(No Model.) 2 Sheets—Sheet 1.

G. F. GALE.

COIN OPERATED DISPENSING MACHINE.

No. 539,752. Patented May 21, 1895.

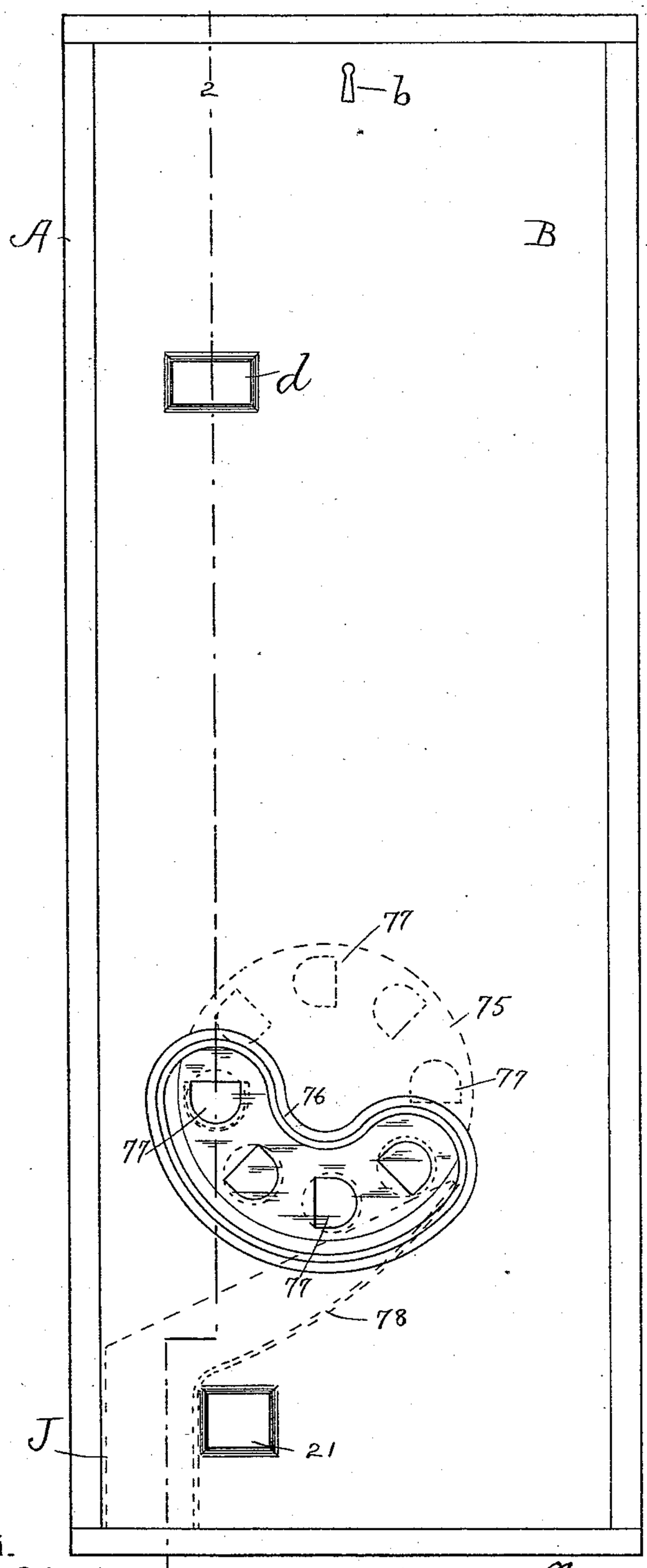

Fig. 1.

