R. B. CRAIG & A. L. COFFMAN.

AUTOMATIC VENDING MACHINE.

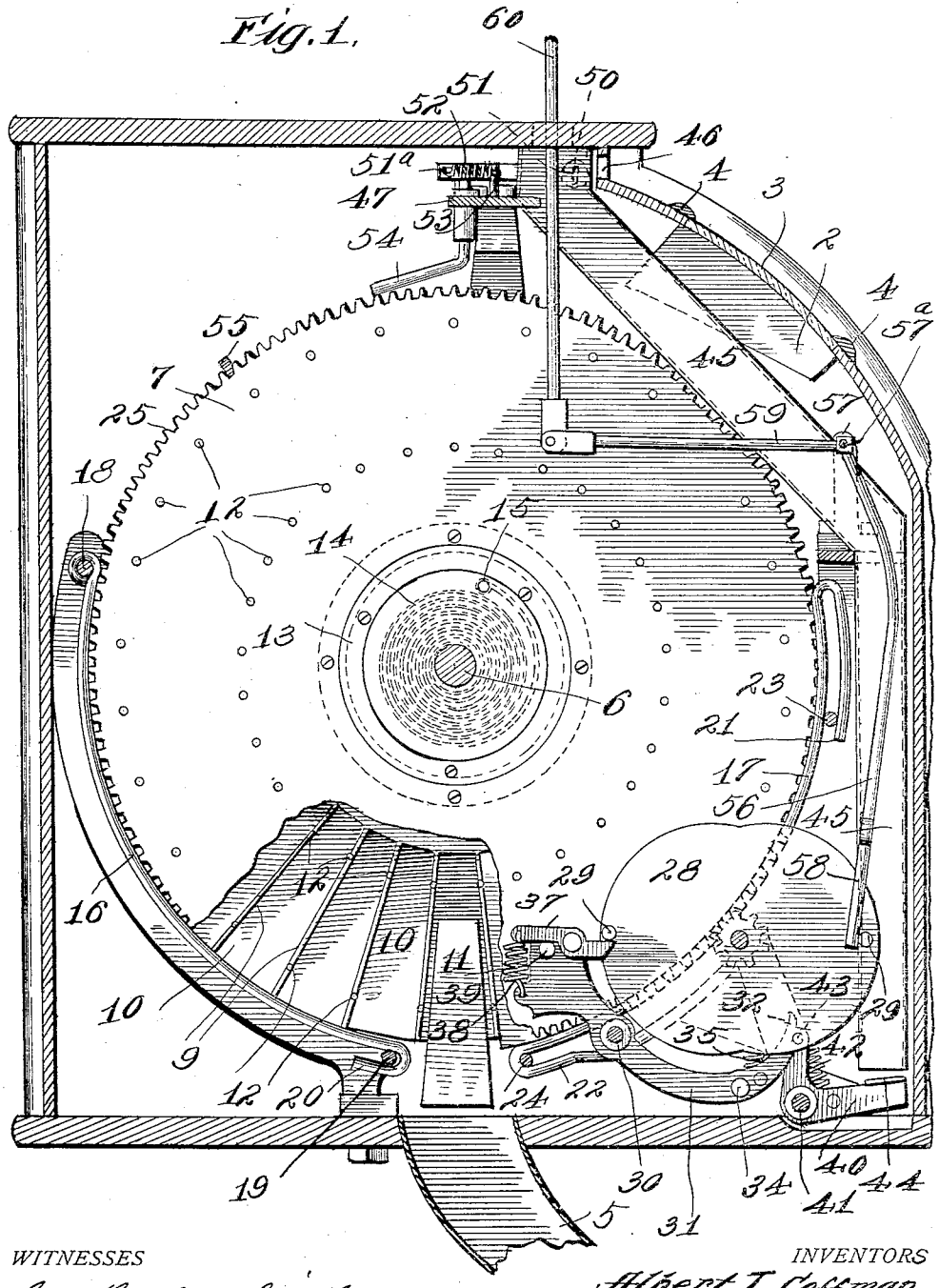
APPLICATION FILED DEC. 22, 1911.

