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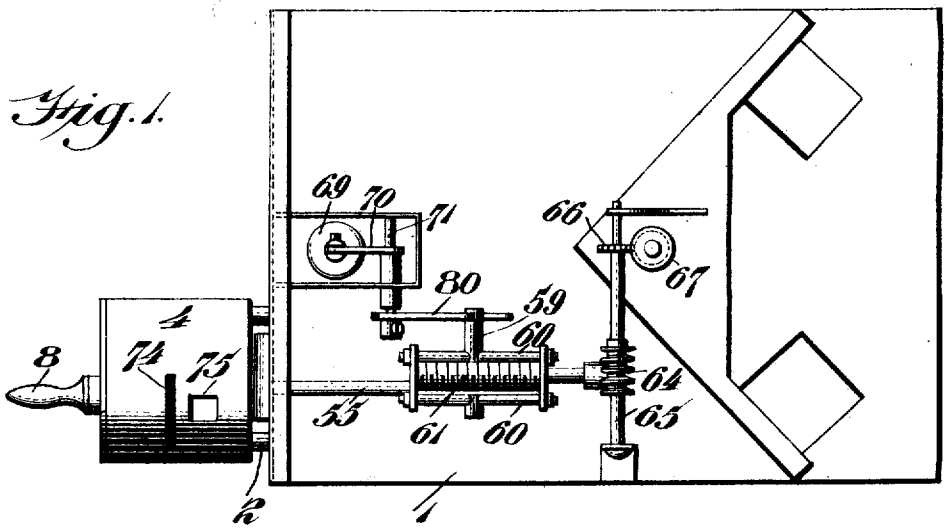
COIN CONTROLLED GASOMETER.

APPLICATION FILED SEPT. 16, 1907.

904,957. **Patented Nov. 24, 1908.**

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.



Fig. 12.

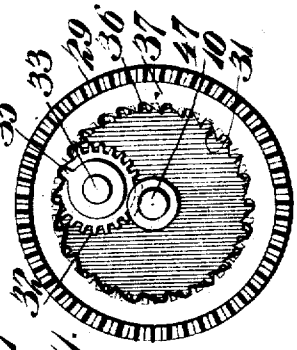


Fig. 11.

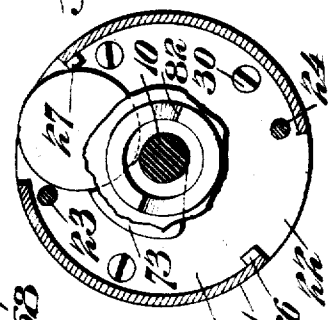


Fig. 10.

Fig. 2.

