No. 638,376. Patented Dec. 5, 1899.

C. W. BANKES.

COIN CONTROLLED VENDING APPARATUS.

(Application filed July 14, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 6.

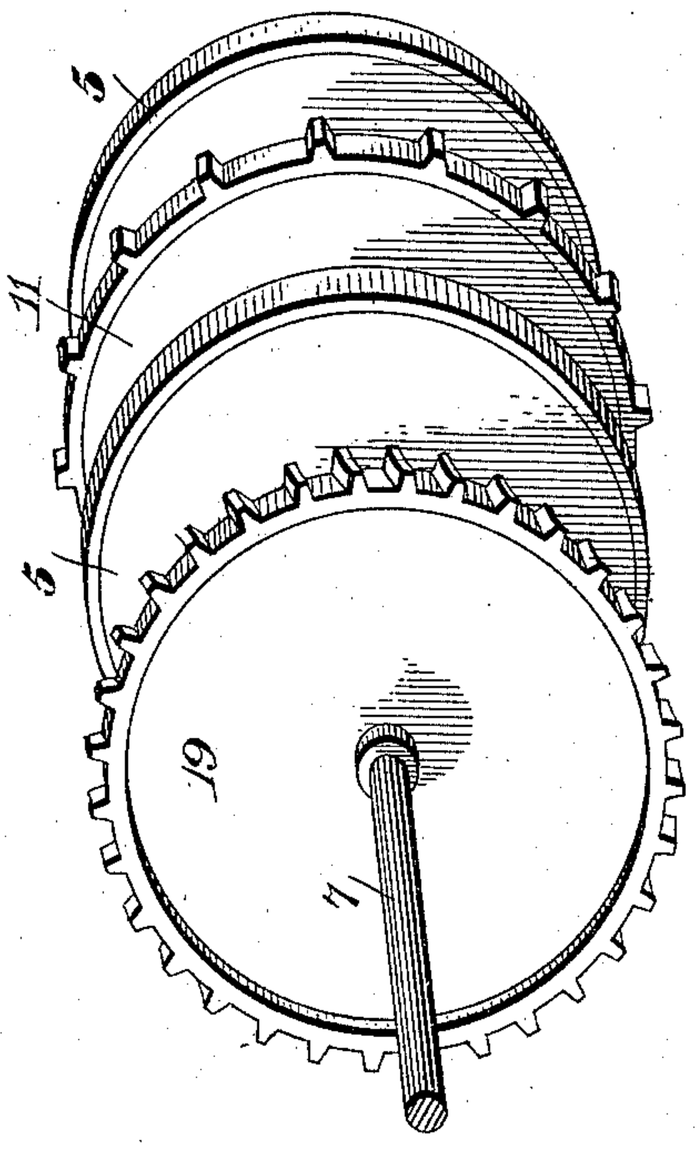


Fig. 7.

