July 1, 1930. A. J. SWING 1,769,399

VENDING MACHINE

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Fig. 2.

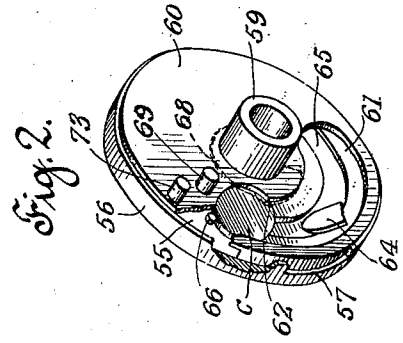
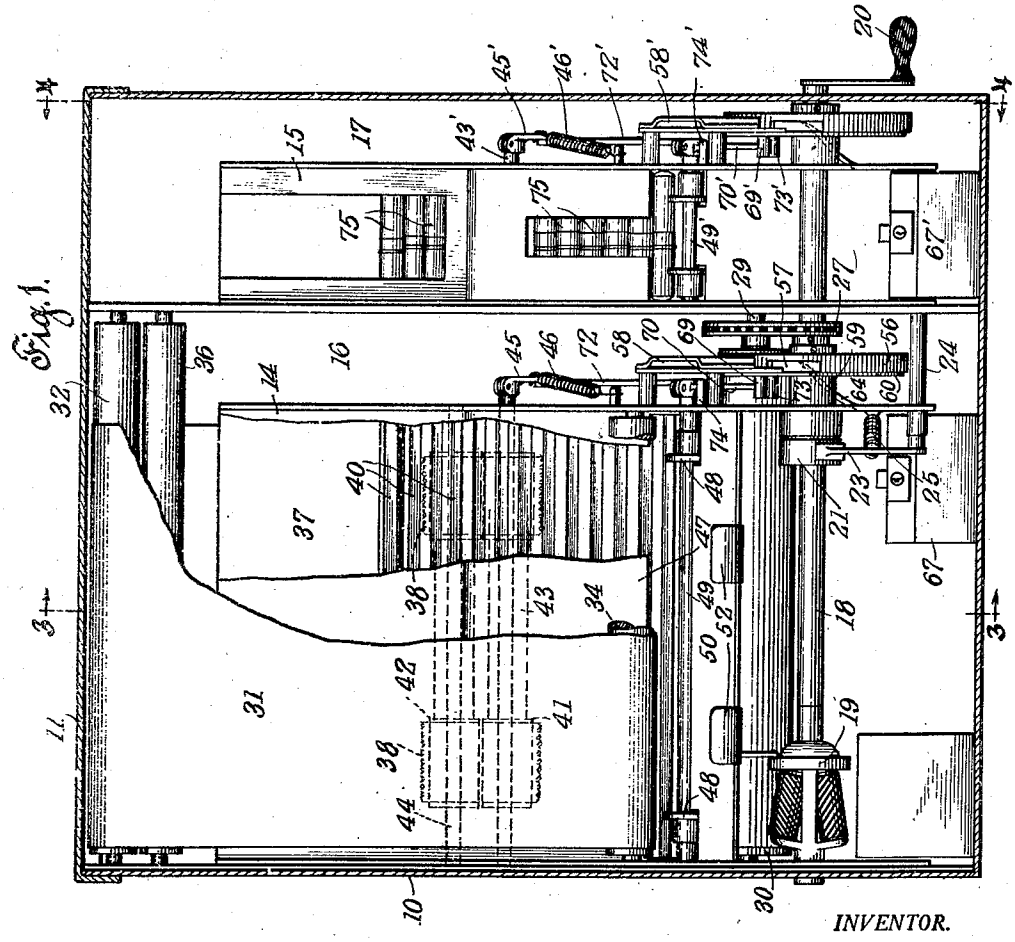


Fig. 1.



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Fig. 4.

