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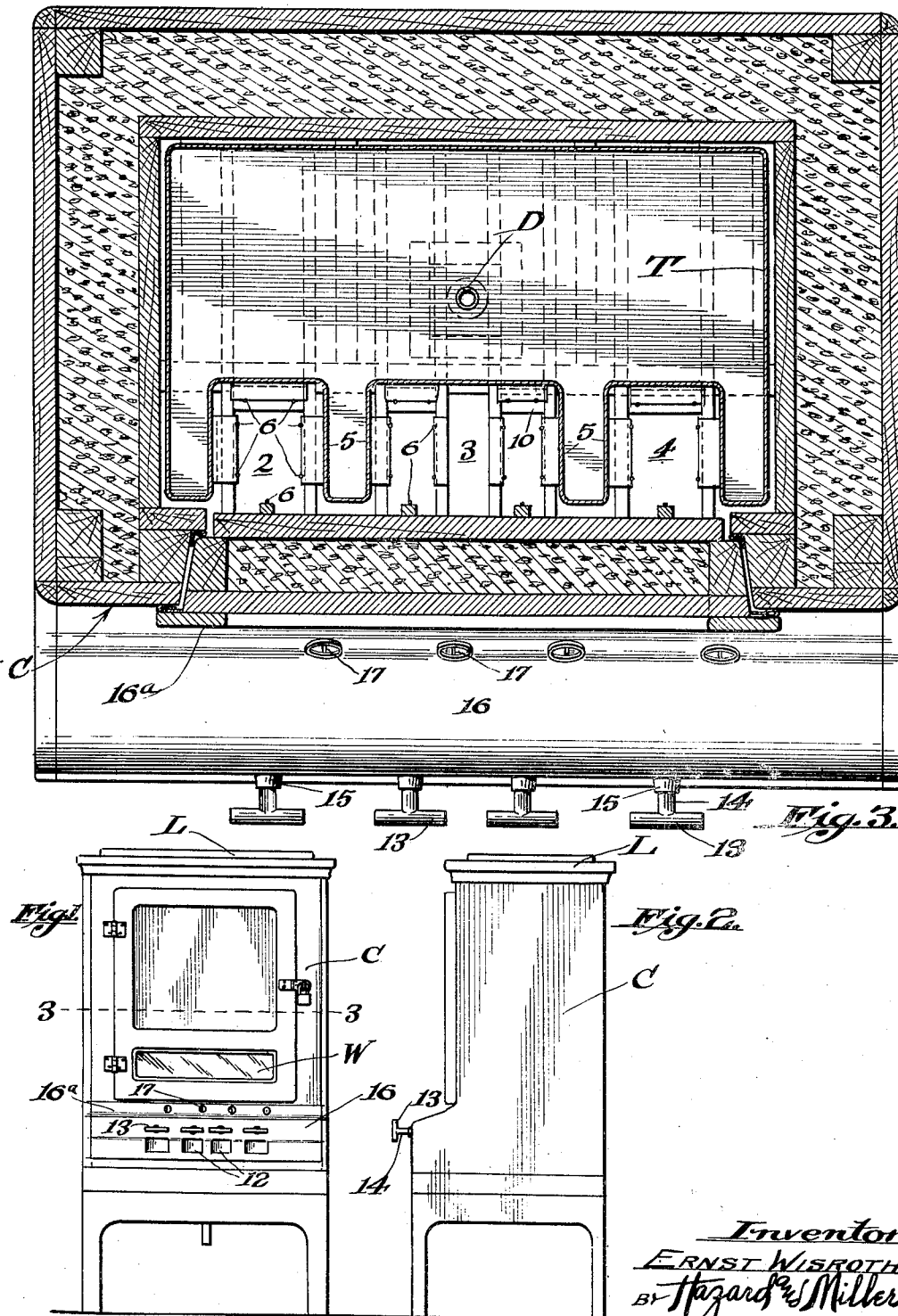
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E. WISROTH

