No. 861,184. PATENTED JULY 23, 1907.

A. JAEGER.

VENDING MACHINE.

APPLICATION FILED SEPT. 29, 1906.

2 SHEETS—SHEET 1.

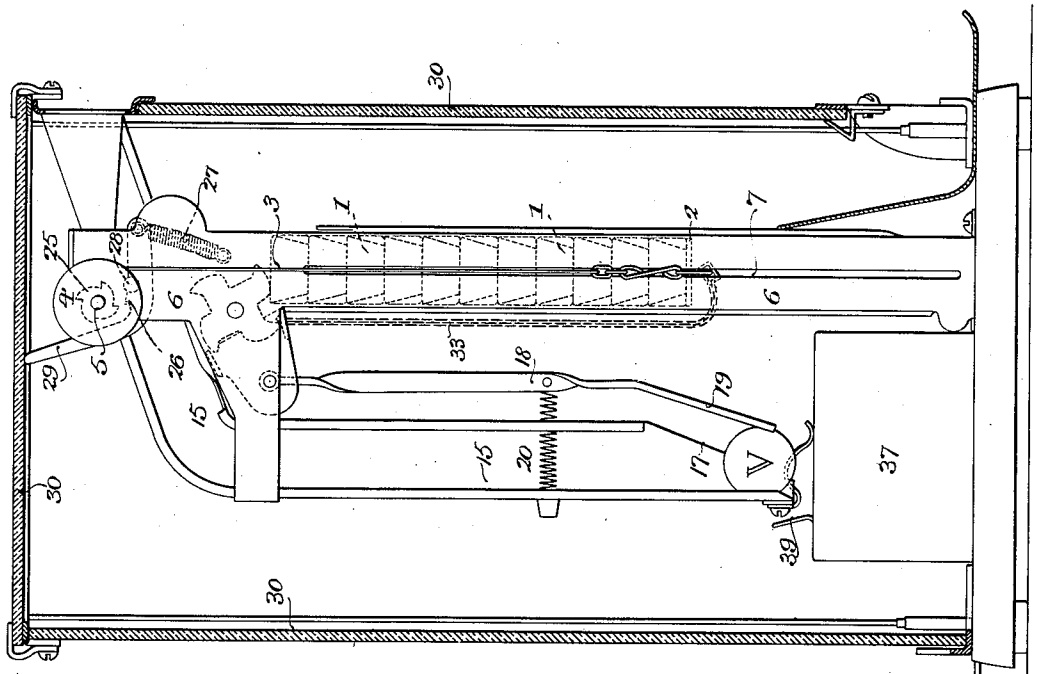


Fig. 2.

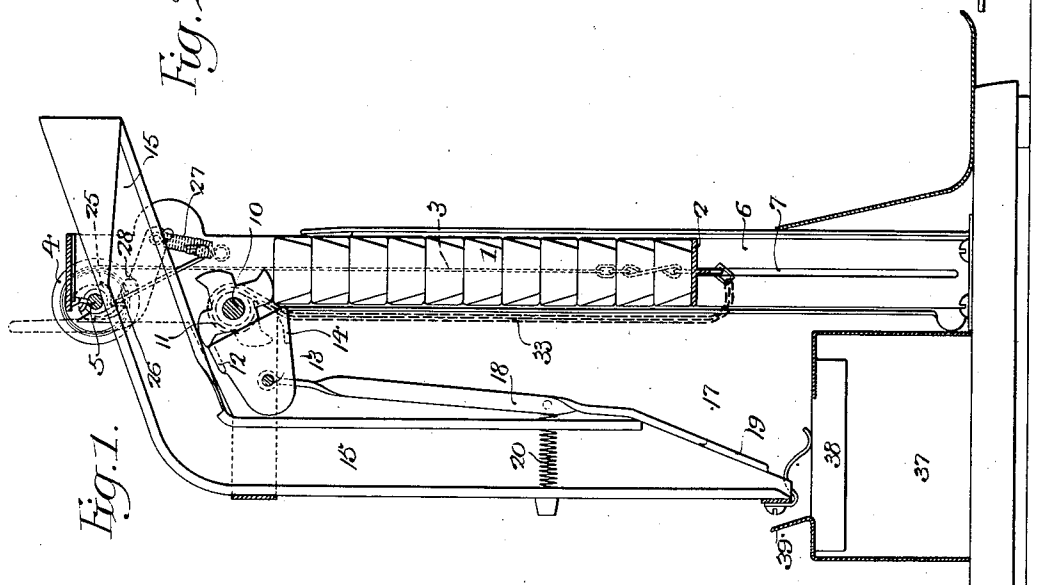


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 5.