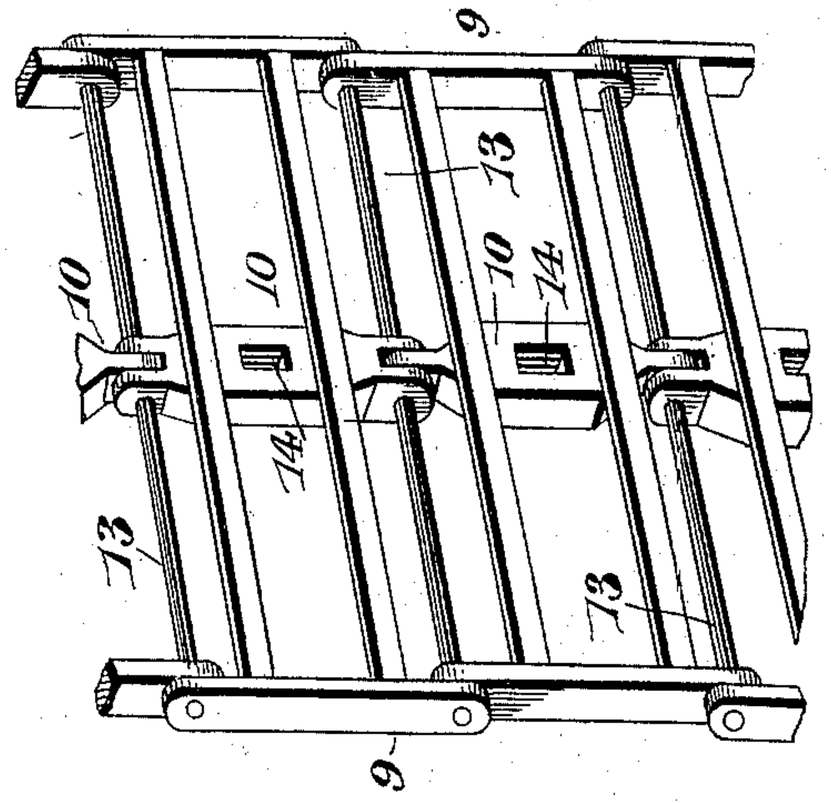
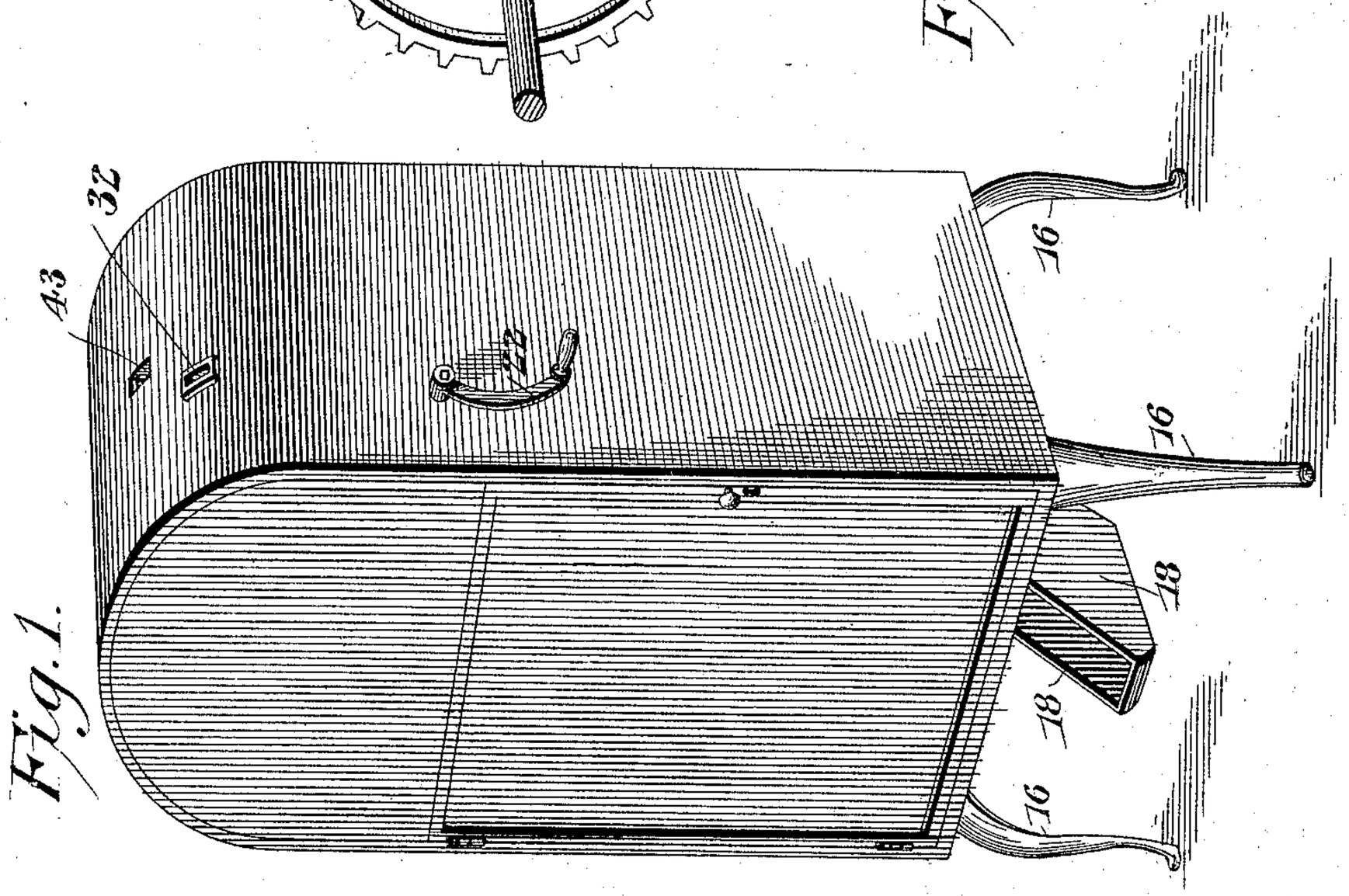


Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

Fig. 2.