COIN CONTROLLED VENDING MACHINE

Filed Dec. 22, 1922

5 Sheets-Sheet 1



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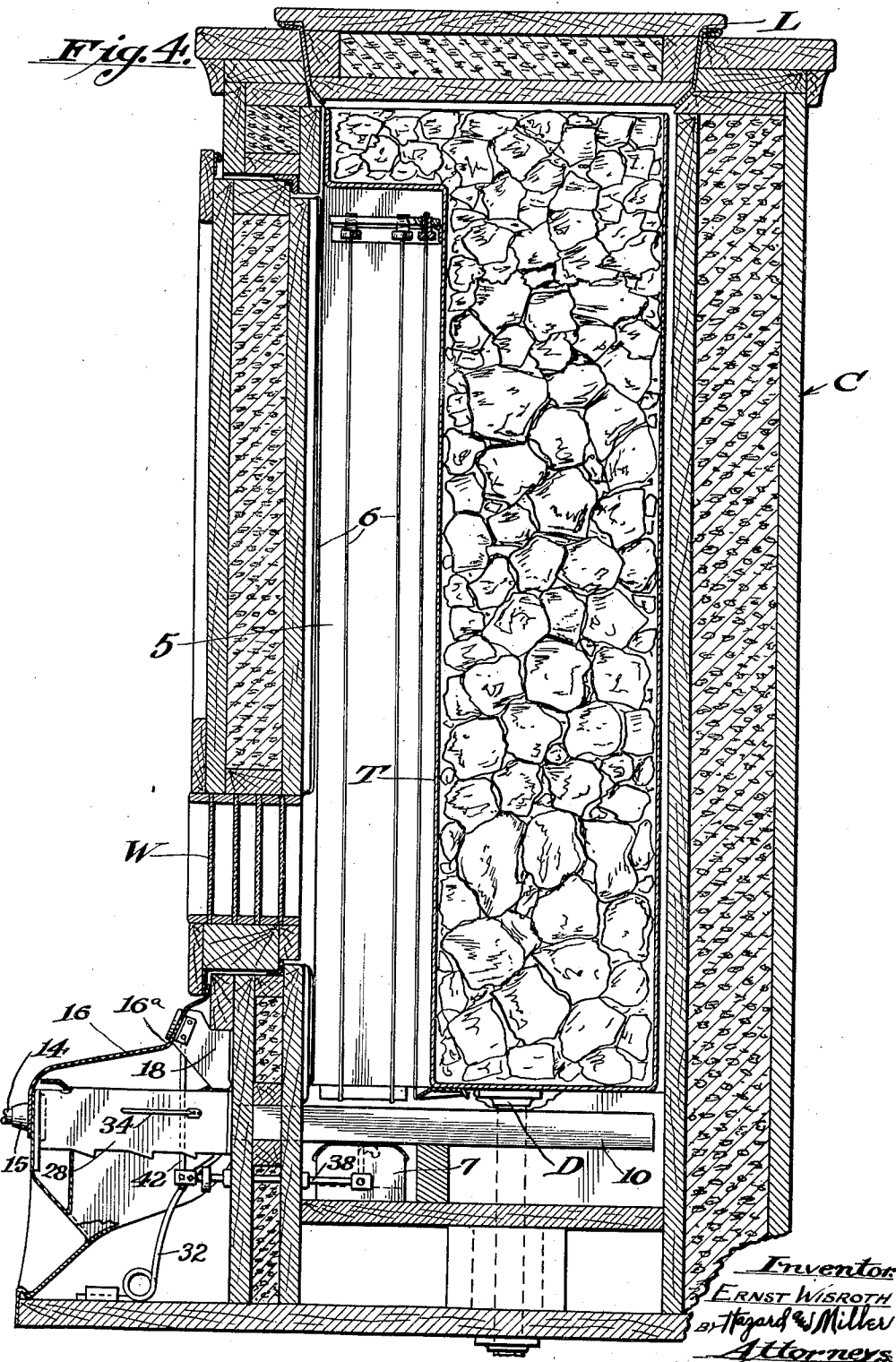
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June 1 , 1926.