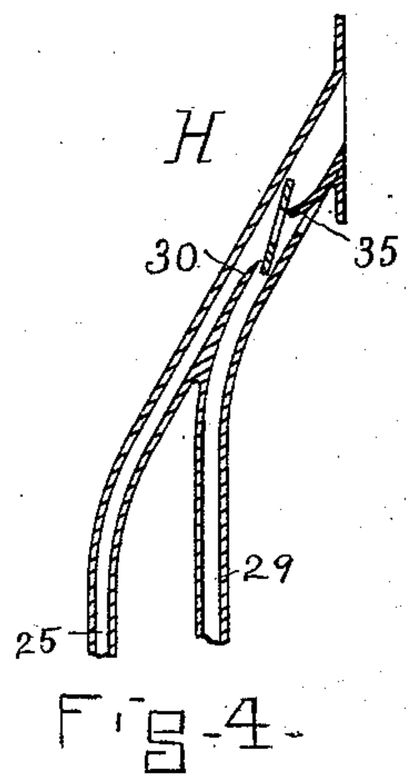

Fig. 4.

WITNESSES.
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(No Model.) 2 Sheets—Sheet 2.

G. F. GALE.

COIN OPERATED DISPENSING MACHINE.

No. 539,752. Patented May 21, 1895.

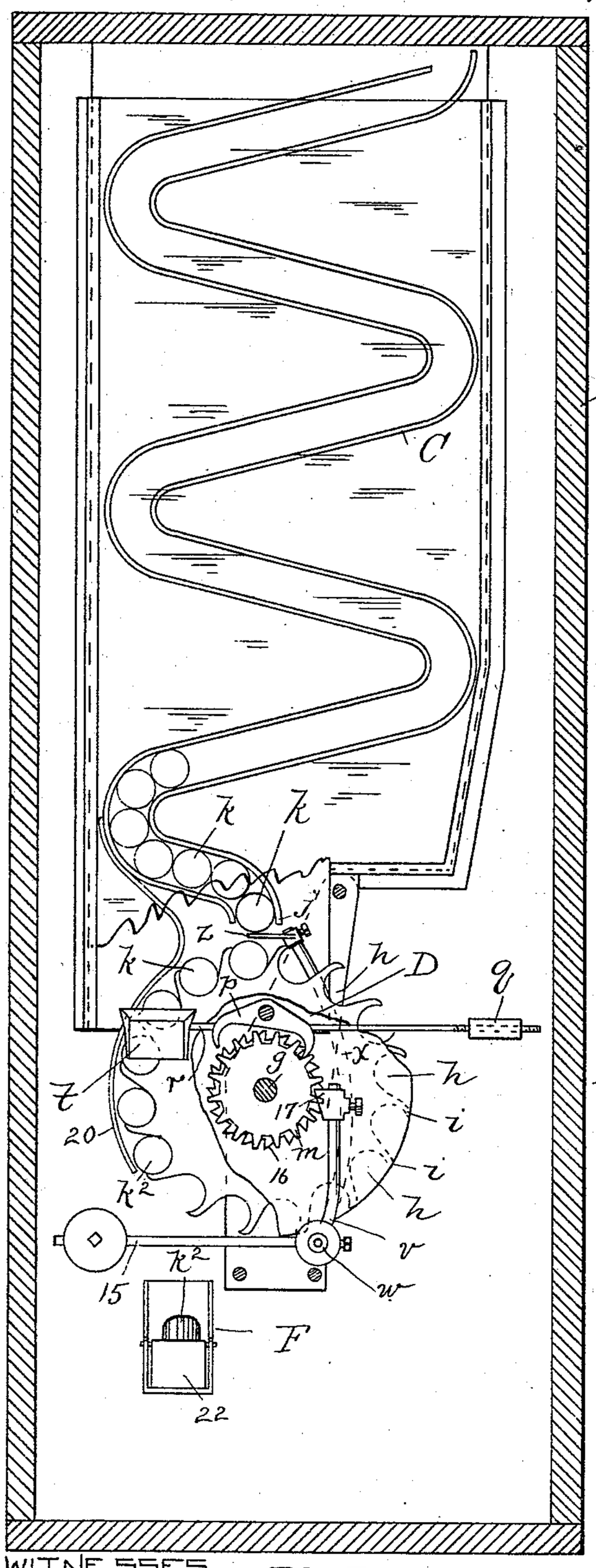

Fig. 3.