1,065,029.

Patented June 17, 1913.

5 SHEETS—SHEET 1.

Fig. 1.



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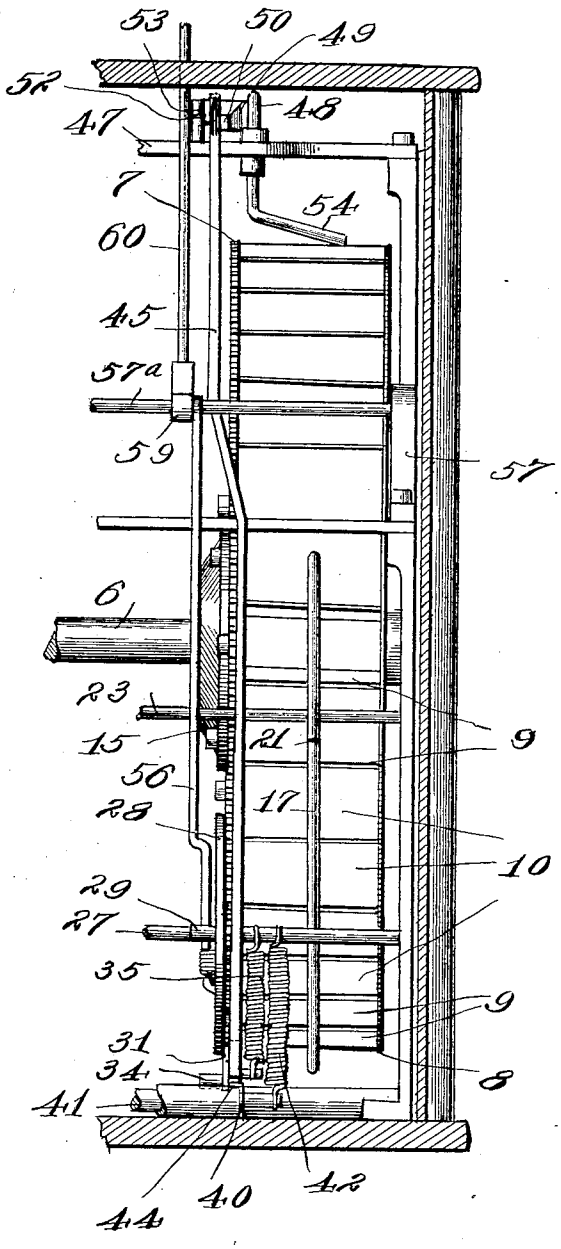
5 SHEETS—SHEET 2.

Fig. 2.



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5 SHEETS—SHEET 3.

Fig 3.