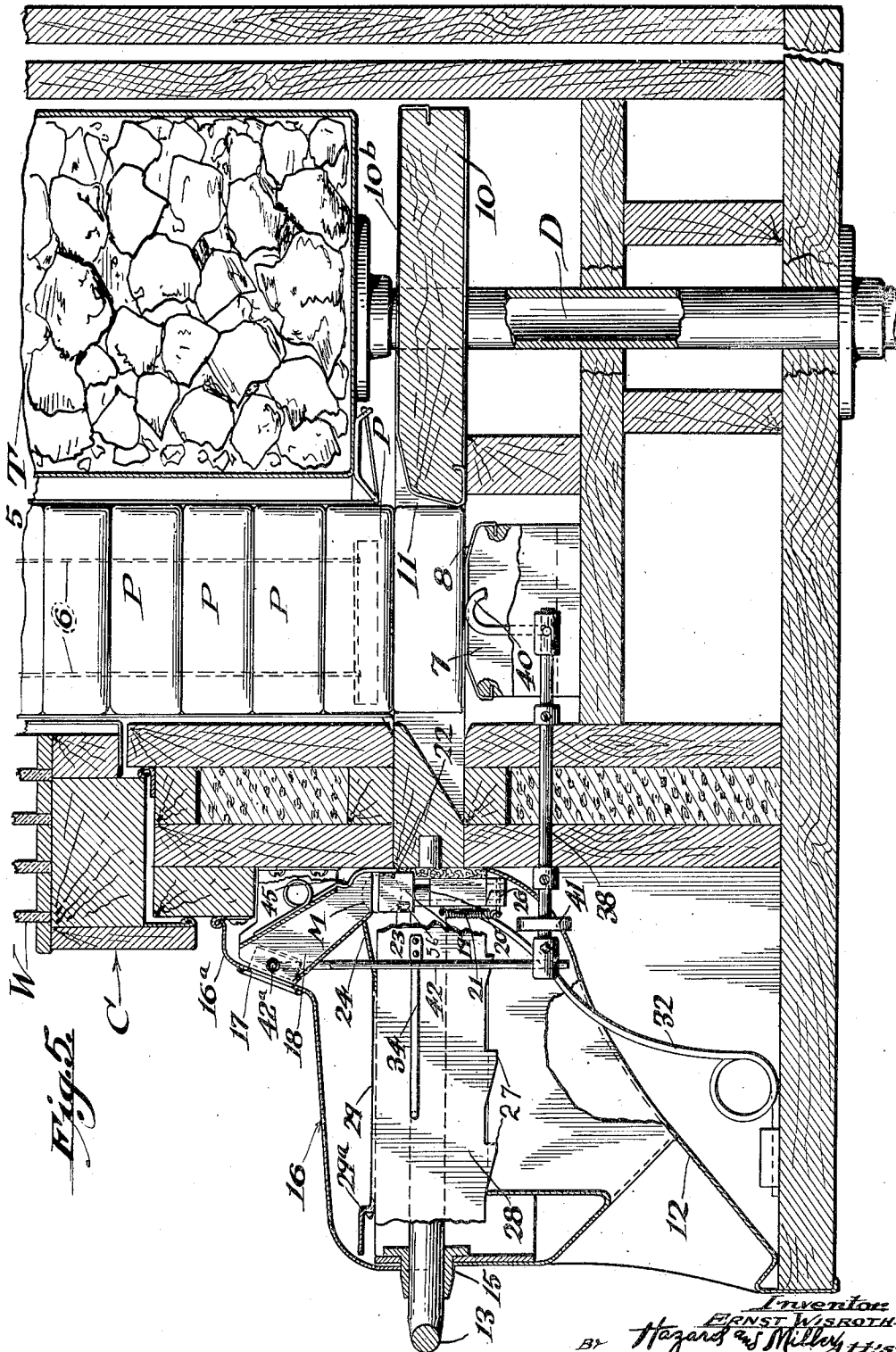
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COIN CONTROLLED VENDING MACHINE

