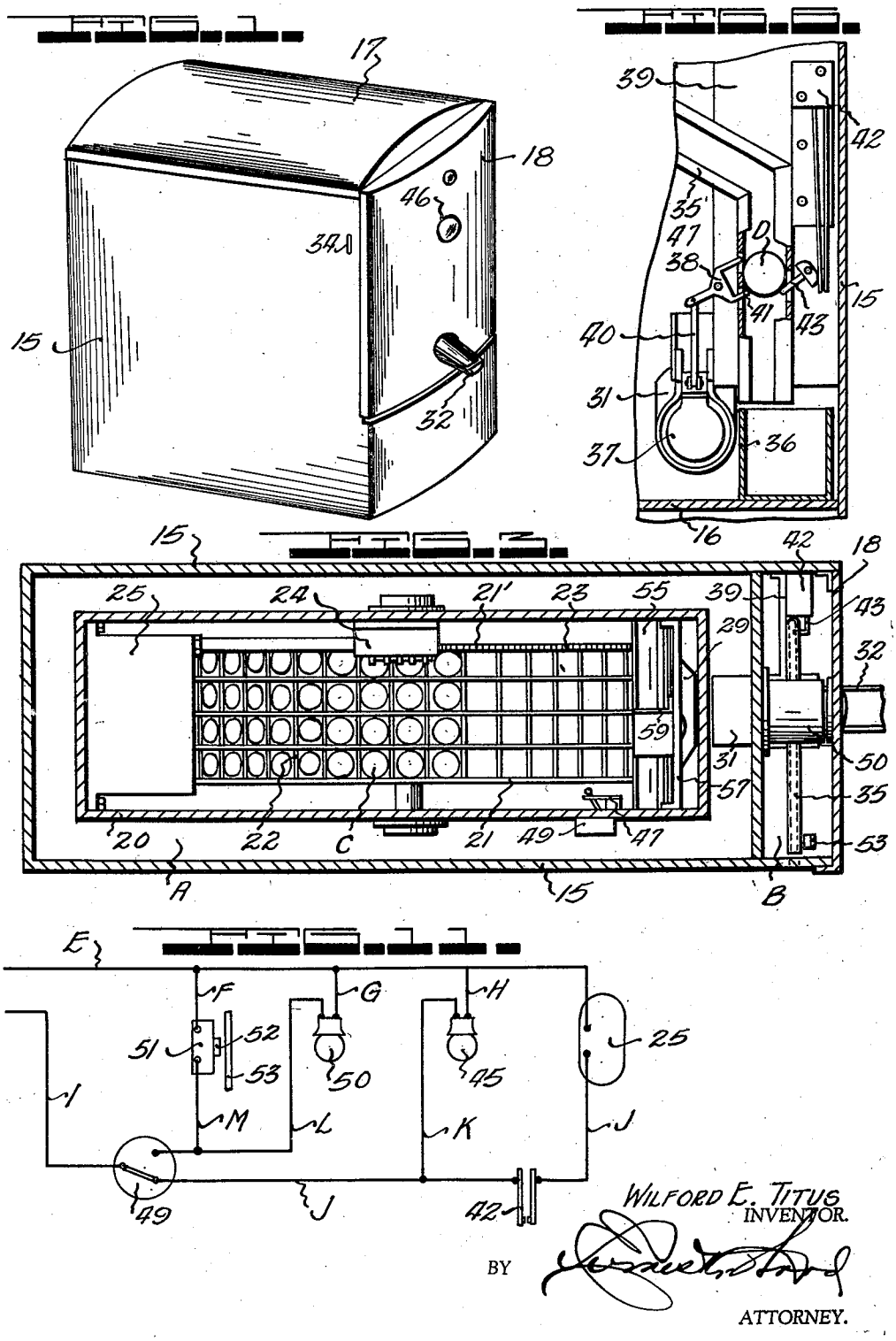
June 2, 1942. W. E. TITUS 2,285,068

VENDING MACHINE

Filed Feb. 9, 1939 3 Sheets-Sheet 1



WILFORD E. TITUS
INVENTOR.