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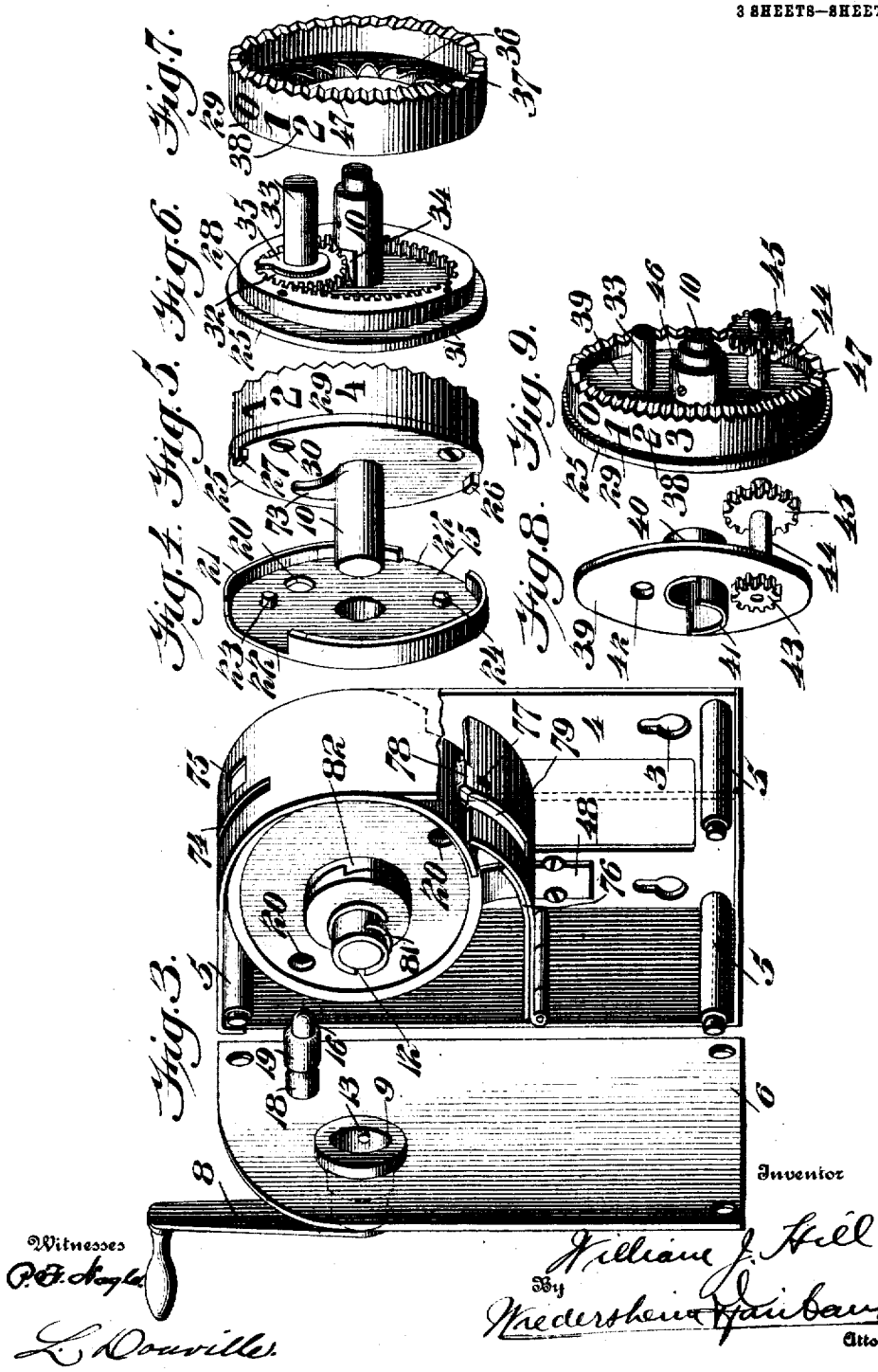
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3 SHEETS—SHEET 3.



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COIN-CONTROLLED GASOMETER.

No. 904,957. Specification of Letters Patent. Patented Nov. 24, 1908.

Application filed September 16, 1907. Serial No. 392,998.

To all whom it may concern:

Be it known that I, WILLIAM J. HILL, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Coin-Controlled Gasometer, of which the following is a specification.

My present invention relates to coin controlled vending machines and since my invention is especially adapted for use in connection with prepayment gasometers, I have p: ed to illustrate the same in conjunction therewith, wherein by the insertion of a coin of proper dimensions, the fluid inlet valve is opened a predetermined distance, said valve being automatically closed during the normal working of the meter after the prepaid supply of fluid has been furnished.

To the above ends my invention consists of a novel construction of coin controlled mechanism for fluid meters or vending machines.

It further consists of a novel construction of coin controlled mechanism in which means are provided for preventing any tampering with the apparatus by unauthorized persons.

For the purpose of illustrating my invention, I have shown in the accompanying drawings, a preferred form thereof, since this embodiment gives satisfactory and reliable results in practice, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown.

Figure 1 represents a plan view of a coin controlled gasometer embodying my invention, certain parts thereof having been removed for the sake of clearness of illustration. Fig. 2 represents a sectional elevation having certain parts removed. Fig. 3 represents a perspective view of a portion of my device, certain parts being shown detached for clearness of illustration. Figs. 4, 5, 6, 7, 8 and 9 represent perspective views of different parts of the coin controlled mechanism in detached position. Fig. 10 represents a sectional plan view showing the manner in which a coin of proper dimensions locks the disks together. Fig. 11 represents an end view of Figs. 6 and 7 in assembled position. Fig. 12 represents a sectional view of the spring pressed plunger and its adjuncts.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates the meter casing which has extending therefrom, the studs 2, which are adapted to engage the apertures 3 in the casing 4, whereby the latter may be removably secured to the meter casing 1.