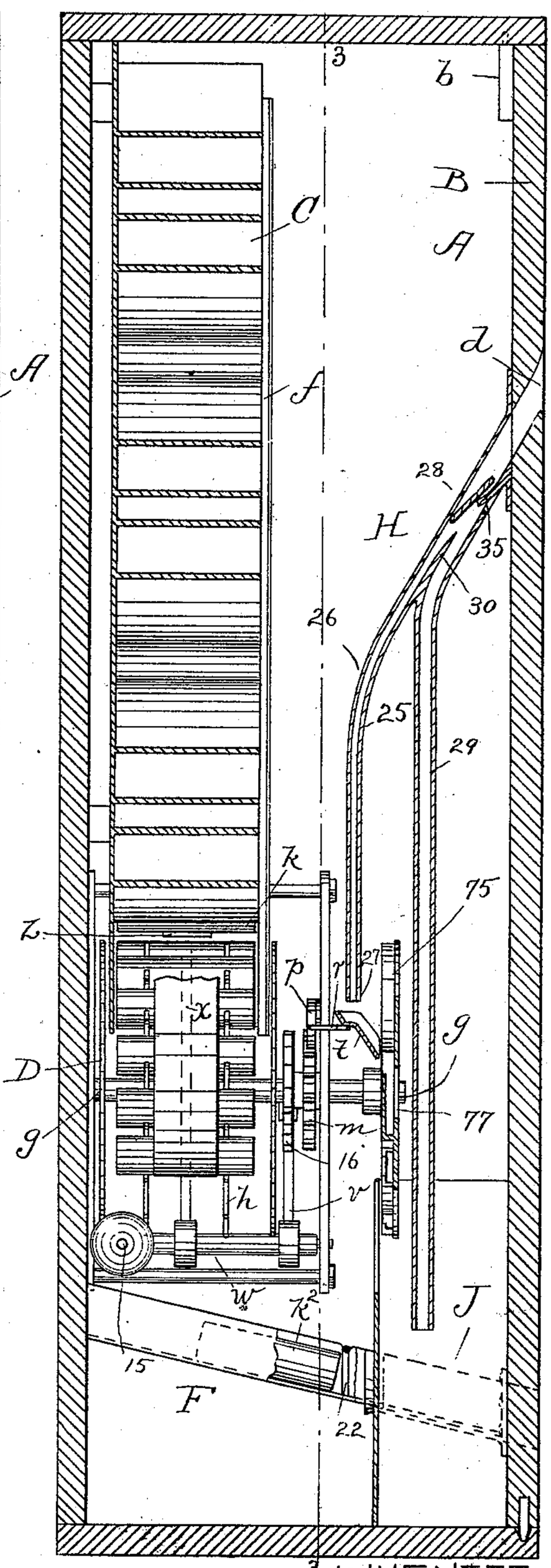

Fig. 2.

WITNESSES.
Matthew M. Blunt.
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By C. A. Seward.
ATT'YS

UNITED STATES PATENT OFFICE.

GEORGE F. GALE, OF WINTHROP, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE INTERNATIONAL MANUFACTURING COMPANY, OF SACO, MAINE.

COIN-OPERATED DISPENSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 539,752, dated May 21, 1895.

Application filed August 13, 1894. Serial No. 520,151. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. GALE, of Winthrop, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Coin-Operated Dispensing-Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of my improved machine; Fig. 2, a transverse section on line 2 2 in Fig. 1; Fig. 3, an elevation, partly in section, taken on line 3 3 in Fig. 2; and Fig. 4, a sectional view illustrating the operation of the coin-chute.

Like letters and numerals of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to a coin-released mechanism for dispensing bulky and weighty articles, such as cigars, rolls or plugs of tobacco, bottles of cologne, &c. Heretofore much difficulty has been experienced in constructing a mechanism for automatically delivering this class of articles from the fact that it has been deemed necessary to employ weights or springs which render it extremely inconvenient and costly to construct machines of sufficient size to effect the object. My invention is designed to overcome these and other objections and in carrying it out I make use of means which will be understood by those conversant with such matters from the following explanation.