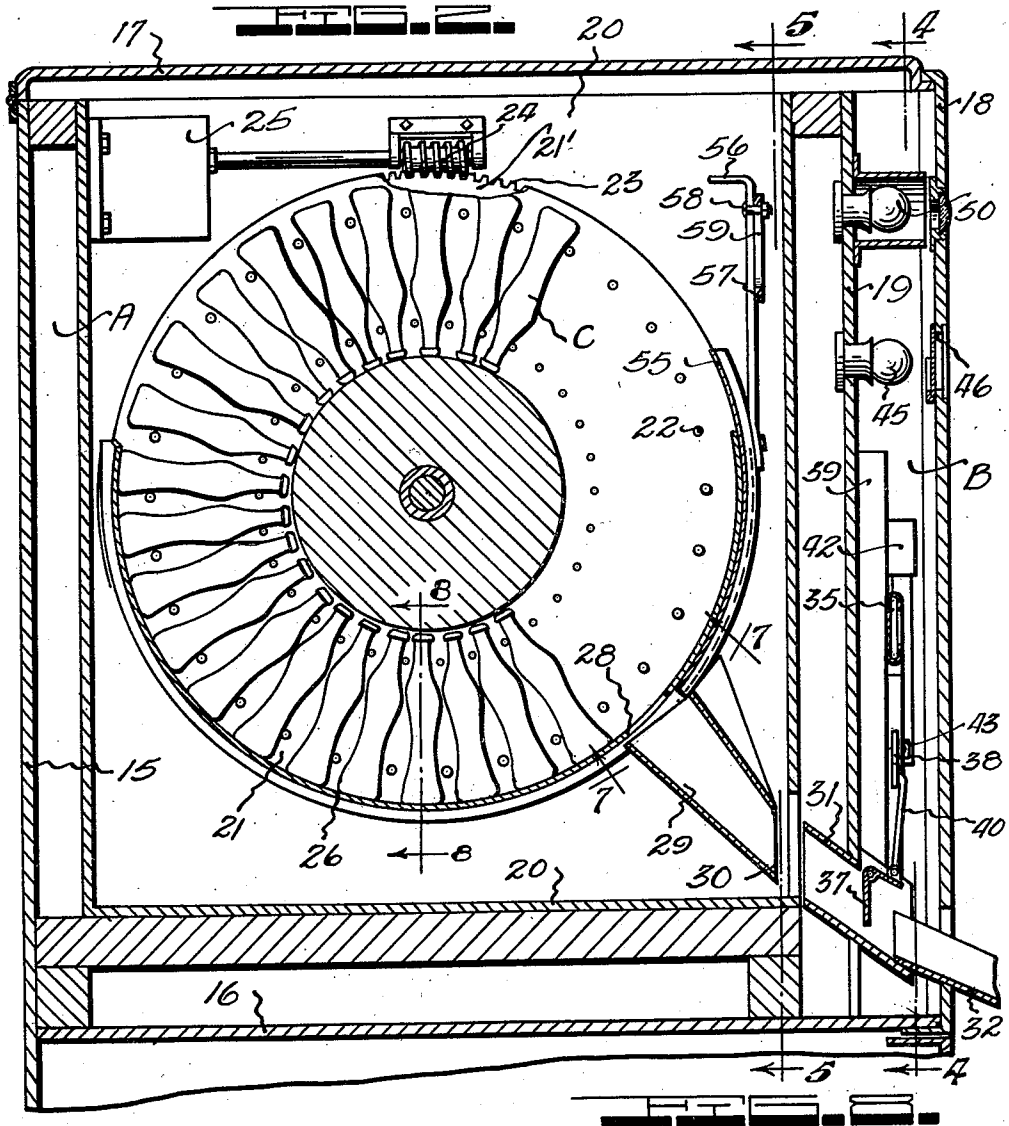
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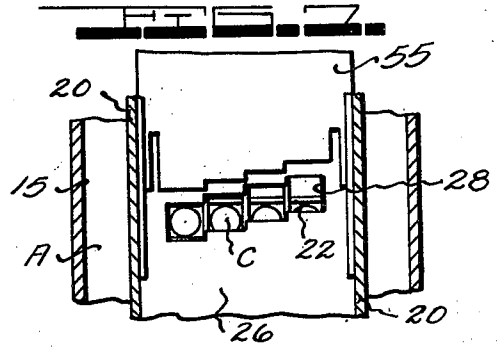
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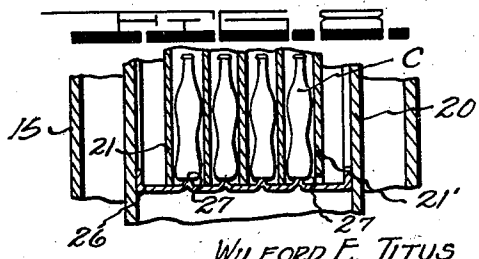
June 2, 1942. W. E. TITUS 2,285,068