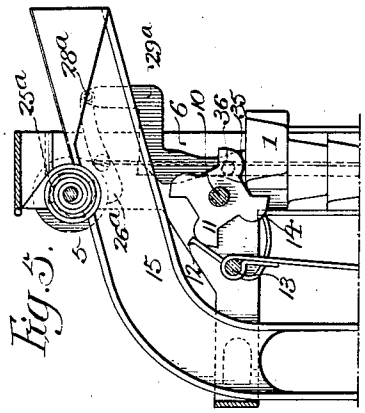


Fig. 4.

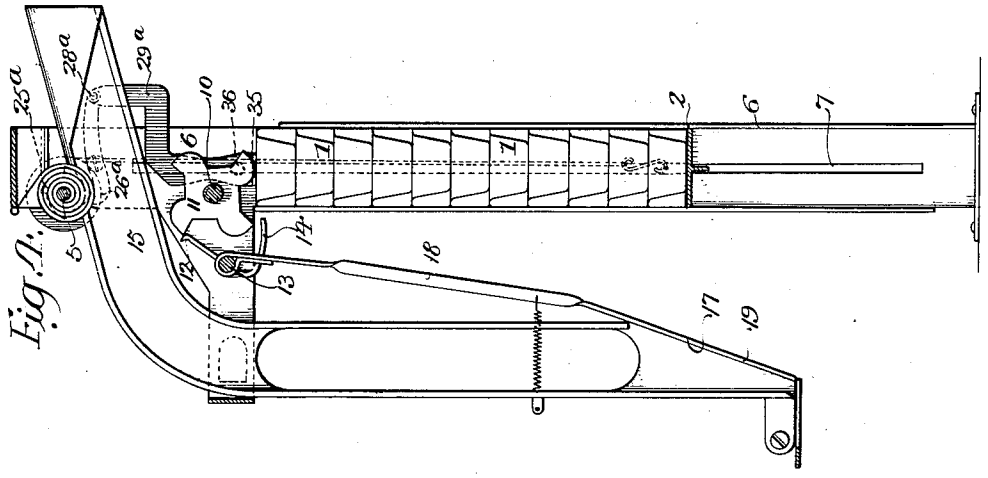
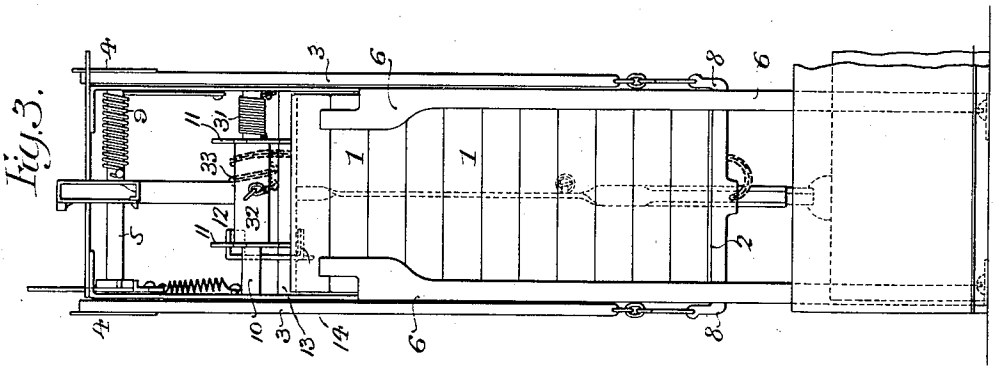


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALEXANDER JAEGER, OF PHILADELPHIA, PENNSYLVANIA.

VENDING-MACHINE.

No. 861,184. Specification of Letters Patent. Patented July 23, 1907.

Original application filed September 6, 1905, Serial No. 277,220. Divided and this application filed September 29, 1906. Serial No. 336,720.

To all whom it may concern:

Be it known that I, ALEXANDER JAEGER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Vending-Machines, (being a division of my application for patent filed September 6, 1905, Serial No. 277,220,) of which the following is a specification.

My invention relates to coin actuated vending apparatus of the type shown and described in the patent of Otto Jaeger, dated August 2, 1904, and numbered 766,445, as well as in my former application for patent, filed Sept. 6, 1905, Serial No. 277,220.