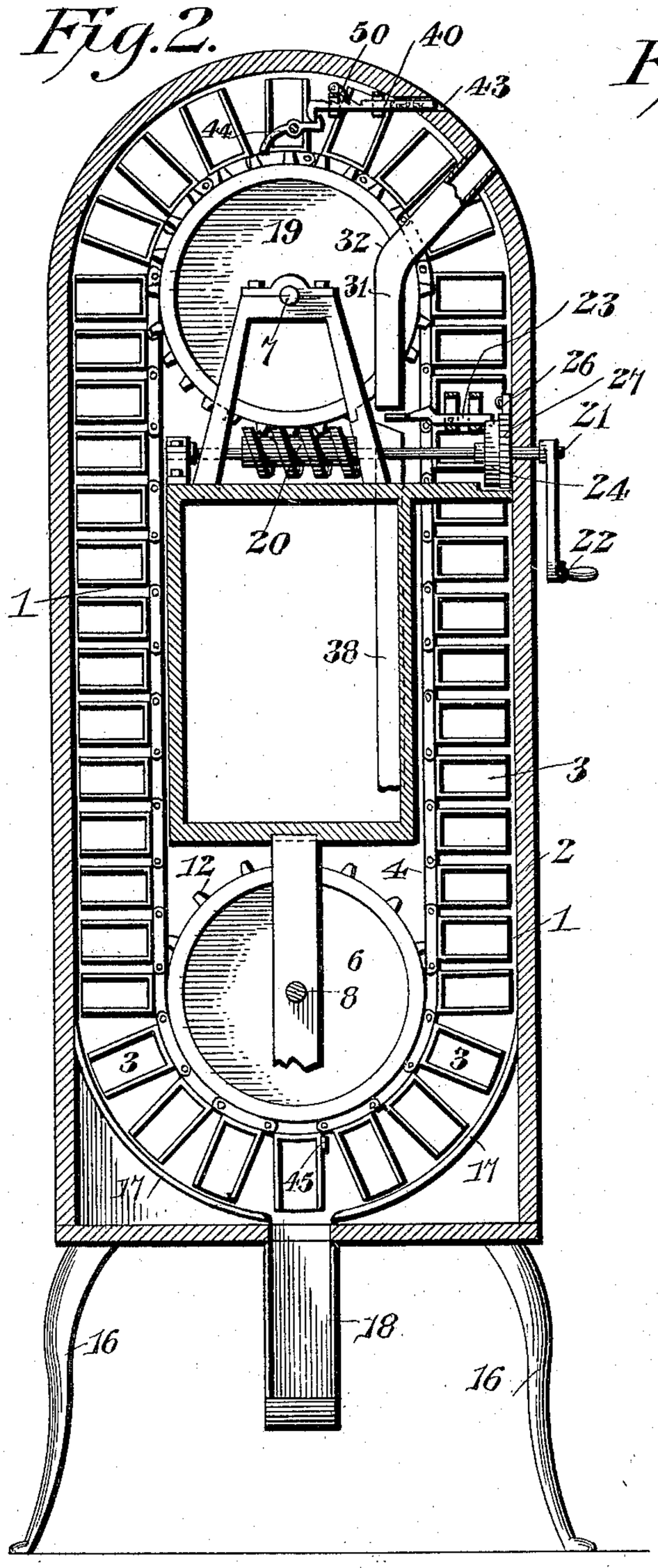
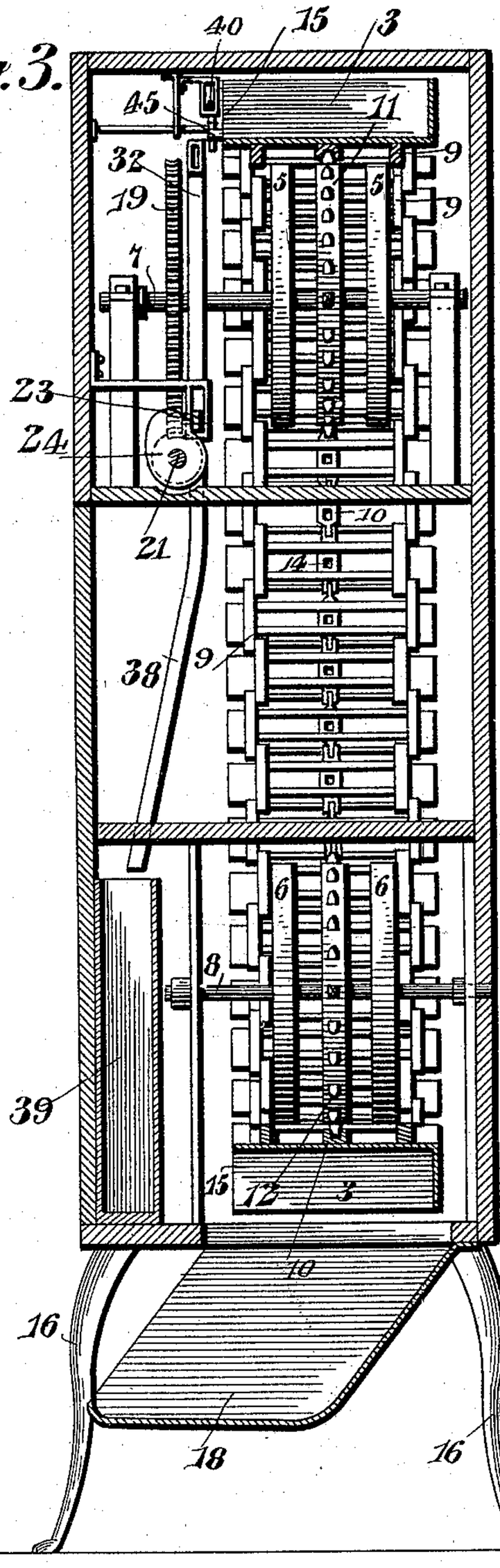