VENDING MACHINE

Filed Feb. 9, 1939 3 Sheets-Sheet 2







WILFORD E. TITUS
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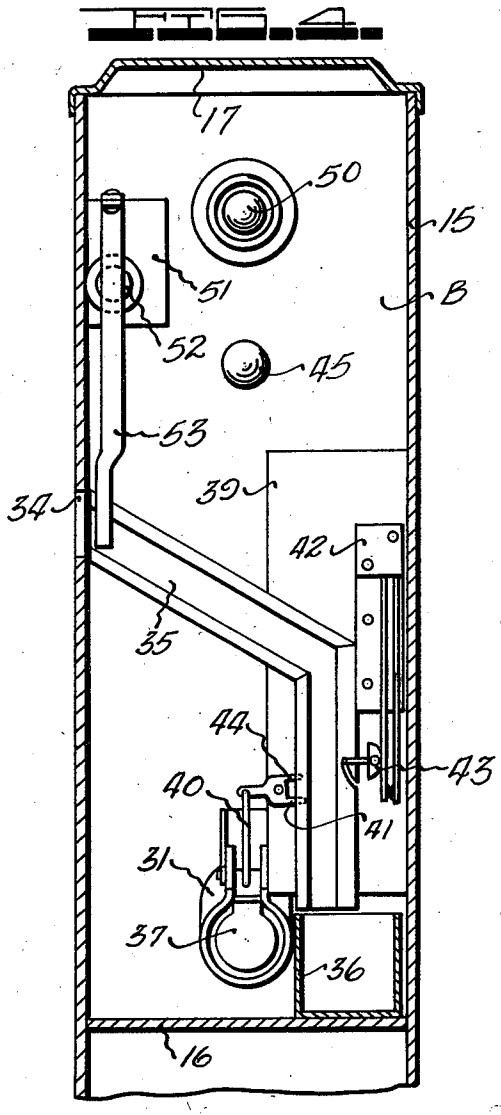
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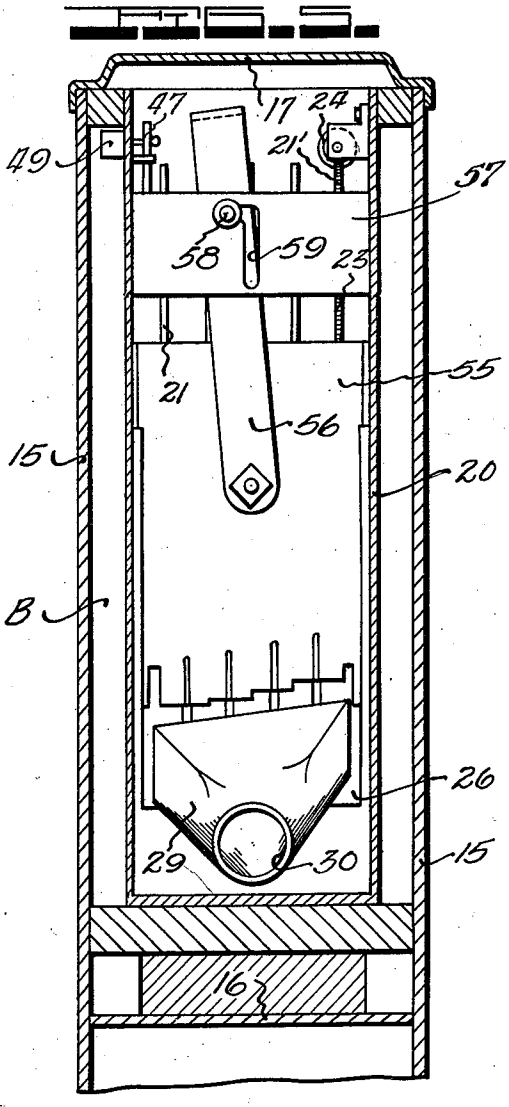
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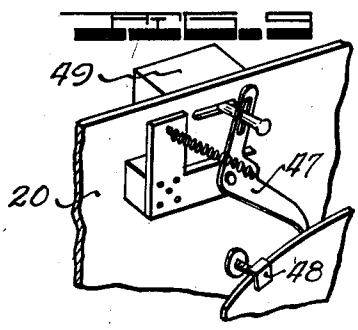
June 2, 1942. W. E. TITUS 2,285,068