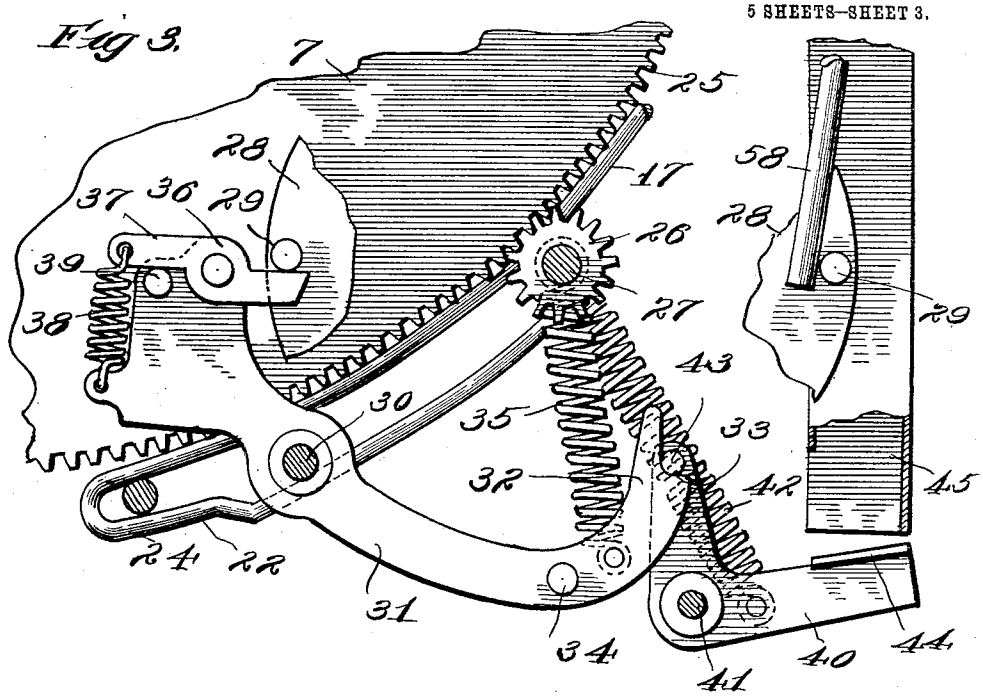
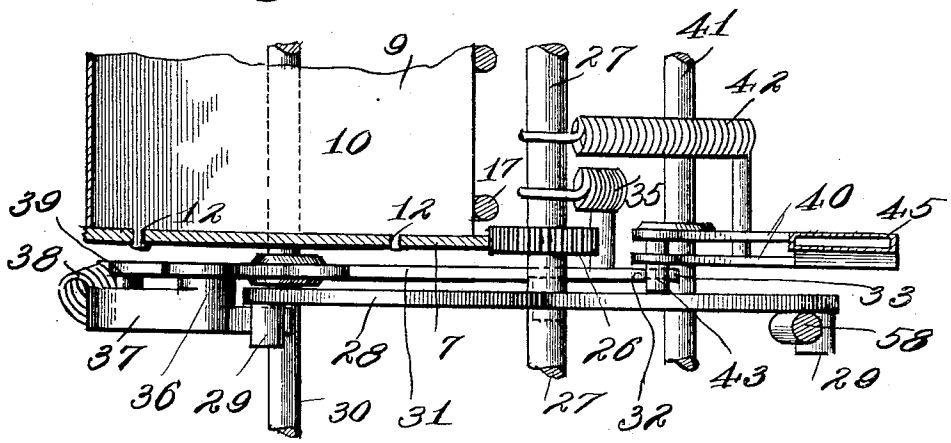


Fig. 4.



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5 SHEETS—SHEET 4.

Fig. 5.