Fig. 3.



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(No Model.) 3 Sheets—Sheet 3.

Fig. 4.

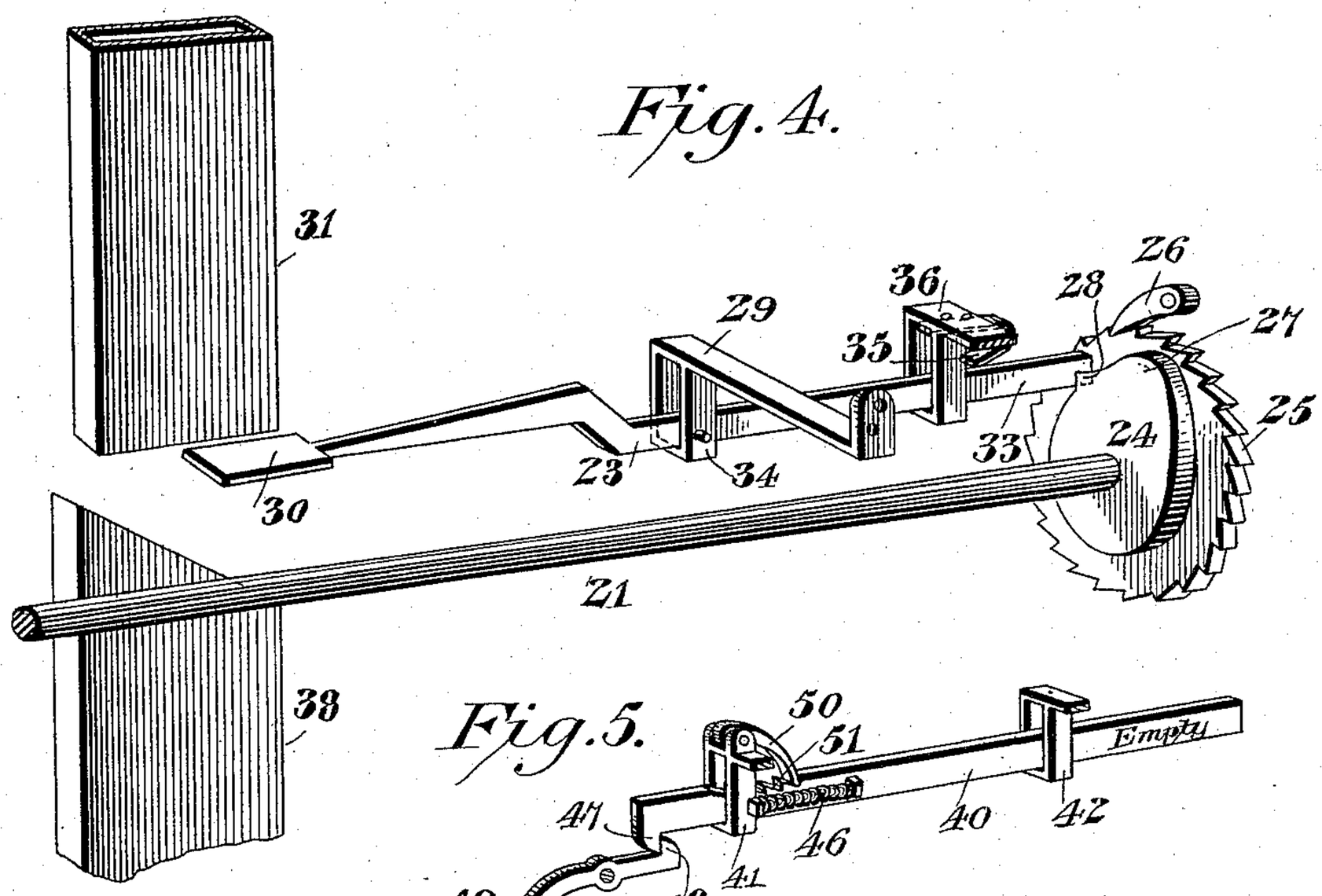
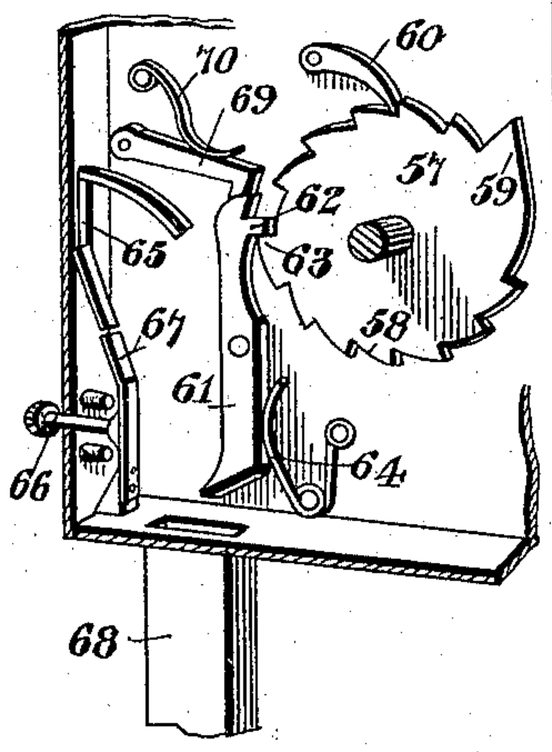


Fig. 5.

Fig. 8.

Fig. 9.

Fig. 10.



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UNITED STATES PATENT OFFICE.

CHARLES W. BANKES, OF MIDDLEPORT, PENNSYLVANIA.

COIN-CONTROLLED VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 638,376, dated December 5, 1899.

Application filed July 14, 1899. Serial No. 723,796. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. BANKES, a citizen of the United States, residing at Middleport, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Coin-Controlled Vending Apparatus, of which the following is a specification.

The invention relates to improvements in coin-controlled vending apparatus.

The object of the present invention is to improve the construction of coin-controlled vending apparatus and to provide a simple and comparatively inexpensive apparatus designed for dispensing proprietary medicines and adapted to receive comparatively heavy packages, bottles, and the like.