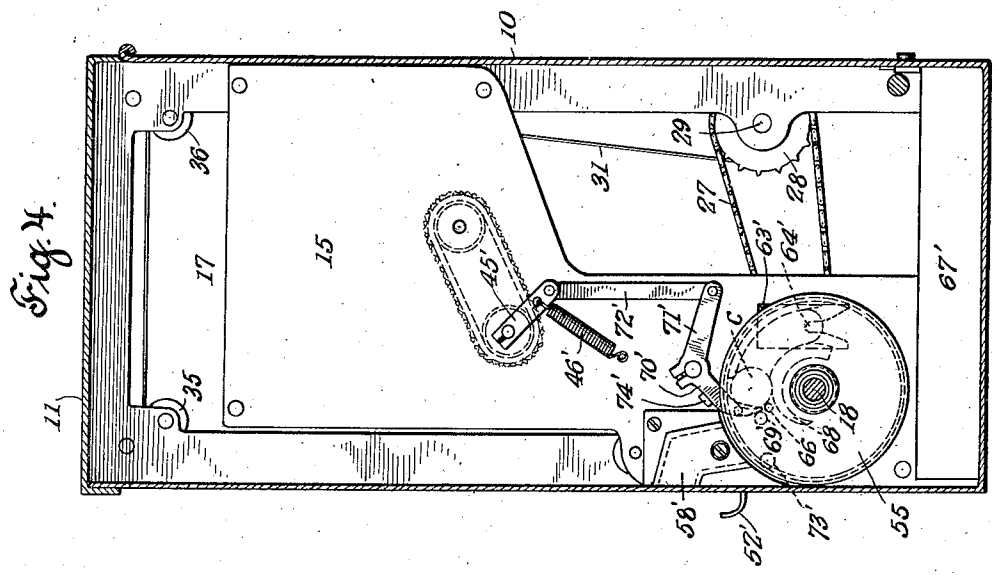
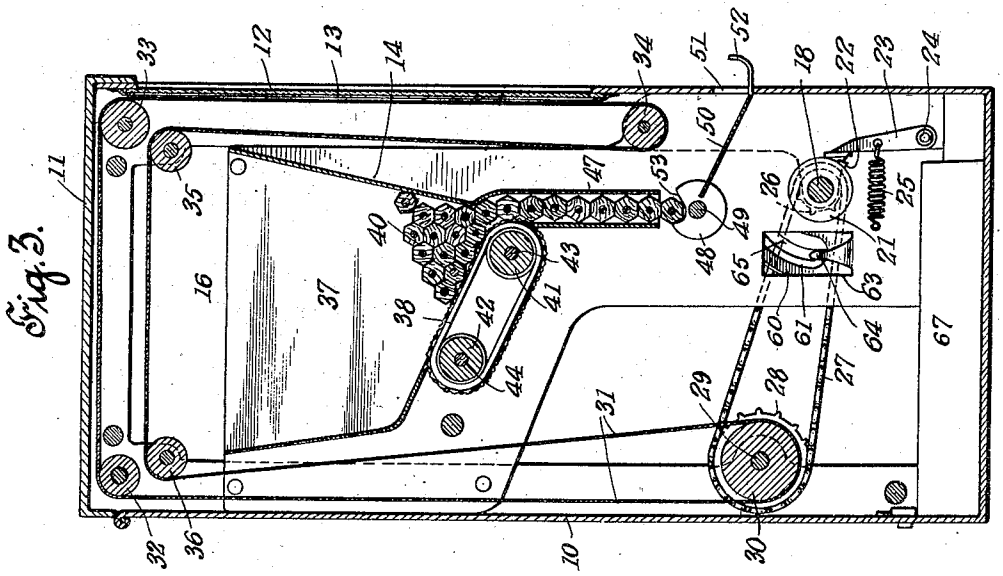


Fig. 3.



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UNITED STATES PATENT OFFICE

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VENDING MACHINE

Application filed November 10, 1927. Serial No. 232,212.

This invention relates to vending machines adapted to dispense unlike articles from storage hoppers upon inserting a coin selectively with reference to the compartment containing the desired articles and actuating a crank common to all the several compartments.

It is one of the objects of this invention to provide a machine for operating on long thin articles, such as lead pencils, having means for agitating the same to positively insure delivery to a carrier arranged to oscillate by the crank and discharge a single article outwardly of the machine.

A further feature is in the provision of a novel, practical and simple rotary shuttle to receive a coin, utilize it as a clutch element whereby a sale is accomplished, and eventually discharge the coin, resetting the mechanism for further operation, provision also being made for preventing reverse motion of the crank.