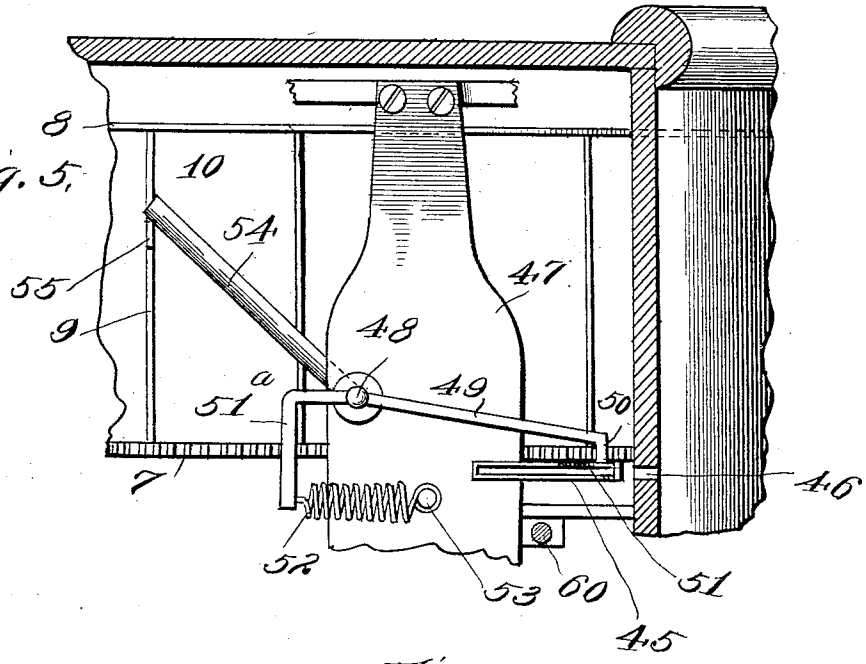
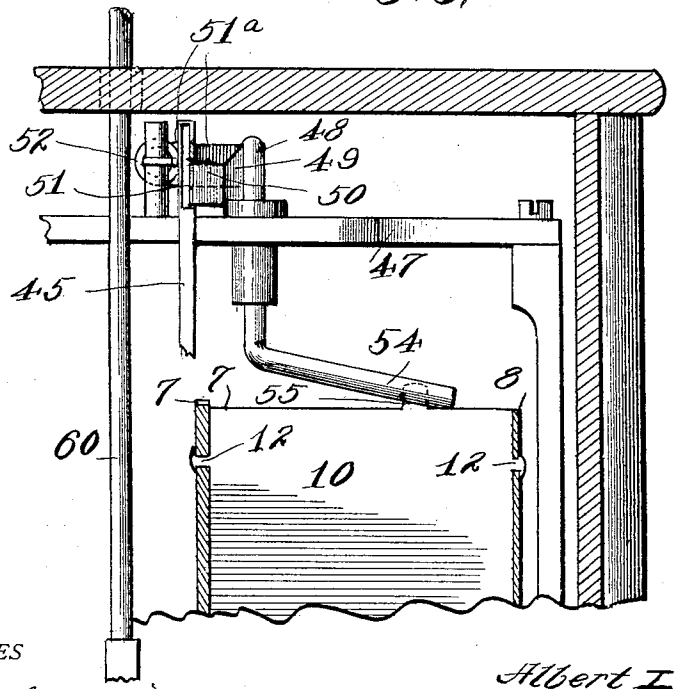


Fig. 6.



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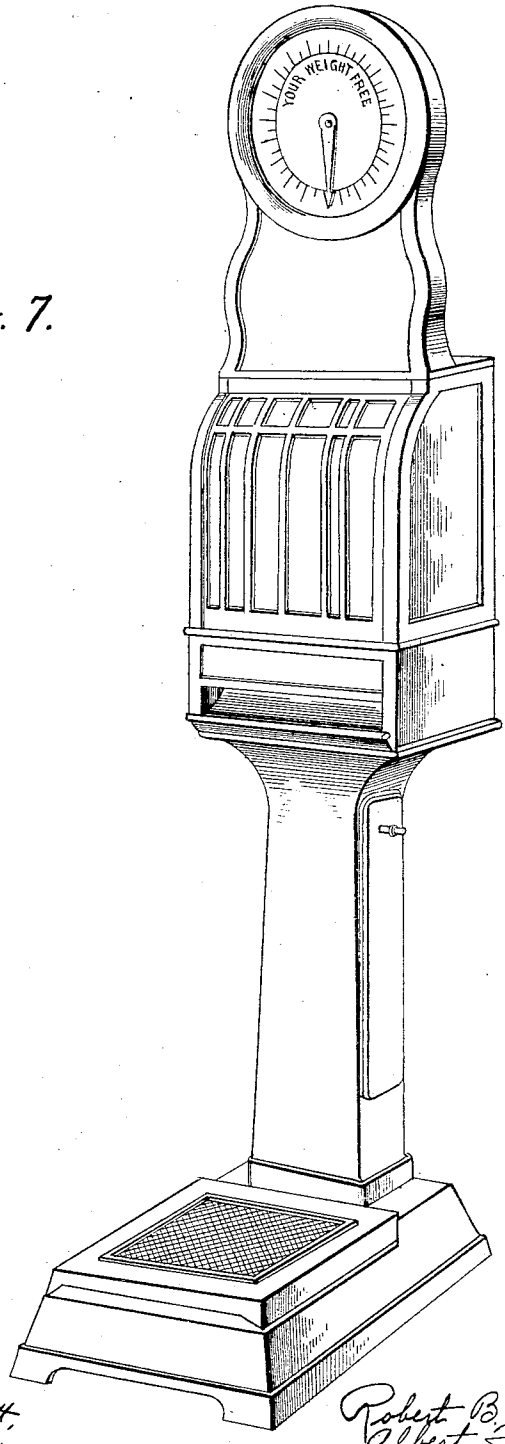
5 SHEETS—SHEET 5.