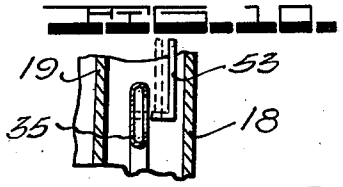
VENDING MACHINE

Filed Feb. 9, 1939 3 Sheets-Sheet 3









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Patented June 2, 1942 2,285,068

UNITED STATES PATENT OFFICE

2,285,068

VENDING MACHINE

Wilford E. Titus, Dallas, Tex.

Application February 9, 1939, Serial No. 255,375

1 Claim. (Cl. 312—38)

This invention relates to dispensing apparatus and more particularly to a machine for vending articles of merchandise singly from a storage drum.

The principal object of the invention is to provide in a machine of the character specified, a wheel or drum having a plurality of radially arranged compartments in which the merchandise is placed for single discharge through the medium of a novel stepped or staggered construction of the compartments or of the opening through which the articles are discharged.

Another object of the invention resides in the provision of means lying under the spaced rows of merchandise to support the same and is so constructed as to reduce friction to a minimum.

A further object of the invention is to provide a refrigerated dispensing compartment from which bottles or packages may be discharged with a minimum loss of refrigeration, having no direct metal to metal contact between the inner refrigerated compartment and the outer shell.

Another object of the invention is to provide an arrangement receiving the maximum quantity of articles ready to be dispensed, thereby reducing the number of times required to replenish the supply of merchandise.

Still another object of the invention is to provide means for automatically producing a signal when the machine is emptied of merchandise and for simultaneously closing a coin slot against the insertion of a coin.

Still another object of the invention resides in means adapted to receive a number of coins or tokens and will respond by dispensing articles singly until a number corresponding to the number of coins has been dispensed so long as each article is removed as it is delivered from the machine.

Broadly, the invention affords a vending machine whose simple construction and novel arrangement of parts renders it less likely to fail to operate and one which may be used with or without refrigeration, rendering it generally adaptable for vending not only cold beverages, frozen confections and the like but also in dispensing cigarettes, candies and similar merchandise.

With the foregoing objects as paramount, the invention has particular reference to its salient features of construction and arrangement of parts which will become manifest as the description proceeds, taken in connection with the accompanying drawings, wherein:

Figure 1 is an isometric view of a vending machine constructed in accordance with the invention.

Figure 2 is a transverse, vertical, sectional view of the device.

Figure 3 is a plan view thereof.