Filed Dec. 22, 1922

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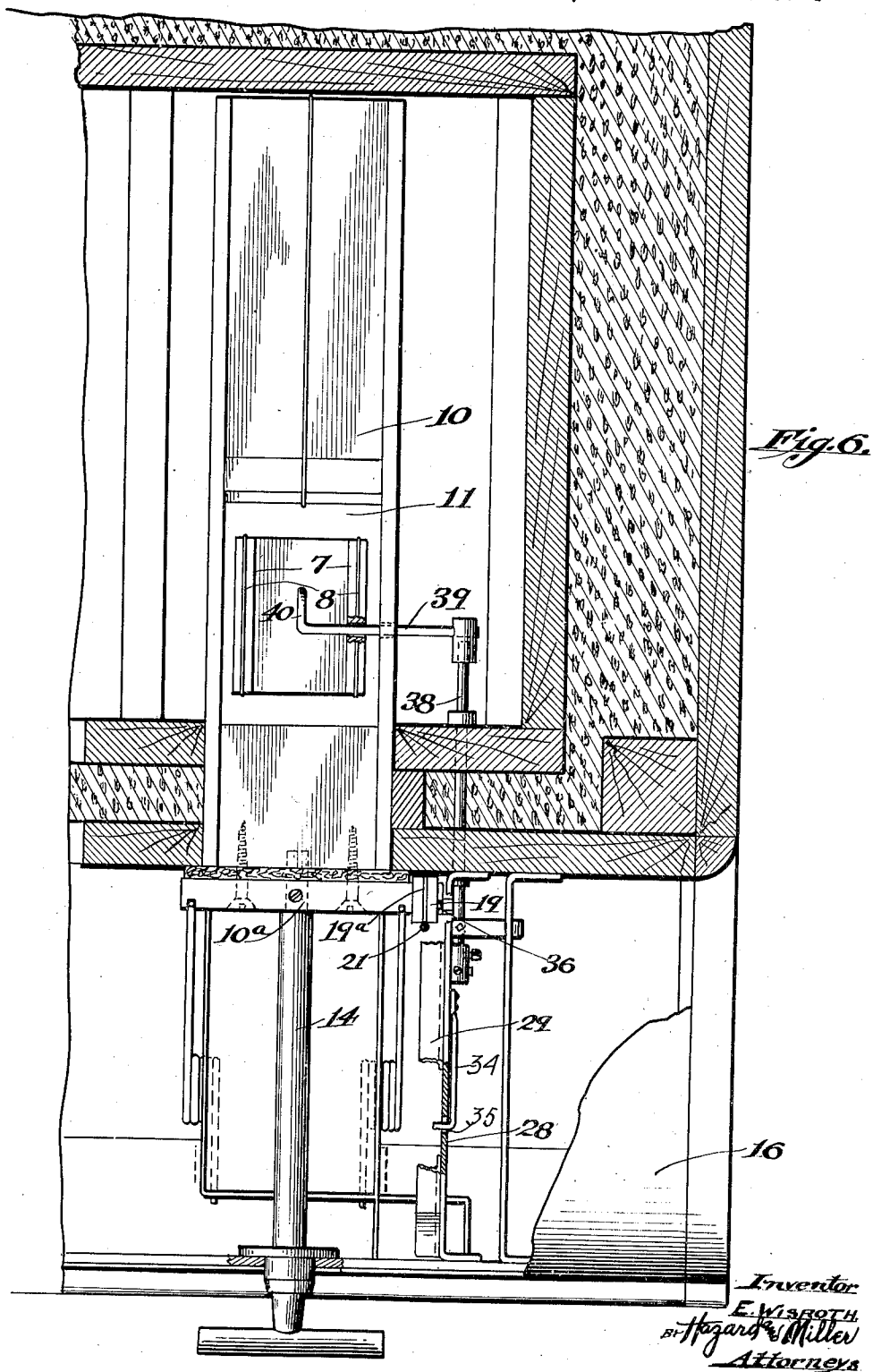
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1,586,936

COIN CONTROLLED VENDING MACHINE

Filed Dec. 22, 1922

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June 1, 1926.