Another purpose is to incorporate in the mechanism an endless display band, driven by the crank and bearing any inscription that may be desired, these bands being interchangeable.

These and other advantages, which will hereafter appear, are accomplished by the peculiar construction and combination of parts herein described and shown in the accompanying drawings, constituting an essential part of this disclosure, and in which:—

Figure 1 is a front elevational view of an embodiment of the invention, parts being broken away and the casing in section in order to show the construction.

Figure 2 is a perspective view of the rotary coin shuttle, looking from the rear side.

Figure 3 is a transverse sectional view taken on line 3—3 of Figure 1.

Figure 4 is a similar sectional view taken on line 4—4 of Figure 1.

Referring in greater detail to the drawings, the numeral 10 designates in general an oblong rectangular casing having a hinged cover 11 and being provided with an opening 12 having at its inner side a transparent plate 13.

Disposed in the casing are two frames, respectively 14 and 15, at the right of each of which are spaces 16 and 17 for operative mechanism as later described.

Journalled in the end walls of the casing and frame plates is a shaft 18, its inner end being operatively engaged with a pencil sharpener 19 of well known type, the sharpener being accessible through the left hand end wall of the casing, and fixed to the opposite, extending end of the shaft is a hand crank 20.

Fixed on the shaft is a collar 21 carrying a bevel ended stud 22, engageable with the flattened end of a lever 23 pivoted on a rod 24 and drawn by a tension spring 25 against the periphery of the collar, the lever obviously acting to prevent rotation of the shaft in an anti-clockwise direction but permitting movement in an opposite direction.

Also secured on the shaft 18 is a sprocket wheel 26 driving a chain 27 trained over a larger sprocket wheel 28 fixed on a spindle 29 rotatably mounted in the frame and carrying a friction roll 30 to drive an endless band 31 trained over idle rolls 32 and 33 near the top of the casing, thence down closely adjacent the transparently covered opening 12, around a lower guide roll 34 and thence upward over guide rolls 35 and 36 to the driving roll 30.

Thus the band is moved circuitously upon action of the shaft 18 and caused to display its inscriptions consecutively, and the band may be substantially the entire width of the casing or a part thereof as preferred.

Intermediate the vertical runs of the band is a hopper 37, between the walls of the frame 14, having converging walls, the lowermost being partially open, as best seen in Figure 3, and entering the opening are two or more inclined agitator belts 38 having corrugated outer surfaces, forming in effect the bottom wall of the hopper on which the articles, as the pencils 40, rest.

The agitator belts 38 are spaced apart and trained around rolls 41 and 42, the latter being a free running idler mounted on a spindle 43, while the roll 42 is fixed on a spindle 44 projecting through the frame and engaged by an adjustable clamp lever 45 drawn down-

wardly by a tension spring 46 and operated by means further on described.

Depending from the hopper 37 is a narrow chute 47 adapted to contain a single vertical row of the pencils 40, the open lower end of the chute being adjacent the periphery of a pair of disc carriers 48 mounted on a spindle 49 and having between them a downwardly inclined shelf 50, leading to a discharge opening 51 in the front wall of the casing, and provided with upturned outstanding plate lugs 52 adapted to receive a pencil and retain it in position for manual removal.

Each of the carriers 48 contains a peripheral recess 53 to receive a pencil from the chute and is rocked forward by movement imparted to the spindle in the following manner.

Rigidly secured on the shaft 18 is the hub of a circular disc 55 having an inreaching peripheral flange 56 containing an opening 57 alinable with the lower end of a coin chute 58 held rigidly to one of the frame walls in the space 16 and having an entrance through the front wall of the casing.

Freely rotatable on the shaft 18 is the hub 59 of a second disc 60, fitting within the flange 56 and having an open arcuate slot 61 provided with an enlarged end recess 62 into which a coin C is received.

An opening 63, in the adjacent plate forming one of the frame members, is sheared to produce an outwardly bent finger 64 the end of which projects through the slot 61 and into a shallow annular groove 65 in the disc 55, as may be seen in Figures 2 and 3.