A further object of the invention is to provide an apparatus of this character of great strength and durability, capable of being operated by hand to advance the carrier for discharging a bottle or package and adapted to prevent effectually more than one package or bottle being delivered at each operation.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a coin-controlled vending apparatus constructed in accordance with this invention. Fig. 2 is a vertical sectional view taken transversely of the apparatus. Fig. 3 is a vertical sectional view taken at right angles to Fig. 2. Fig. 4 is a detail perspective view of the coin-actuated locking-lever and the operating-shaft, illustrating the manner of locking the lever. Fig. 5 is a detail view of the device for indicating when the apparatus has discharged all of its contents. Fig. 6 is a detail view of the upper set of wheels of the endless carrier. Fig. 7 is a similar view of a portion of the chain of the endless carrier. Fig. 8 is a vertical sectional view illustrating a modification of the invention and showing the different forms of endless carriers. Fig. 9 is a vertical sectional view of one side of the same, taken at right angles to Fig. 8. Fig. 10 is a detail view illustrating a modification of the coin-operated mechanism for locking the operating-shaft.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates an endless carrier disposed vertically within a casing 2 and composed of a series of oblong receptacles 3, mounted upon an endless chain 4, which is supported by upper and lower wheels 5 and 6, arranged in pairs, as clearly illustrated in Fig. 3 of the accompanying drawings. The wheels 5 and 6, which are provided with smooth peripheries, are mounted upon upper and lower horizontal shafts 7 and 8, disposed from front to rear and journaled in suitable bearings. The endless chain is composed of supporting-links 9 and centrally-arranged sprocket-links 10, which engage upper and lower sprocket-wheels 11 and 12, whereby the endless carrier is actuated when the upper shaft is rotated by the means hereinafter described, but the operating mechanism may be applied to either of the shafts, if desired. The links 9 are composed of side bars and connecting rods or bars rigidly connected at their terminals with the side bars at points between the ends thereof and preferably formed integral with the same, and the terminals of the side bars are perforated for the reception of pintle-rods 13, whereby the links are hinged together. The terminals of the side bars are overlapped, as clearly illustrated in Fig. 7 of the accompanying drawings, the alternate supporting-links being shorter than the adjacent ones to bring the side bars in proper position. The sprocket-links 10 are provided with central rectangular openings 14 to receive the teeth of the upper and lower sprocket-wheels, and the alternate sprocket-links have their terminals bifurcated to receive the reduced ends of the adjacent links.

The oblong receptacles 3, which are suitably secured to the endless chain, are preferably constructed of sheet metal, such as tin, and are open at their front ends at 15 to enable the bottles, packages, or other articles to be introduced into them from the front of the casing, and the latter, which may be of any desired construction, is preferably mounted upon suitable legs 16, as illustrated in Fig. 1, and is provided with a rounded top. The receptacles consist of a bottom, sides, and an inner end and the top or outer portion is closed by the sides and top of the casing, as clearly

illustrated in Fig. 2 of the accompanying drawings, and said casing is provided at its bottom with curved guards 17, arranged at opposite sides of the delivery-chute 18, which extends from the bottom of the casing. The receptacles are inverted as they approach the delivery-chute and successively deposit their contents into the same as the carrier is advanced by the means hereinafter described.

The upper shaft 7 carries the spur gear-wheel 19, which meshes with and is operated by a worm or screw 20, mounted on an operating-shaft 21 and arranged at the bottom of the gear-wheel, as clearly illustrated in Fig. 2 of the drawings. The operating-shaft, which is journaled in suitable bearings, is disposed transversely of the casing and extends through one side thereof and carries a crank-handle 22; but any other suitable means may be employed for rotating the shaft from the exterior of the casing. The operating-shaft is normally locked against forward rotation by a coin-operated lever 23, which engages a cam-wheel 24 of the operating-shaft, as clearly illustrated in Fig. 4 of the drawings, and the said operating-shaft is locked against retrograde rotation by a ratchet-wheel 25 and a pivoted pawl 26. The pawl is pivoted to one side of the casing at a point above the ratchet-wheel and is held in engagement with the same by gravity. The ratchet-wheel is secured to the operating-shaft and is arranged adjacent to the cam-wheel 24, which is provided at the end of the cam portion 27 with a shoulder 28 for engaging the coin-operated lever 23. The coin-operated lever, which is fulcrumed between its ends in a suitable bracket 29, has one end arranged in the path of the shoulder of the cam-wheel and its other end, which is provided with a plate or enlargement 30, is located at the lower terminal of the upper section 31 of a coin-chute 32 and is adapted to be engaged and depressed by a coin of the proper denomination, whereby the end 33 of the lever will be lifted out of engagement with the shoulder of the cam-wheel and will permit the operating-shaft to make one revolution, which is sufficient to advance the endless carrier the distance of one receptacle. The weight of a coin is sufficient to lift the end 33 of the lever 23 out of engagement with the shoulder of the cam-wheel, and the said coin is supported in this position by the enlarged end 30 of the lever and the upper section of the coin-chute. Farther upward movement of the end 33 of the lever by the coin is prevented by a spring 35, which is arranged to engage the upper edge of the said lever. The cam portion 27 of the cam-wheel projects radially beyond the shoulder portion, and when the operating-shaft is rotated the end 33 of the lever 23 is forced upward against the action of the spring 35 a distance sufficient to carry the enlargement 30 downward away from the upper section of the coin-chute, so that the coin will be deposited. By this construction the engaging end 33 of the coin-operated lever is supported out of engagement with the shoulder 28 of the cam-wheel until the shaft 21 is rotated.