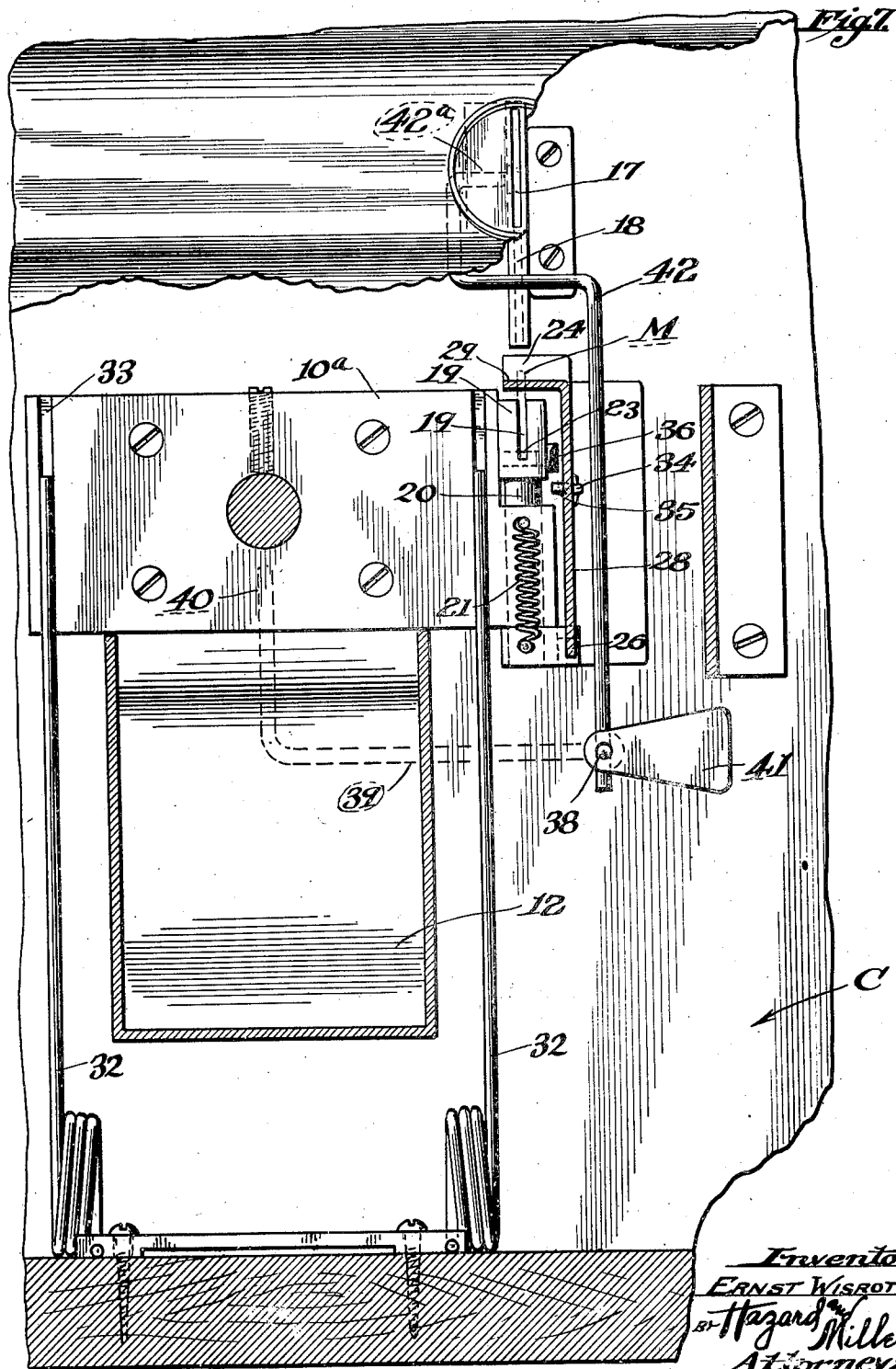
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COIN CONTROLLED VENDING MACHINE

Filed Dec. 22, 1922

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Patented June 1, 1926.

1,586,936

UNITED STATES PATENT OFFICE.

ERNST WISROTH, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO REGINALD D. RAPHAEL, OF LOS ANGELES COUNTY, CALIFORNIA.

COIN-CONTROLLED VENDING MACHINE.

Application filed December 22, 1922. Serial No. 608,486.

The invention relates to coin controlled vending machines and more particularly to a refrigerator for vending frozen confections.

5 An object of the invention is to provide means for successively issuing packages from one or another of a plurality of magazine chambers, and an object is to provide a mechanism controlled by the presence of a coin or token, and which mechanism is operable to withdraw a package and discharge the same. An object is to provide a coin controlled device for preventing the repeat operation of the device on the insertion of a single token, coin or slug.

10 Another object is to provide an automatically acting device for locking the coin slot of the machine against the introduction of further coins or tokens when the magazine chambers of the machine are empty.

15 Other objects and advantages will be made manifest in the following specification of an embodiment of the invention illustrated in the accompanying drawings, wherein

20 Figure 1 is a front elevation of the machine.

Fig. 2 is an end elevation of the same.

25 Fig. 3 is a horizontal section on line 3—3 of Fig. 1, the view being on a larger scale.

30 Fig. 4 is a vertical section from front to rear of the machine showing elements of the mechanism in side elevation and showing the structure of the refrigerator walls in section.

35 Fig. 5 is a detail vertical section of the coin controlled, issuing mechanism.

40 Fig. 6 is a horizontal section showing in plan the issuing slide of one of the magazines and illustrating the slide locking mechanism.