Fig. 7.



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UNITED STATES PATENT OFFICE.

ROBERT B. CRAIG AND ALBERT L. COFFMAN, OF KANSAS CITY, MISSOURI, ASSIGNORS TO THE AUTOMATIC SCALE VENDING COMPANY, OF SANTA FE, NEW MEXICO, A CORPORATION OF NEW MEXICO.

AUTOMATIC VENDING-MACHINE.

1,065,029. Specification of Letters Patent. Patented June 17, 1913.

Application filed December 22, 1911. Serial No. 667,391.

To all whom it may concern:

Be it known that we, ROBERT B. CRAIG and ALBERT L. COFFMAN, citizens of the United States, and residents of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Automatic Vending-Machines, of which the following is a specification.

The object of our invention is to provide an automatic vending machine which is simple in construction, durable and effective.

A further object of our invention is to combine our vending machine with a weighing scale in such manner that the operation of the vending machine not only delivers a package of merchandise, but releases the scale so that the scale may indicate the weight of the purchaser of the merchandise; and with these and other objects in view, our invention consists of the parts and combination of parts as will be hereinafter more fully set out.

In the drawing, Figure 1 is a vertical longitudinal section through the vending machine, parts being shown in elevation; Fig. 2 is a vertical transverse section through the vending machine, parts being in elevation; Fig. 3 is an enlarged detail view; Fig. 4 a top plan view of the same; Fig. 5 is an enlarged top plan view of the coin slot closing mechanism; Fig. 6 is a side elevation of the same, parts being in section; and Fig. 7 is an elevation of a combined weighing and vending machine embodying our invention.

1 represents a casing of suitable construction which is provided in its front wall with a pocket 2, adapted to hold and display a sample package of the goods contained in the machine. This pocket is closed by means of a glass top 3 held in position by the cleats 4.

5 is the discharge opening through which merchandise is delivered from the interior of the case.

6 is a shaft suitably journaled in the case, on which is mounted the merchandise holder, which holder consists of two disks 7 and 8, between which are positioned a series of partitions 9 forming pockets 10, opening at the periphery of the disks 7 and 8, in which the packages 11, of merchandise, are adapted to be received. The disks 7 and 8 are secured together by means of stay rods 12, which preferably pass through the partitions 9. Mounted on the disk 7 is a casing 13 within which is a coil spring 14, one end of said coil spring being secured by means of the post 15, to the disk 7, while the other end is suitably secured to the shaft 6.

In order to hold the packages of merchandise within the pockets 10 below the center of the carrier, composed of the disks 7 and 8, we provide wires or other suitable retainers 16 and 17. One end of the retainer 16 is coiled around the pin 18, while the other end is rebent and fitted around the pin 19, the rebent end 20 being parallel with the body of the wire and forming, in effect, a slot for the pin 19. The wire 17 is rebent at both ends as at 21 and 22, and is fitted over pins 23 and 24.

The periphery of the disk 7 of the carrier, is provided with teeth 25 adapted to intermesh with the teeth of the pinion 26, which is mounted upon a suitable shaft 27.

28 is a cam disk keyed upon the shaft 27 and provided with stop pins 29. In this connection, it is to be noted that the number of stop pins carried by the disk 28 is dependent upon the number of pockets formed in the merchandise carrier.

30 is a shaft suitably mounted in the case, upon which is mounted a lever 31, the forward end of which is upturned as at 32 and is provided with a shoulder 33 constituting a stop.

34 is a pin projecting from one side of the lever 31 which will be hereinafter more specifically referred to. The forward end of the lever 31 is connected by means of a coil spring 35 to the shaft 27. On the rear end of the lever 31 is pivotally mounted a dog 36 having a tail extension 37 which is connected to the rear end of the lever by means of the coil spring 38.

