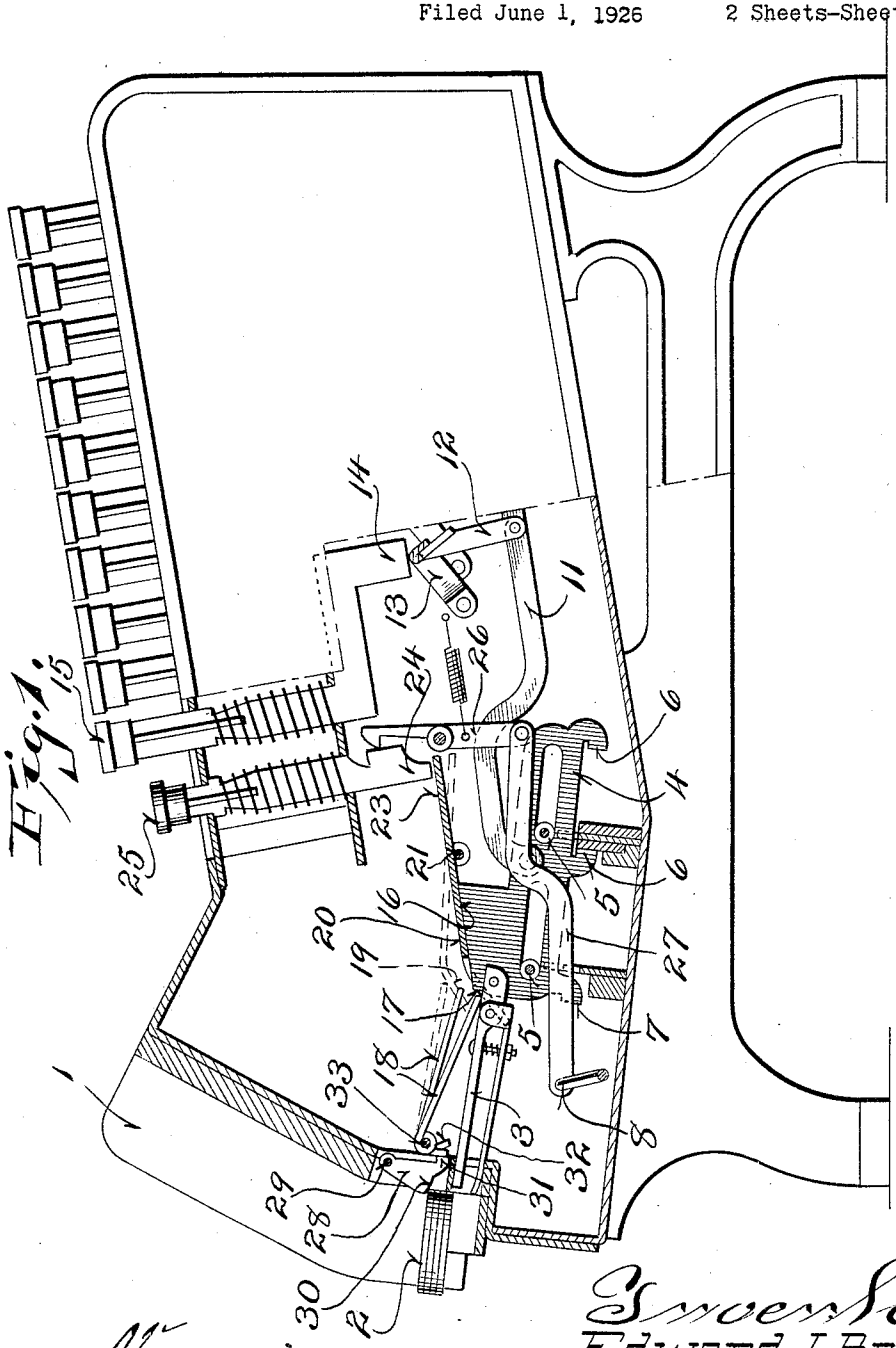
Jan. 5, 1932. E. J. BRANDT 1,839,946

COIN DELIVERY APPARATUS LOCKING MEANS

Filed June 1, 1926 2 Sheets-Sheet 1

Fig. 1.