45 Fig. 7 is a vertical section longitudinally and showing in detail the front plate of one of the sides and its controlling mechanism and showing in detail the package controlled coin chute bolt.

50 The invention is shown as embodying a suitable form of refrigerator cabinet or box having a double walled construction, the double walls being rendered non conductive of heat to a suitable degree so as to be economical in the use of a cooling medium, such as ice, which may be introduced in a cold water or ice tank T adapted to be disposed within the chamber of the cabinet C,

which is provided with a removable top or lid L for the insertion of ice and for the removal of the ice water tank T, which latter is shown as provided with a drain pipe D extending down to the bottom of the refrigerator.

60 The front of the refrigerator cabinet is provided with a window W permitting a view into the front interior portion of the cabinet which is provided with a plurality of vertical magazines 2, 3 and 4 which are shown as relatively separated from each other by forwardly projecting partition walls 5 forming a portion of the front wall of the ice water tank T and thus providing for an effective cooling surface to obtain the desirable low degree of temperature in the magazine chambers. The chambers are each provided with a vertical system of parallel guide wires 6 which are arranged in suitable manner to form a shaft in each magazine for a stack of blocks or packages P of material to be dispensed from the machine, and which may consist, for instance, of packages of frozen edibles.

80 At the bottom of the magazines 2, 3 and 4 are provided parallel rearwardly extending tracks 7 each of which is preferably provided with a track wire 8 upon which the frozen package at the bottom of the stack in each magazine is adapted to rest. The wire guides 6 and the track wires 8 are utilized since they overcome the tendency of the refrigerated bars or packages to adhere or freeze to plane surfaces when such surfaces are employed and, therefore, in the present machine this freezing is overcome so that the packages are each substantially free and may be readily withdrawn.

85 At the bottom of each magazine chamber and movable horizontally forwardly and rearwardly above the track wires 8 there is provided a discharge carriage or slide 10. Each slide 10 is provided with a package receiving pocket 11 shown as having a depth and width and length substantially corresponding to the similar dimensions of a package so that when the slide of a magazine is in the retracted position, Fig. 5, the lowermost package of a stack in the magazine will freely drop into the package pocket 11 of the slide and be in readiness to be discharged from the slide onto a discharge apron 12, of which one is arranged in the front of the machine for each maga- 110

zine and slide. For operating the slides each is provided with a respective handle 13 having a rearwardly extending shank 14 suitably connected to the front end of its slide 10 and being guided in a bushing 15 provided in the front forwardly projecting coin box cover 16 of the machine.

The coin box cover 16 is provided with an upwardly curved portion 16^a and this has a series of coin receiving mouths 17 leading into downwardly and rearwardly inclined coin chutes 18 each of which terminates just above the head 19 of a plunger 20 which is slidably guided in a transverse front piece 10^a at the front of the end of the respective slide 10. It is understood that the coin mechanism and the several slides are each substantially identical with each other and, therefore, the description of one of the slides will suffice for the entire series.

The plunger 20 is normally pulled to an uppermost position as by a contractile spring 21, one end of which is secured to the plunger and the other to the slide front piece 10^a. The upper end of the plunger head 19 is slotted at 19^a so as to receive a coin as it drops from the coin chute 18. The coin receiving head 19 is provided with means for retaining the coin in position, and such means is shown as including a rear transverse pin 22 and a front transverse pin 23 so disposed as to support an inserted coin, token or check in a predetermined position and to so hold the coin that as the handle 13 of the slide, respective to the magazine in the proper coin slot of which a coin has been inserted, is pulled forwardly, the coin in the coin head 19 will be brought forwardly and will impinge against a cam plate 24 inclining upwardly and rearwardly and toward the lower end of the coin chute 18. This cam plate, therefore, becomes effective through the medium of the interposed coin M to depress the plunger 20 as the slide is pulled forwardly by the handle 13, with the result that a stop device 26, which is fixed to the lower end of the plunger, Fig. 5, will be forced down sufficiently to clear a contiguous lock lug or tooth 27 which is provided on a fixed portion of the coin box, as for instance at the lower edge of side wall 28, having a horizontally turned top flange 29 at the rear end of which the cam plate 24 is provided, Fig. 7. From this it will be seen that in the absence of a coupling element, such as a coin or token, in the plunger head 19 it will be impossible to pull the package issuing slide forwardly because of the interruption of this movement by the lock shoulder 27 positioned in the path of movement of the stop 26 which is in its normal uppermost position as determined by the plunger spring 21.