In the drawings, A represents the case which may be of any form and construction, that shown being rectangular and provided with a detachable door, B, in its front, secured by a lock, *b*, at the top. In suitable position in the door there is a coin-slot, *d*. In the rear of the box there is a vertically arranged serpentine chute for carrying the goods to be delivered; this form being employed as the grooves take off the pressure resulting from the weight of the goods at the actuating mechanism. The glass front, *f*, covers the serpentine chute.

Running transversely of the case and journaled in suitable supports there is a rotary shaft, *g*. On this shaft is mounted the delivery-wheel, D. This wheel comprises two disks having peripherally opening segmental slots, *h*, the partitions, *i*, between said slots being hook-shaped or curved as best shown in Fig. 3.

The mouth, *j*, of the chute, C, delivers to the slots in this wheel and slightly at one side of a vertical plane passing through the shaft, *g*, so that when a roll, *k*, of the goods in said chute drops into one of these peripheral slots it will tend to cause the wheel, D, to rotate by gravity.

On the shaft, *g*, there is a ratchet-wheel, *m*, fast. A ratchet, *p*, is pivoted in the frame and has a counter-balance, *q*, which holds one tooth of said ratchet in engagement with the wheel, *m*, locking it against movement in one direction. On an arm, *r*, projecting from the opposite arm of the ratchet, a coin-pan, *t*, is mounted; these parts being so arranged that when the coin strikes said pan the ratchet will be rocked against the weight of its counterbalance, *q*, permitting the shaft to be driven the distance of one or more teeth on the ratchet wheel by the weight of the goods in the delivery wheel, D.

A stop for the chute, C, comprises an arm, *x*, fast on a rock-shaft, *w*. To the head of this arm there is a plate, *z*, attached which projects across the mouth, *j*, of the chute, C, and normally holds the contents of the chute from dropping into the delivery wheel.

A counter-balance, 15, is fast to the rock-shaft, *w*. On the shaft, *g*, there is a ratchet-wheel, 16, and on the rock-shaft, *w*, there is an arm, *v*, which bears a cam-pawl, 17, engaging said ratchet, 16, whereby when the shaft, *g*, is rotated the rock-shaft, *w*, will be actuated as the cam, 17, rides on a tooth of the ratchet, 16, throwing the plate, *z*, out from the path of the goods in the chute.

A shield, 20, covers a portion of the peripheries of the disks forming the delivery-wheel, D, so that the goods, *k*, contained in the slots or

recesses, *h*, will not be discharged until a determined point in the revolution of said wheel is reached. Under this wheel a discharge chute, F, inclining outwardly is arranged. This chute opens at, 21, in the cover, B. Across said chute there is a clapper-valve, 22, which will permit the passage of the article, *k*, but will stop the insertion of wires or other implements from outside the case.

The coin-chute, H, comprises a main-chute, 25, having an elbow, 26, in it, said chute connecting with the slot, *d*, in the front of the case and opening at, 27, over the pan, *t*. From the main portion, 28, of the chute, H, a parallel chute, 29, opens, said branches, 25, and, 29, being separated by a partition, 30, in said main portion, 28. The branch, 29, leads to a receiving box, J, in the bottom of the case without connecting in any manner with the mechanism heretofore described. Adjacent the edge of the partition, 30, a teat or boss, 35, is struck up from the bottom of the chute centrally. The purpose of this boss is to prevent the use of metallic washers for operating the machine in place of a legal coin.

On the shaft, *g*, between the coin-chute branches, 25, and, 29, a disk, 75, is fast. This disk is shown by dotted lines in Fig. 1.

The door, B, of the casing has a segment, 76, cut out and glazed so that a portion of this disk, 75, is exposed. Said disk is provided with a series of pockets, 77, which will receive the coin from the pan, *t*. The weight of this coin serves to actuate more determinedly the shaft, and moreover, as when a coin is inserted in the chute it is delivered in a pocket, 77, at the top of the slot, 76, and exposed to view through the glass so that it can be readily seen whether the party operating the machine has disposed a legal coin therein or not. As the disk, 75, is rotated and a pocket, 77, passes the vertical center of the shaft or approaches said center the coin falls out from the pocket and is discharged into a chute, 78, leading to the coin-receptacle, J.