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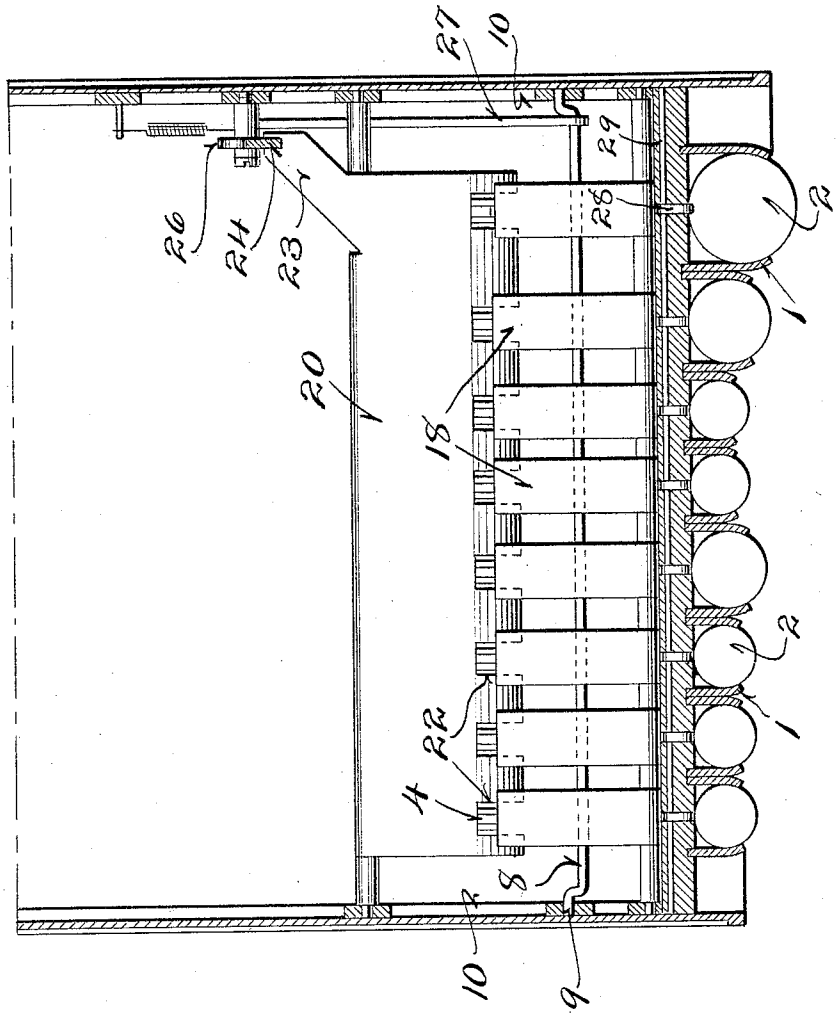


Fig. 2.

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Patented Jan. 5, 1932 1,839,946

UNITED STATES PATENT OFFICE

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COIN DELIVERY APPARATUS LOCKING MEANS

Application filed June 1, 1926. Serial No. 112,857.

This invention relates to coin delivery apparatus, and is particularly directed to a locking means therefor.

In coin delivery apparatus, as heretofore known, it has been the usual practice to provide a plurality of coin hoppers or chutes in which the supply of coins is stacked. These devices are also frequently provided with means for locking the dislodging plungers against action when the coin supply becomes nearly exhausted. Means have also been provided for latching the locking means out of operative position when desired. These machines, however, had the defect of permitting the latching means to retain the locking means out of operative position continuously after they had been once set, until manually released by the operator. Further, these machines had the defect of imposing a considerable lateral pressure against the coins which sometimes interferred with their free downward movement in the hoppers under the influence of gravity.

This invention is designed to overcome the defects noted above and objects of such invention are to provide a novel form of locking means for the plungers associated with the coin chutes in such a manner that the coins are permitted to freely move downwardly under the influence of gravity without being restricted by the locking means.

A further object of this invention is to provide a novel form of manually actuated latching means for holding the locking means out of operative position, and to provide means for releasing this latching means after the actuation of any plunger.

Further objects are to provide a novel form of coin delivery apparatus in which the locking means are each intermittently raised, and permitted to fall upon the actuation of any plunger, so that there is an intermittent release of pressure against the coins, thus permitting the coins to freely move downwardly into the desired position.

Further objects are to provide a coin delivery machine which has the above described characteristics, but which is of very simple and sturdy construction.

An embodiment of the invention is shown in the accompanying drawings in which:—

Figure 1 is a side elevation partly in section of the machine.

Figure 2 is a horizontal sectional view showing the locking dogs and the releasing plate.

Referring to the drawings, it will be seen that a coin delivery machine has been provided in which a plurality of coin hoppers, indicated by the reference character 1, are provided for the reception of the coins 2. These coin hoppers are provided with slots adjacent their lower ends through which the discharge arms or members 3 may operate. These members 3 are preferably formed of a pair of pivotally joined arms which are spring urged in opposite directions as disclosed, for instance, in my Patent No. 1,401,133 of December 27, 1921, for coin delivery apparatus. These coin delivery plungers are actuated by means of an operative plunger 4. The plunger 4 is preferably guided by roller bearings 5 with the rollers of said bearings fitting within slots formed as in the Figure 1. Further, these plungers are provided with forward and rear stops 6 which limit their motion. In addition to these stops the plungers are each provided with a forward foot 7 which is adapted to contact with a rock shaft 8 which extends transversely across the machine, and is pivoted as indicated at 9, in the side frames 10 of the machine. The purpose of this rock shaft will hereinafter appear.