The hanger 29 consists of an arm or bar provided at one end with an attachment plate or flange and having a depending loop 34 at its other end to receive the coin-operated lever. The spring 35, which limits the upward movement of the end 33 of the lever 23 when the latter is actuated by a coin, is mounted within a hanger 36, which is provided with a depending rectangular loop or frame. The coin-chute consists of the said upper section 31 and a lower section 38, spaced at its upper end from the adjacent end of the upper section 31 and adapted to deliver the coins to a suitable receptacle 39. The upper section 31 of the coin-chute depends from a suitable slot of the top of the casing, and when a coin is deposited in the slot the outer end 33 of the lever 23 is lifted out of engagement with the cam-wheel and the operating shaft is released. As the cam-wheel is rotated the shoulder is carried beyond the lever, which is held against the periphery of the wheel by the spring and which forms a stop to prevent the shaft from making more than one revolution, so that it is impossible for more than one bundle or package to be delivered to the operator at any one operation of the apparatus.

The apparatus is provided at its top with a spring-actuated indicating-bar 40, mounted in suitable guides or hangers 41 and 42 and located adjacent to a slot or opening 43 of the casing. This bar is normally held retracted by a lever 44, which is disengaged from the spring-actuated bar 40 by a stop or projection 45, mounted on one of the receptacles; but it may be provided at any other point on the endless carrier. The spring 46, which is of spiral form, is secured at one end to a lug of the bar 40 and is attached at its other or rear end to a lug of the inner guide or hanger 41, and when the bar is free to move the spring throws it outward and projects the outer portion of the bar through the slot or opening 43 of the casing. The outer portion of the bar is designed to bear the word "Empty" or a similar expression to warn purchasers when the contents of the apparatus have been exhausted. The spring-actuated bar is provided at its inner end with a beveled tooth 47, and the tripping-lever 44, which is fulcrumed between its ends on a suitable support, is provided with a corresponding beveled tooth 48, which engages the tooth 47, as clearly illustrated in Fig. 5 of the accompanying drawings. The tooth 48 is located at one end of the tripping-lever, and the other end 49 is curved downward and arranged in the path of the projection 45 of the endless carrier and is adapted to be engaged by the same to carry the tooth 48 out of engagement with that of the indicating-bar 40 to release the latter. The bar 40 is locked in its extended position by a pawl or dog 50 to pre-

vent the bar after being extended from being forced inward by mischievous persons. The pawl or dog 50 is pivoted at its upper end to the top of the hanger or guide 41, and its lower end is arranged to engage a series of teeth 51, located at the upper edge of the spring-actuated indicating-bar.

In Fig. 8 of the accompanying drawings is illustrated a modification of the invention in which a rotary or circular endless carrier 52 is employed, and this endless carrier 52 consists of an annular series of receptacles fixed to a drum 53, which is mounted on a shaft 54. The operating mechanism is the same as that heretofore described, with the exception that the tripping projection 56 is mounted on the gear-wheel.