The object of my present invention is to facilitate the discharge of the particles to be vended, to provide a construction that will take care of vendible units whose general dimensions are the same, but which may vary in size a slight degree and hence are not readily vended in structures wherein the feeding, discharge and actuating mechanisms are based upon certain proportional dimensions, and to provide special means for holding the platform carrying the vendible units, and for automatically releasing the same preparatory to placing the machine in condition for use.

My invention is fully shown in the accompanying drawings, in which:

Figure 1, is a side elevation partly in section of a vending apparatus made in accordance with my invention, showing it in the inactive position; Fig. 2, is a similar view, showing the apparatus just after a coin has been inserted which action has placed the mechanism in the position preliminary to the ejection of one of the vendible units; Fig. 3, is a front elevation of the apparatus; Fig. 4, is a sectional view of a modified form of apparatus embodying my invention, showing the same in the inactive position, and Fig. 5, is a view of part of the same, showing the unit being ejected.

The general form of vending apparatus to which my improvements have been applied is shown in the patent and pending application above referred to, and hence it will be unnecessary to describe the same at length herein.

The articles 1, to be vended, are carried by a platform 2 supported by bands or cords 3 suspended from wheels or drums 4 on a shaft 5, which shaft is carried at the top of a suitable frame 6. The sides of the frame are slotted at 7 for the passage of end projections 8 of the platform 2, to which projections said bands 3 are connected. The shaft 5 carries a torsion spring 9 which is wound by the depression of the platform 2, thereby storing in said spring a supply of power having a constant tendency to raise said platform.

Journaled in the frame 6 and disposed below the shaft 5 is a shaft 10 carrying a pair of escapement wheels 11 held against turning by means of a pawl 12; the upper vendible unit being engaged by said escapement wheels. The pawl 12 is mounted on a rock-shaft 13 and is provided with an extension 14 forming a retaining member in engagement with said teeth which serves to prevent the escapement wheels moving more than one tooth, or a quarter revolution at a time.

A coin chute 15 is provided, having the usual means for ejecting improper coins or slugs, and the lower end of this chute is beveled at 17. Extending from the pawl 12 is an arm 18 having an angular portion 19 lying against the beveled lower end of the coin chute and held in such position by means of a spring 20. Upon passing a coin into said chute it drops to the lower end, and in leaving the chute it pushes the projection 19 out of the way. This moves the pawl 12 correspondingly and causes it to release the ratchet wheel, whereupon the spring 9, whose constant tendency is to raise the platform 2 carrying the vendible units, exerts its force and causes the upper vendible unit to press against the rounded back of the teeth of the escapement wheels in engagement with said units, causing such wheel to turn; in some instances such turning movement being assisted, and permitting the succeeding teeth of the wheels to forcibly displace the uppermost unit from the pile. Further movement of these wheels is prevented by the extension 14 of the pawl 12 and the engagement of the succeeding vendible unit, and hence when the uppermost unit has been discharged, the escapement wheels will come to a point of rest against the succeeding unit.

In loading the machine, the articles are placed successively on the platform 2, which is depressed to permit such action and in order that it may be satisfactorily held during such loading, I provide the shaft 5 with a ratchet wheel 25, engaged by a pawl 26 which is held to such engagement by a spring 27 so as to normally hold said shaft against movement during this operation. This pawl is pivoted at 28 and has an extension 29 projecting above the frame 6. When the machine has been filled, the uppermost unit is in position to be displaced, but before this can be done, the pawl 26 must be disengaged from the ratchet wheel 25 to permit the turning of the shaft 5 and the lifting of the vendible units for the successive displacement of the same. For this purpose I provide that the top of the casing 30 inclosing the vending mechanism shall engage the extension 29 of the pawl 26 and thereby hold the latter away from the wheel 25, in the manner clearly shown in Fig. 2.

To positively move the escapement wheels 11 when the pawl 12 is released and to assist in the lifting of the platform carrying the vendible units, the shaft 10 is provided with a torsion spring 31, connected at one end to said shaft and at the opposite end to the frame 6.

Between the escapement wheels 11, a drum 32 is disposed, to which is attached a chain or cord 33, the opposite end being connected to the platform 2 supporting the vendible units. When this platform is depressed to load the machine, said spring 31 is wound up and as the escapement wheels are released in ejecting said vendible units, said spring turns the same with the shaft 10 and the chain is wound upon the drum. By this means positive movement of the escapement wheels is insured whenever they are released.