The plungers 4 are operated by means of links 11 pivoted at their forward ends to the plungers, and at their rear ends to arms 12 of the rock bars or rock arms 13. These rock arms are depressed by means of the feet 14 of the keys 15, as described in greater detail in the above noted patent or in my co-pending application, Serial No. 92,248, filed March 4, 1926. Obviously, the particular type of actuating key and associated rock arms may be varied.

Each of the plungers 4 is provided with a cammed upper surface 16 which slants forwardly and downwardly. It is also provided with a front shoulder 17. These front shoulders are adapted to be engaged by the lock-

ing dogs 18 under certain conditions, such locking dogs normally occupying the elevated position indicated in Figure 1. However, the locking dogs have their inner ends extending over the downwardly turned portion 19 of a releasing plate 20, such plate being pivoted, as indicated at 21. The plate is provided with a plurality of notches or slots 22 (see Figure 2) through which the plungers 4 project. The plate 20 is provided with a rearwardly projecting arm 23 which is adapted to be depressed by means of the foot 24 of a manually actuated releasing key 25. This releasing key is provided with any suitable form of latch, such as that indicated in Figure 1, for instance. It may be notched and adapted to be engaged by the upper end of a latching lever 26. This lever 26 has its lower end joined by means of a link 27 with the releasing rock shaft 8.

It is to be noted further, that each of the coin hoppers 1 is provided with a coin engaging cam member 28 which is pivoted adjacent its upper end, as indicated at 29. This member 28 is provided with a circular lower portion 30 for a portion of its extent which is adapted to rock over the tops of the coins when the coins become nearly exhausted, as indicated in Figure 1. The lower end or rear end of the cammed member 28 is provided with a projecting portion 31. This portion engages the downwardly extending short levers 32 formed integrally with the locking levers 18. Preferably, these locking levers are hooked over a stationary transverse rod 33 so that they may freely pivot upon such rod.

In the operation of the apparatus the keys 15 are depressed and actuate the appropriate plunger 4, or combination of plungers, by means of the rock arm 13, and the links 11. The coins are dispensed in the usual manner by this operation. However, it is particularly noted that at each forward motion of any of the plungers 4, the cammed surface 16 thereof raises the plate 20 and, consequently, raises each of the locking dogs 18. This relieves the pressure against the cammed members 28 and, consequently, relieves the pressure against the coins, it being noted that the coins are pressed into engagement with two forward points of the hoppers by means of the cam members 28. However, when the locking dogs 18 are raised by the plate 20 upon the actuation of any plunger 4 this pressure is relieved and the coins are permitted to fall freely downwardly under the action of gravity and to thus correctly position themselves in their respective hoppers.

When a hopper becomes partially exhausted, the lower portion 30 of the cammed member 28 swings over the upper edge of the coins and allows the corresponding locking dog 18 to fall downwardly and to engage the shoulder 17 of its plunger 4. This locks the plunger against further operation either singly or in combination with other plungers.

However, when it is desired to release the latching dog by means of the manual key 25, it is merely necessary to depress the key. This raises the plate 20 and releases the latching dog as the plate 20 extends under all of the latching dogs. The key 25 is held in its depressed position by the mechanism described above. However, when any plunger 4 is projecting forwardly the foot 7 thereof strikes the rock shaft 8 and rocks such shaft forwardly. This draws the link 27 forwardly and releases the latch for the key 25, allowing the key to spring upwardly.

Thus it is impossible for the operator to inadvertently leave the latching dogs released, for the latching key is itself tripped upon each operation of the machine. Consequently, the chance of error in the operation of the machine is materially reduced.

It has been found, from actual experiments conducted with this mechanism, that the raising of the latching dogs 18 upon the actuation of any plunger 4 permits the free falling of the coins in their hoppers, as it relieves them of any pressure due to the cammed members and latching dogs.

It will be seen further, that the plate 20 performs a dual function. In the first place it acts as a releasing plate for each of the latching dogs and, in the second place, it lifts each of the dogs upon the operation of any plunger, thus relieving pressure against the coins.

It will, therefore, be seen that a very simple and serviceable type of coin dispensing apparatus has been provided in which novel means are employed for insuring the free positioning of the coins and also for releasing the latching dogs temporarily during a single operation only.

Although the invention has been described in considerable detail, such description is intended as illustrative rather than limiting as the invention may be variously embodied.

I claim:

In a coin delivery machine, the combination of a plurality of coin hoppers, ejectors for removing coins from said hoppers, a plurality of keys for operating said ejectors, locking means controlled by the coins with the hoppers for locking said ejectors when the coin supply is low, releasing means for releasing said locking means, means for automatically locking said releasing means upon actuation of the same for releasing said locking means, and means operated upon actuation of any key for releasing said releasing means.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

EDWARD J. BRANDT.