Figure 4 is a transverse, vertical, sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a similar view taken on the line 5—5 of Figure 2.

Figure 6 is a detail view partly in elevation and partly in section, of the coin actuated elements.

Figure 7 is a detail view taken on the line 7—7 of Figure 2.

Figure 8 is a similar view taken on the line 8—8 of Figure 2.

Figure 9 is an isometric view of the signal control switch.

Figure 10 is a detail view of the coin chute and coin chute closure, and

Figure 11 is a wiring diagram.

In the drawings, the numeral 15 designates an outer shell or housing having a false bottom 16 disposed therein. A hinged top 17 is provided, said top being held in its lowered position by a hinged door 18 at one end of the housing. A vertical partition 19 is provided within the housing 15 whereby two compartments, A and B are formed. A second housing 20 having a wheel or drum 21 rotatably mounted therein, is inserted within the compartment A of the housing 15.

The drum 21 is divided into compartments around the circumference thereof by rods 22. By observing Figures 2 and 3, it may be seen that four sections are provided in the drum shown, each section being capable of accommodating thirty-six articles. It is to be noted that the diameter of the drum may be increased or decreased to vary the number of compartments and also two or more sections or rows of compartments may be employed. One flange 21' of the drum 21 is provided with gear teeth 23 whereby a worm gear 24 may be engaged therewith, said worm gear being suitably connected to a motor 25. A semi-circular supporting means 26 is disposed about the lower half of the drum 21 whereby said means retains articles within the compartments of said drum. By observing Figure 8, it will be seen that the member 26 is provided with projections 27, said projections engaging the articles C thereby reducing friction to a minimum.

For effecting the release of the articles C from

the compartments of the drum successively and transversely thereof, staggered openings 28 are provided in the semi-circular retaining means 26, below the drum 21. By observing Figure 7 it may be seen that these openings 28 are so arranged as to release but one article with the insertion of but one coin as will hereinafter be explained.

There being four sections of compartments in the drum 21, a common discharge chute 29 (Figs. 2 and 5) is provided. This discharge chute communicates with the openings 28 at one end and is reduced at 30 at its other end. This end 30 communicates with a second discharge chute 31 mounted in the vertical partition 19, this second chute 31 finally communicating with an outlet chute 32 provided in door 18 (Figs. 1 and 2). Thus, as an article is released through the openings 28 into the chute 29 gravity will carry said article into the chute 31 and finally into the outlet 32 thereby allowing the purchaser to receive the same.

For actuating the drum 21 through the medium of the motor 25, worm gear 24 and gear teeth 23, coin actuated mechanism is provided. A coin opening 34 is provided in the side wall of the housing 15, said opening communicating with a coin chute 35 (Figs. 4 and 6). A coin receptacle 36 is disposed at the termination of the chute 35 on the false bottom 16 within the housing 15. Pivoted within the outlet chute 31 is a trap door 37 (Figures 2 and 6). A control fork 38 is suitably pivoted to a brace member 39 and is pivotally connected to the trap door 37 by a rod 40. The lower prong 41 of the fork 38 is of suitable length whereby said prong extends within the coin chute 35 to prohibit passage of coin therethrough. Thus, it will be seen that at such time as a coin D is inserted into the chute it will be held in the position shown in Figure 6. Further, the coin will close the contacts of a spring switch 42 through the medium of a pivoted arm 43 which switch controls the motor 25. From the foregoing it may be seen that at the insertion of a coin into the chute 35, the forked member 38 will retain the coin in a position to close contact to the motor 25 allowing said motor to actuate the drum 21 through the medium of the worm gear 24 and teeth 23 thereby revolving said drum in a counterclockwise direction.