In the modified form of structure shown in Figs. 4 and 5, I have shown a different form of pawl for engagement with the ratchet wheel on the shaft 5 carrying the drums upon which the bands 3 are wound. In this form of apparatus embodying my invention, I provide said shaft 5 with a ratchet wheel 25^a engaged by a pawl 26^a which is weighted so as to normally hold said shaft against movement during the loading operation. This pawl has a lower extension 29^a pivoted at 28^a, with a side projection 35, and when the machine has been filled, the uppermost unit is in position to engage this projection and keep the pawl 26^a away from its ratchet wheel 25^a and thereby permit the successive ejectment of the vendible units. The extension 29^a is guided by a pin 36 lying in the slot 7 of the frame.

In Figs. 1, 2 and 3, I have shown a receptacle for the coins which has been designed to prevent the unauthorized removal of said coins. As usually constructed, these machines may be robbed by inverting them and then sliding the coins along the top until they are in line with the delivery chute, and then removing them. In the coin receptacle shown at 37, I have provided guards 38 within the receptacle which form a mouth through which it is practically impossible to withdraw any of the coins, and a projection 39 is mounted on top of the box to insure the proper positioning of the same.

In my improved construction no part of the apparatus depends upon the proportional dimensions of the articles to be vended, inasmuch as the operation of the mechanism, after it has been released or actuated by a coin, depends upon the force exerted by the means tending to raise the vendible units against and turn the escapement wheels; in one instance such action being reinforced by independent means acting to turn such escapement wheels.

I claim:

1. In a vending apparatus, the combination of a platform for the vendible units, a shaft, suspending means for carrying the platform arranged to be wound on said shaft, means carried by said shaft tending to raise the platform, means combined with said shaft for holding it against movement, and means for normally maintaining said shaft in a free position.

2. In a vending apparatus, the combination of a platform for the vendible units, a shaft from which said platform is suspended, means carried by said shaft tending to raise said platform, a ratchet wheel carried by said shaft, a pawl for engagement with said ratchet wheel, and means for normally holding said pawl in the released position.

3. In a vending apparatus, the combination of a platform for the vendible units, a shaft from which said platform is suspended, means tending to raise said platform, a ratchet wheel carried by said shaft, a pawl for engagement with said ratchet wheel, an extension carried by said pawl, and means for engaging said extension whereby the pawl may be held normally out of engagement with the ratchet wheel.

4. In a vending apparatus, the combination of a platform for the vendible units, a shaft from which said platform is suspended, a torsion spring carried by said shaft and tending to raise said platform, a ratchet wheel carried by said shaft, a pawl for engagement with said ratchet wheel, an extension carried by said pawl, and means for engaging said extension whereby the pawl may be held normally out of engagement with the ratchet wheel.

5. In a vending apparatus, the combination of a platform for vendible units, a shaft from which said platform is suspended, means for turning said shaft to raise the platform, ejecting means for the vendible units, a shaft carrying the same, a connection between said shaft and the platform, and means for turning said shaft when the escapement wheels are released.

6. In a vending apparatus, the combination of a platform for vendible units, a shaft from which said platform is suspended by flexible bands, means for turning said shaft to raise the platform, escapement wheels for ejecting the vendible units, a shaft carrying the same, a drum on said shaft, a connection between said drum and the platform, and means for turning said shaft and drum when the escapement wheels are released.

7. In a vending apparatus, the combination of a support for the vendible units, suspending means for said support, a shaft to which said suspending means are connected, means engaging said shaft and tending to turn the same so as to lift the support, locking means for said shaft normally held out of such engagement by the casing of the apparatus when the latter is ready for use, escapement wheels for ejecting the vendible units normally held against movement, releasing means for the same, and means combined with the escapement wheels for positively turning the same when released.

8. In a vending apparatus, the combination of a platform for the vendible units, flexible bands suspending said platform, a shaft having drums to which said bands are connected, a spring surrounding said shaft and tending to turn the same so as to lift the platform, a ratchet wheel carried by said shaft, a pawl for engagement therewith and normally held out of such engagement by the casing of the apparatus when the latter is ready for use, escapement wheels for ejecting the vendible units, releasing means for the same, a shaft carrying the same, a flexible connection between said shaft and the platform, and means carried by the escapement wheel shaft for positively turning the same as said wheels are released.

9. In a vending apparatus, the combination of a support for the vendible units, means tending to raise said support, escapement wheels in contact with the upper vendible unit, a ratchet wheel carried by the lifting means, a pawl for engagement with said ratchet wheel for holding the lifting means against movement while the machine is being fed, and means for disengaging said pawl from said ratchet wheel and keeping it in the inoperative position during the ejection of the vendible units.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ALEXANDER JAEGER.

Witnesses:
GEORGE T. HAINES,
HENRY MCDONNELL.