Set in the positively driven disc 55 are two pins 66 adapted to contact with the edge of a coin C when it is within the slot recess 62, causing it to perform the function of a clutch member, the opposite edge of the coin being in contact with the ends of the slot 61 and a curved thickener strip 68, fixed on the disc, thus rotating the shuttle disc 60 until the coin is raised outwardly by reason of the intercepting finger 64, being thereafter deposited in a coin box 67 on the bottom of the casing.

During the rolling movement of the coin shuttle, a pin 69, set in the outer side of the loose disc 60, makes forcible contact with one end 70 of a bell-crank lever, having a hub adjustably clamped on the end of the spindle 49, thus rocking the carriers 48 and causing them to deliver a pencil.

Another pin 73 set in the disc 60 acts as a stop preventing over operation of the shuttle, the bell-crank lever being held against a fixed stop 74, by the spring 46.

From the foregoing it will be understood that during the absence of a coin, the handle may be turned in a clockwise direction at will, whereby the pencil sharpener may be used and the display band exhibited, and upon the insertion of a coin a single pencil will be discharged unfailingly from the hopper into position to be removed.

The adjacent frame 15 is utilized for other purposes, as for instance the sale of a box 75 of pencil leads, using the same crank and drive shaft and in fact a duplicate mechanism throughout the parts being given prime numbers so as to distinguish the same.

While a simple and effective device has been described the foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which obviously an embodiment may be constructed including many modifications without departing from the general scope herein indicated and denoted in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a coin controlled vending machine having a casing, a manually operable shaft revoluble in the casing, a disc having a laterally extending peripheral flange fixed on said shaft, a hubbed disc rotatable on the shaft within the confines of the flanged disc, said flanged disc having an opening in its flange, a coin chute registrable with the opening, a coin receiving opening in said hubbed disc, means in said flanged disc to engage an entered coin whereby the discs are coupled to said shaft, and means to extract the coin from said disc when the act of vendition has been accomplished, said means comprising a frame member with an outwardly bent finger projecting within the opening of said hubbed disc.

2. In a coin controlled vending machine having a casing, a manually operable shaft revoluble in the casing, a disc having a laterally extending peripheral flange fixed on said shaft, a hubbed disc rotatable on the shaft within the confines of the flanged disc, said flanged disc having an opening in its flange, a coin chute registrable with the opening, a coin receiving opening in said hubbed disc, means in said flanged disc to engage an entered coin whereby the discs are coupled to said shaft comprising pins projecting from said flanged disc and engaging against the edge of an entered coin, and a curved thickener strip fixed on said flanged disc and engaging against another portion of the edge of said entered coin, and means to extract the coin from said disc when the act of vendition has been accomplished.

3. In a coin controlled vending machine having a casing, a manually operable shaft journalled in said casing, a flanged disc fixed on said shaft having a peripheral opening, a coin chute alined therewith, a second disc having a hub revoluble on the shaft and fitting within the flange of the first named disc, the hubbed disc having an arcuate slot with an enlarged recess at one end to receive a

coin, means in the first named disc to cause the coin to couple the disc, bell-crank levers, vending mechanism operated thereby, and means on the hubbed disc when coin coupled to actuate said vending mechanism, said means comprising pins projecting from said hubbed disc and engaging said bell-crank levers.

4. In a coin controlled vending machine having a casing, a manually operable shaft journalled in said casing, a flanged disc fixed on said shaft having a peripheral opening, a coin chute alined therewith, a second disc having a hub revoluble on the shaft and fitting within the flange of the first named disc, the hubbed disc having an arcuate slot with an enlarged recess at one end to receive a coin, means in the first named disc to cause the coin to couple the discs, bell-crank levers, vending mechanisms operated thereby, and means on the hubbed disc when coin coupled to actuate said vending mechanisms.

5. In a coin controlled vending machine having a casing, a manually operable shaft revoluble in the casing, a disc having a laterally extending peripheral flange fixed on said shaft, a hubbed disc rotatable on the shaft within the confines of the flanged disc, said flanged disc having an opening in its flange, a coin chute registrable with the opening, a coin receiving opening in said hubbed disc, means in said flanged disc to engage an entered coin whereby the discs are coupled to said shaft, and means to extract the coin from said disc when the act of vendition has been accomplished.

In testimony whereof I affix my signature.

ALFRED J. SWING.