In the use of my improvement the serpentine chute, C, is filled with the article, as *k*, to be dispensed. To render the operation of the machine more perfect and prevent such articles from catching in the chute I preferably inclose them in a small wooden or paper cylinder. These are stopped and held at the mouth by the plate, *z*, on the stop-bar. A coin being inserted in the chute, H, strikes the boss, 35, tilting it upward, as shown in Fig. 2, so that it will pass over the mouth of the branch chute, 29, onto the upper face of the partition, 30, and into the main chute, 25. Should a metallic washer be inserted in the chute, said washers as is well known having a central opening, as soon as sufficient of the body of the washer has passed over the boss, 35, to register said boss with the washer-opening it permits the forward edge of the washer to drop vertically downward and into the mouth of the branch chute, 25, preventing it from entering into the main chute at all; whereas, as described the whole coin or disk will pass over the mouth of said branch being directed upward by said boss. The coin which passes into the main chute falls onto the pan, *t*, and thence into a pocket of the disk, 75. The pan by contact of the coin drops, releasing the ratchet, *p*, and permits the weight of the articles, *k*, which have previously been disposed in the notches, *h*, of the wheel, D, to rotate said wheel the distance of one tooth. At the same time the wheel, 16, on the shaft engages the cam, 17, on the arm, *v*, rocking the shaft, *w*, and throwing the plate, *z*, out of the path of the article, *k*, which drops into the successive empty notch of the wheel. The counterbalance, 15, immediately reciprocates the shaft, *w*, forcing the stop-plate across the chute-mouth again and the counterbalance, *q*, reciprocates the ratchet, *p*, locking the ratchet-wheels, *m*, against further movement until the pan is again depressed.

All the necessity of employing springs for tensioning or reciprocating the parts is avoided by my improvements and the delivery wheel as will be seen is actuated entirely by gravity.

It will be understood that several of the peripheral notches at the left of the shaft, *v*, are at all times filled by the articles, *k*, and that as the machine is operated and the delivery-wheel advances the distance of one of these articles, the lower article, *k*, passing the shield, 20, drops from the wheel into the chute, F, and sliding therein opens the valve, 22, and is delivered from the mouth, 21, of said chute through the cover.

I do not confine myself to employing the disk, 75, as it may be dispensed with, if desired, although I deem its use preferable; nor do I confine myself to employing any particular form of receiving pocket or notch in the delivery-wheel, nor to any special form of wheel. The serpentine-chute may also be substituted by a straight-chute, if desired. The branch, 29, of the coin-chute may be entirely dispensed with so that the mouth of said branch will be simply a hole through the bottom of the main-chute, H, or a plain coin-chute may furthermore be employed without departing from the spirit of my invention, a salient feature of which is comprised in a delivery-wheel which may be actuated by the weights of the articles to be delivered and a coin-released locking mechanism for said wheel.

Having thus explained my invention, what I claim is—

1. In a coin-operated dispensing-machine, the gravity-actuated dispensing wheel provided peripherally with a series of receptacles

adapted to receive and carry a determined number of the articles to be dispensed in combination with a chute for delivering the articles to said wheel; a stop for said chute; and a locking mechanism for said wheel, said stop and locking mechanism being conjointly actuated by the impact of a coin.

2. In a coin-operated dispensing machine, the wheel, D, provided peripherally with receptacles, *h*, adapted to contain the article to be dispensed and chute, C, discharging into said receptacles in combination with the coin actuated ratchet engaging a ratchet wheel on the shaft of said wheel, D, and a stop for said chute actuated by the rotation of said shaft, and a guard, 20, covering the mouths of a determined number of said receptacles, substantially as and for the purpose set forth.

GEORGE F. GALE.

Witnesses:
K. DURFEE,
O. M. SHAW.