At such time as the drum revolves sufficiently to effect the release of an article C into the common discharge chute 29 thence into the chute 31, the passage of the article through this chute 31 will strike the pivoted trap door 37, effecting the withdrawal of the prong 41 and the subsequent release of the coin D in the chute 35. At such time the member 43 will regain its horizontal position by virtue of the pressure exerted thereon by one of the spring contacts of the switch 42 whereby these contacts will be opened to break the circuit to the motor. If more than one coin is inserted into the chute at any one time, it will be necessary for the purchaser to remove each article after the delivery thereof. If this is not done the second article delivered will remain under the trap door keeping the same in its raised position. With the trap in this position the other prong 44 of the fork 38 will prohibit passage of the coin sufficiently to actuate the member 43. Thus, it will be seen that a safety device is provided which positively eliminates any "jamming" of the machine through the insertion of two or more coins at any one time.

During the actuation of the machine at all times a white light 45 is burning. The light rays pass through an opening 46 in the door 18. If desired, advertising indicia of the commodity being dispensed from the machine may be disposed within this opening 46.

At such time as the drum 21 has made one complete revolution thereby emptying all compartments in all sections, an audible and visible signal is provided to notify the merchant that the dispenser is empty. For accomplishing this, a pivoted spring actuated toggle lever 47 is provided near the upper end of the inner housing 20. An adjustable clamp 48 is secured to the flange of the drum 21 opposite the flange carrying the gear teeth. This clamp is so arranged as to strike the lever 47 which lever is suitably secured to a toggle switch 49. At the time the drum is refilled the clamp is positioned immediately in back of the lever 47 and so arranged as to leave two or more articles remaining in the drum at the time the switch is actuated. At such time as a complete revolution of the drum 21 is made the clamp 48 will strike the lever 47 thereby actuating the toggle switch 49. The actuation of this switch is so arranged as to completely cut out the circuit to the motor 25 and the light 45 and complete a circuit to a red lamp 50 positioned in the wall 19 and being visible through the door 18 and to a buzzer signal 51, also positioned in the wall. A solenoid 52 actuates a lever 53 which lever serves to close the coin chute 35 (Figs. 4 and 10) at such time as the circuit is closed to the red lamp 50 and the buzzer 51 thereby prohibiting insertion of coins after the dispenser is empty. To prevent dispension of bottles during the refilling process of the drum 21, a slidable trap door 55 is provided. This door is actuated by a lever 56 and is retained in its upward position by a cross-member 57, bolt 58 and slot 59 in said cross-member.

In Figure 11 is shown a wiring diagram in ordinary operation. One side of the circuit E is connected to the buzzer 51, red lamp 50, white lamp 45 and motor 25 through the medium of wires F, G and H respectively. The other side of the circuit I is connected to the toggle switch 49. One side of the toggle switch being connected to the motor and the white lamp by wires J and K respectively. The other side of the toggle switch is connected to the red lamp and buzzer by wires L and M respectively. The switch 42 is inserted in the line J. Thus it will be seen that with the switch in the position shown in Figure 11 a circuit is closed to the white lamp 45 and the motor 25 through the toggle switch 49. At such time as the members 47 and 48 change the position of the toggle switch, the circuit to the lamp 45 and the motor 25 is opened while the circuit to the buzzer 51 and lamp 50 is closed.

It is to be noted that a suitable refrigerating unit (not shown) is disposed within the inner housing 20 below the drum 21 and retaining member 29 whereby said articles C are cooled, when said articles are of the cold drink type.

From the foregoing it will be seen that a device simple in construction, cheap in manufacture and positive in action may be had. Also a device of this type accommodating a maximum number of articles in a minimum amount of space.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed within the scope and meaning of the appended claims is also

considered to be within the spirit and intent of the invention.

What is claimed is:

In a vending machine, a rotatable body carrying relatively spaced and parallel flanges defining circular, parallel merchandise chambers, rods extending transversely through said flanges adjacent their inner and outer peripheries to define radial merchandise compartments, a semi-circular, stationary member snugly embracing the lower half of said flanges and having stepped openings therein progressively alined with said merchandise chambers and through which articles gravitate successively from said compartments and progressively from said chambers as said body is rotated, and a common discharge chute for said openings for delivering merchandise from said machine.

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