39 is a stop to limit the downward movement of the tail 37 of the dog 36.

40 is a bell-crank lever mounted on the shaft 41 and connected to the shaft 27 by means of a coil spring 42. The bell-crank lever 40 is provided on one of its arms with a stop pin 43 and on its other arm with an

enlargement 44, adapted to receive a coin dropping from the coin chute 45. This coin chute extends to the top of the casing 1 and is provided with a suitable opening, registering with the coin opening 46 in the casing 1 at the top of the machine. 47 is a support connected to the casing at the top and extending transversely of the merchandise carrier wheel, in which is suitably mounted a shaft 48 to which is connected a coin slot closure 49 having its forward end bent as at 50 and adapted to enter the opening 51 and project across the coin slot, thus closing it against the introduction of coins when the machine is empty or out of order. The rear end of the coin slot closure 49 is provided with a right angle portion or tail 51ª, to which one end of a coil spring 52 is connected, the other end of the coil spring being anchored at 53 to the plate or support 47. Connected to the lower end of the shaft 48 is a trigger 54 adapted to be operated by means of a finger 55 formed on one of the partitions 9 so that as the merchandise carrier is revolved and the last package sold, the finger 55 engages the trigger 54, revolves it and its shaft 48, thus throwing the slot closure 49 into the slot. As soon as the machine is refilled, the finger 55 is removed from the path of the trigger 54 whereupon the coil spring 52 revolves the shaft 48 and withdraws the slot closure from the coin slot 45.

56 is a lever keyed to the shaft 57ª, which shaft is mounted in the support 57 in the casing, the lower end of said lever being deflected as at 58 toward the disk 7 so as to bring the lower end of the lever in the path of the pins 29 on the cam disk 28.

59 is an arm keyed to the shaft 57ª, to the outer end of which is pivotally connected the scale releasing member 60 which passes through the top of the casing 1 to a suitable scale mechanism 61.

To load the machine, the front of the casing 1 is removed, then the retaining wire 17 is pushed downward until the bend in the upper end of the wire rests upon the stop pin 23 which brings the lower end of the wire 17 in contact with the lower end of the wire 16, so that all of the pockets 10 below the center of the wheel are closed to prevent packages from falling out of the pockets in this portion of the carrier while the carrier is being filled with the packages of merchandise; it being understood that the wheel is turned backward while being loaded.

As the carrier is turned backward in the process of loading, the spring 14 is wound up and after the wheel is entirely filled the retaining wire 17 is pulled to the normal position shown in Fig. 1.

The machine is now ready for operation. Upon the insertion of a coin in the slot 46 of the casing 1, it falls into the coin slot or conduit 45 and is delivered at the lower end of the conduit on to the enlarged end 44 of the bell-crank lever 40, whereupon the bell-crank lever, by reason of the weight and inertia of the coin is revolved upon its shaft 41 thereby removing the pin 43 from engagement with the stop 33 of the lever 31, whereupon the lever 31 is free to move vertically under the influence of the spring 35. By thus moving the rear end of the lever 31, it is swung in an arc carrying the dog 36 out of the path of the pin 29, whereupon the cam disk 28 is free to revolve by reason of the fact that the spring 14 may now exert its power in revolving the carrier wheel. The revolution of the carrier wheel causes the pinion 26 to revolve, and as the cam disk is keyed on the shaft of the pinion 26, it also is revolved bringing the high portion of the cam in contact with the pin 34 which depresses the forward end of the lever 31 so as to bring the retaining dog 36 again in the path of the pins 29 of the cam disk 28. Before the next pin 29 of the cam disk comes into contact with the retaining dog 36, the other pin 29 engages the deflected end 58 of the lever 56, whereupon said lever is moved, thus revolving the shaft 57ª which in turn moves the lever 59, thereby elevating the scale releasing rod 60 and releasing the scale mechanism, whereupon the scale is free to record the weight of the purchaser so that the purchaser receives for the token introduced into the machine, not only the package of merchandise but an indication of his weight. The lower end of the lever 56 is deflected so that as the disk 28 is revolved, the pins 29 may pass from contact with the lever above the deflected portion. As the disk 28 revolves and one of the pins 29 come in contact with the dog 36, the spring 38 absorbs the shock incident to the contact between the dog and the pin. After the coin rolls off of the bell-crank lever, the spring 42 returns the lever to the normal position shown in Fig. 3, thus resetting the pin 43 in the stop 33 of the lever 31 and locking the parts for a subsequent operation.