In Fig. 10 of the drawings is illustrated a modification of the coin-operated mechanism for locking the operating-shaft normally out of operation. This device comprises a combined ratchet and cam wheel 57, having ratchet-teeth 58 and having an extended tooth or cam 59, and the wheel 57 is locked against rotation by a pawl 60 and a coin-operated lever 61. The pawl locks the shaft against retrograde rotation, and the lever 61, which is fulcrumed between its ends, is disposed vertically and is provided at its upper end with a cleat 62, which engages a recess or shoulder of the wheel 57. The recess is formed by one of the ratchet-teeth and by a reversely-arranged tooth 63. The lower portion of the lever is engaged by a spring 64, which holds the upper portion in engagement with the ratchet-wheel and which prevents the lever from being accidentally vibrated out of such engagement. The coin for operating the apparatus is introduced through a slot 65 and is interposed between the lower portion of the lever 61 and a head of a push-bar 66. The head may be formed by the spring 67, which returns the push-bar to its normal position after it is operated. When the push-bar is moved inward, it is adapted to carry a coin against the lower arm of the lever 61, whereby the upper arm is carried away from the ratchet-wheel to release the same, and the lower end of the lever is provided with an extension disposed over a coin-chute 68 and adapted to prevent a coin from dropping into the chute until the lever has been operated. When the upper end of the lever 61 is swung away from the ratchet-wheel, it is locked out of engagement by a spring-actuated catch 69, consisting of a shank or bar pivoted at one end and provided at its other end with a tooth which normally rests upon the upper end of the lever 61. The upper end of the lever 61 is beveled, as shown, and when it swings away from the ratchet-wheel it lifts the catch and passes behind the tooth thereof and is thereby locked out of engagement. The spring 70 holds the catch in engagement with the lever until the combined ratchet and cam wheel is rotated sufficiently to cause the extended portion or cam 59 to engage the upper end of the lever 61 and the adjacent end of the catch. The cam lifts the catch out of engagement with the lever and permits the latter to reëngage the ratchet-wheel 57.

The casing is provided at its front with a suitable door or doors to afford access to the interior and to enable the endless carrier to be readily supplied with bottles or packages of medicine or other material to be dispensed.

It will be seen that the vending apparatus, which is simple and comparatively inexpensive in construction, is especially adapted for handling bottles and packages of considerable weight, and that it possesses great strength and durability and is positive and reliable in operation. The endless carrier is actuated by hand, and the coin-controlled mechanism effectually prevents more than one package or article being delivered at an operation of the apparatus.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. An apparatus of the class described comprising a casing, a carrier, coin-controlled mechanism for operating the same, a spring-actuated indicating-bar provided with a rack, a pawl for engaging the rack, a tripping-lever, and a projection connected with the carrier and arranged to engage the lever, substantially as described.

2. An apparatus of the class described comprising a casing, a spring-actuated indicating-bar adapted to extend through the casing and provided with a rack, a pawl engaging the rack, a tripping-lever pivoted between its ends and having one end engaging the said bar, its other end being curved, a carrier, coin-controlled mechanism for operating the same, and a projection moving with the endless carrier for engaging the tripping-lever, substantially as described.

3. An apparatus of the class described comprising upper and lower shafts, band-wheels arranged in pairs and mounted on said shafts, upper and lower sprocket-wheels located between the band-wheels, an endless chain arranged on the band-wheels and composed of supporting-links, and sprocket-links engaging the sprocket-wheels, receptacles carried by the endless chain, operating mechanism for actuating the endless chain, and coin-controlled operating mechanism, substantially as described.

4. An apparatus of the class described comprising a casing, upper and lower band-wheels arranged in pairs, sprocket-wheels located between the band-wheels, an endless chain composed of supporting-links arranged on the band-wheels and provided with side bars and connecting-bars, sprocket-links mounted

on the supporting-links and engaging the sprocket-wheels, and coin-controlled operating mechanism, substantially as described.

5. An apparatus of the class described comprising a casing, upper and lower band-wheels arranged in pairs, sprocket-wheels, an endless chain composed of supporting-links having overlapping side bars, and pintle-rods hinging the overlapped portions of the side bars together, sprocket-links pivoted together by the said pintle-rods and engaging the sprocket-wheels, and coin-controlled operating mechanism, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES W. BANKES.

Witnesses:

H. C. MACHAMER,

A. E. SCHWINDT.