When the slide 10 is pulled forwardly at

the same time that a coin is in the coin or plunger head 19, then the slide becomes released so as to clear the lock lug 27 and the slide may be pulled forwardly, at which time the coin or device M in the plunger head 19 will be held down under the overhanging flange 29 until the slide has been pulled to its foremost position at which the coin or device M will be released at the forward end 29^a of the coin depressing flange 29. As soon as the coin passes forwardly of the front end 29^a of the flange, the coin is adapted to be automatically ejected by the upward movement of the coin receiving plunger 19 under the action of the spring 21, whereupon the coin is free to fall into the coin receiving box. When the slide 10 is in its foremost position the package pocket 11 thereof passes over the open upper end of the package discharge apron 12 and, therefore, the package in the pocket 11 is discharged and issued from the machine.

The several package slides are each provided with means for automatically returning the slide from the forward position to the rearmost position, and such means is shown as including a pair of substantial spring arms 32 extending upwardly and engaging in guide slots 33 provided therefor in the cross piece 10^a of each slide. The slides 10 have a rear body structure presenting a top surface or plane 10^b that is designed to move forwardly and register with the lower face of the lowermost package in the magazine next resting upon the package in the pocket 11 of the slide so that as the slide is pulled forwardly its package supporting top plate or surface 10^b passes under the stack of packages in the respective magazines and the stack is prevented from descending movement while the package in the pocket 11 is being pulled forwardly. As soon as a slide, is returned by its spring device or other means, as the empty pocket passes under the lowermost package of a stack in the magazine, this package will drop readily into the empty slide pocket and this will be again replenished in readiness for a further action.

It is desirable to provide means for preventing the return of a partially advanced slide 10 from such a position that the included package in the pocket may be discharged and before the ejection of the coin or device M from the coin holding head 19. In other words, it is desirable to prevent the repeated operation of a slide and discharge of packages P while and after only a single coin has been inserted in the machine. To that end means are employed consisting of a yieldable finger 34 fixed at its rear end to wall 28 and having an inturned end 35, Fig. 7, which is designed to cooperate with a stop dog 36 which, for convenience, may be provided on one end

of the coin positioning pin 23 in the coin holding head 19. The stop dog 36 has a forwardly inclined cam face, Figures 5 and 7, and when the slide is pulled forwardly and the head 19 is depressed through the medium of the cam 24 and an inserted coin M, the stop dog 36 will be shifted downwardly into the horizontal plane of the finger end 35 which is positioned at a suitable location in the wall 28. As the dog 36 is pulled forwardly of the stop finger 35, the latter is sprung outwardly over the inclined face of the dog permitting the free forward movement of a slide while the coin M is in effective position beneath the coin depressing flange 29. After the stop dog 36 has been pulled forwardly of the finger end 35, this latter snaps inwardly behind the dog 36 and prevents the return movement of the carriage and therefore eliminates possibility of reloading the carriage by pushing it rearwardly while a coin is still retained under the flange 29.

To completely restore a slide it must be pulled forwardly until an inserted coin is ejected and this, therefore, releases the coin head 19 which may move upwardly sufficiently to bring the stop dog 36 above the inwardly projected stop finger end 35 and thereafter the springs 32 become effective to thrust the slide 10 rearwardly.

Means are also provided for automatically locking the entrance to the coin slot 18 in the event that a respective magazine of the machine becomes empty. Such an automatic coin slot closure is shown as including a rock shaft 38 extending from front to rear in the machine in a position somewhat below the plane of the slides 10. There is a rock shaft for each slide and the rear end of each rock shaft is provided with a transversely extending arm 39 having an upturned horn 40 adapted to swing up into the respective package pocket 11 in a contiguous slide 10 when there is no package in the pocket. The weight of packages or of a single package is sufficient to press down the horn arm 39 and rock the shaft in such position as to overcome the overbalancing weight 41 which is secured to the rock shaft 38 and has the function of swinging a locking arm 42 secured to the front end of the rock shaft 38 in such direction as to bring a bolt finger 42^a into and across a coin slot 17, Fig. 7. Thus after the last package has been issued from a magazine and the pocket 11 of a slide 10 is emptied, the horn arm 39 is adapted to swing upwardly under action of the overbalancing weight 41 and the rock shaft 38 will be turned slightly so as to throw the bolt 42^a into and across the receiving end of a coin slot 18 in a position just in the rear of the coin receiving mouth 17.