61 is a scale of suitable construction, the indicating mechanism of which is controlled by the rod 60.

In the claims we shall refer to the disks 7 and 8 and the pockets 10 as a carrier.

We claim:—

1. In a vending machine, the combination with a carrier, and a gear wheel carried by said carrier, of a pinion meshing with said gear wheel, a cam operated by said pinion, a stop for said cam and a lever controlling said stop.

2. In a vending machine, the combination with a carrier and a gear wheel carried by said carrier, of a pinion meshing with said

gear wheel, a cam operated by said pinion, a lever and a stop carried by said lever for controlling the movement of the cam, and a second lever controlling the movement of the first named lever.

3. In a vending machine, the combination with a spring impelled carrier, and a gear wheel for imparting movement from said carrier, of a pinion meshing with said gear wheel, a cam operated by said pinion, a lever and a stop carried by said lever for controlling the movement of the cam and carrier, and a second lever controlling the movement of the first named lever.

4. In a vending machine, the combination with a carrier, and a gear wheel, of a pinion meshing with said wheel, a cam disk mounted on the shaft of said pinion, a lever, a stop mounted on said lever to limit the movement of said cam, a second lever controlling the movement of the first named lever, and a pin on the first named lever in the path of the cam, whereby the stop is reset after each operation of the cam.

5. In a vending machine, the combination with a carrier and a gear wheel moved by said carrier, of a pinion meshing with said gear wheel, a cam disk mounted on the shaft of said pinion, stops on said disk, a lever, a dog carried by one end of said lever in the path of the cam stops, a pin carried by the other end of said lever in the path of said cam, whereby the lever is reset after each movement of the cam, and a second lever controlling the movement of the first named lever.

6. In a vending machine, the combination with a carrier, of a cam disk operable by said carrier, pins on said disk, a lever, a dog pivotally mounted on said lever in the path of the pins on the cam disk, a tail extending from said dog, a spring connecting said tail to said lever and a stop on the lever to limit the downward movement of said tail, said spring acting as a shock absorber for the dog when the pin on the cam disk contacts with said dog.

7. In a vending machine, the combination with a carrier having pockets in its periphery and revolubly mounted upon a shaft, a spring, one end of which is secured to said shaft and the other to said carrier whereby the spring may be wound up by the backward movement of the carrier, and gear teeth formed on the periphery of the carrier, of a pinion meshing with said gear teeth, a cam disk mounted on the shaft of said pinion, pins carried by said disk, a lever pivotally mounted, a dog pivotally mounted on said lever and extending in the path of the pins on said disk, a tail extending rearwardly from said dog and secured to said lever by means of a coil spring, a stop on the lever to limit the downward movement of said tail, a pin on said lever in the path of the cam disk whereby the dog is reset in the path of the pins on said disk after each operation, a spring connecting the forward end of said lever to the pinion shaft, a second lever carrying a stop in the path of the first named lever, and a spring connecting said second lever to the pinion shaft.

8. In a combined weighing and vending machine, the combination with a carrier, of a cam disk operable by said carrier, pins on said disk, a lever positioned in the path of said pins and keyed to a shaft in the machine, a second lever keyed to the same shaft and a rod pivotally mounted on said second named lever and extending to a weighing mechanism for controlling the same.

The foregoing specification signed at Kansas City, Mo. this 1st day of December, 1911.

ROBERT B. CRAIG.
ALBERT L. COFFMAN.

In presence of two witnesses:
W. IRVING LAKE,
LUCENE WHEELER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."