Means are provided for holding a surplus coin or coins in the coin slots 18 and permitting only the leading coin to enter the coin receiving plunger head. Such a means is shown as including, for each coin slot 18, a simple spring finger 45 attached to the rear of the coin slot and extending downwardly so as to be engaged by the plunger head 19 when this is in the rear position, Fig. 5. After a single or first coin has been received in the plunger head and the slide is advanced with the plunger, then the guard finger 45 springs forwardly sufficiently to encounter a possible second coin in the coin slot and prevents this second or following coin from falling from the slot as the plunger head is moved forwardly.

Further embodiments, modifications and changes may be resorted to within the spirit of the invention as here claimed.

What is claimed is:

1. In a coin controlled vending machine, a magazine adapted to receive packages to be dispensed, a slide disposed at the bottom of the magazine and having a package receiving pocket, a coin slot, a coin receiving plunger mounted on the slide and normally positioned below the discharge end of said slot, means for preventing forward movement of the package slide in absence of a coin in the coin receiving plunger, means operative through the medium of a coin in said plunger to depress the latter and release the package slide so that a package may be dispensed and means operative after a package is dispensed on the upward movement of the plunger to dislodge the coin.

2. In a coin controlled vending machine, a magazine adapted to receive packages to be dispensed, a slide disposed at the bottom of the magazine and having a package receiving pocket, a coin slot, a coin receiving plunger mounted on the slide and normally positioned below the discharge end of said slot, means for preventing forward movement of the package slide in absence of a coin in the coin receiving plunger, means operative through the medium of a coin in said plunger to depress the latter and release the package slide so that a package may be dispensed, said means including a cam arranged so as to be engaged by an inserted coin upon the initial forward movement of the slide and means operative after a package is dispensed on the upward movement of the plunger to dislodge the coin.

3. In a coin controlled vending machine, a magazine adapted to receive packages to be dispensed, a slide disposed at the bottom of the magazine and having a package receiving pocket, a coin slot, a coin receiving plunger mounted on the slide and normally positioned below the discharge end of said slot, means for preventing forward movement of the package slide in absence of a

coin in the coin receiving plunger, means operative through the medium of a coin in said plunger to depress the latter and release the package slide so that a package may be dispensed, and means for preventing the return of the advanced slide without the ejection of the controlling coin comprising a stop dog on the plunger engaging a stop finger when the plunger is depressed.

10 4. In a coin controlled vending machine, a magazine adapted to receive packages to be dispensed, a slide disposed at the bottom of the magazine and having a package receiving pocket, a coin slot, a coin receiving
15 plunger mounted on the slide and normally positioned below the discharge end of said slot, means for preventing forward movement of the package slide in absence of a coin in the coin receiving plunger, means
20 operative through the medium of a coin in said plunger to depress the latter and release the package slide so that a package may be dispensed, means for preventing the
25 ejection of the advanced slide without the return of the advanced slide without the ejection of the controlling coin, said last named means including a stop dog carried by the slide, a yieldable finger engageable by, said dog in its forward movement, said
30 finger adapted to yield as the slide advances and being adapted to engage the said dog on attempted rear movement before the coin is ejected, and means for holding an inserted coin in such position as to retain

the said dog in a line to be engaged by the stop finger.

35 5. In a coin-controlled vending machine, a coin slot, a coin receiving plunger mounted on a sliding element normally positioned below the discharge end of the slot, a stop device on the plunger adapted to contact
40 with a stationary lock lug and prevent movement of the sliding element in the absence of a coin in the coin receiving plunger, a cam to engage the coin on the movement of the sliding element and depress the
45 plunger, thereby causing the stop device to clear the lock lug, a continuous cam surface to retain the plunger depressed on further movement of the sliding element, a spring
50 attached to the sliding element and engaging the plunger to move it upward at the end of the sliding movement and discharge the coin.

6. A coin-controlled vending machine as claimed in claim 5 having in addition means
55 to prevent reverse movement of the slide while a coin is in the coin receiving plunger, comprising a dog on the plunger, and fixed spring fingers allowing forward movement of the dog with the plunger and slide but
60 preventing backward movement thereof until the coin is discharged and the plunger elevated.

In testimony whereof I have signed my name to this specification.

ERNST WISROTH.