The casing 4 is provided with the rods or studs 5, which pass through the front plate 6 of said casing and are secured in place by means of nuts or equivalent devices 7.

8 designates an actuating handle or lever which is provided with a boss 9 into which one end of the shaft 10 extends, said shaft having mounted thereon, a clutch collar 11 which is provided with a groove or recess 12 into which a pin 13 carried by the boss 9 is adapted to extend, in order to prevent relative rotation of said boss and said clutch collar.

The shaft 10 has its outer end preferably reduced and journaled in the casing 4, said shaft being maintained in proper position with respect thereto by means of a nut 14 having threaded or other engagement therewith.

81 designates a spring interposed between the boss 9 and a suitable portion of the clutch member 11, whereby said clutch member is normally maintained in engagement with a clutch member 82 carried by a rotatable disk 15, which is loosely mounted on the shaft 10.

16 designates a plunger against which the tension of a spring 17 is exerted, said spring being contained within a casing 18 carried by the front plate 6, and a suitable cap 19 being provided in order to limit the outward movement of the plunger 16. The plunger 16 is adapted to engage with one or the other of the apertures 20 in order to prevent, at certain times, the rotation of the disk 15.

The disk 15 as most clearly seen in Fig. 4 is provided with a flange 21 on its periphery, which is cut away as indicated at 22 on opposite sides thereof, whereby a coin of the proper dimensions may be inserted therethrough.

23 and 24 designate pins or studs carried by the disk 15 in proximity to the cut away portions 22 of the flange 21.

25 designates a disk loosely mounted on the shaft 10, said disk being provided with

the diametrically opposed studs or pins 26 and 27. The disk 25 has its periphery reduced as is indicated at 28, whereby an indicating drum 29 may be seated thereon. The member 25 has secured thereto, by means of the set screws or equivalent devices 30, the internal gear 31, with which is adapted to mesh a gear 32 carried by a rod 33, it being noted that the shaft 10 is cut away as indicated at 34 in order that the gear 32 may freely rotate. The rod 33 has also rigidly mounted thereon, the stud or one toothed wheel 35, which engages at certain times with one of the teeth 36 carried by the internal flange 37 of the ring member 29, as will be clearly apparent from Figs. 6, 7 and 11.

The ring member 29 is adapted to have indicated thereon, as at 38, any signs or reference numerals which indicate the amount of fluid which the device is adapted to measure or the number of coins deposited.

39 designates a disk, the periphery of which is adapted to engage the inner periphery of the ring member 29, said disk having extending therethrough, a cylindrical tube or hub 40, which is cut away as indicated at 41 in order that it will not interfere with the rotation of the pinion or gear 32. The disk 39 is provided with an aperture 42, which serves as a bearing for the rod 33.

43 designates a pinion mounted on a shaft 44, which latter is journaled in the disk 39, said pinion 43 being adapted to mesh with the internal gear 31.

45 designates a gear mounted on the shaft 44 and adapted to mesh with the idler 49 when the device is assembled.

The members 25 and 39 are maintained in their assembled position by means of a pin 46 which passes through the tube 40 rigidly secured to the disk 39 and also through the shaft 10.

47 designates teeth on the ring member 29 with which the free end of a spring 48 is adapted to engage when the parts are assembled to prevent improper rotation of the indicator drum 29, it being noted that said spring 48 has one end secured in any suitable manner to the casing 4.

The ends of the shafts 33 and 10 are suitably journaled in the casing 4, as will be readily apparent from Fig. 2.

Referring now to Fig. 2, it will be seen that the gear 45 meshes with a gear 49 carried by a stud 50 mounted on a plate 51 carried by the casing 1, said gear 49 in the present instance serving as an idler and meshing with an idler 52 carried by a stud 53 supported by the plate 51. The idler 52 meshes with a pinion 54 mounted on a shaft 55 journaled in the casing 1. The shaft 55 is provided with and has secured thereto, a worm shaft 56 journaled in the standards 57, said gear, in the present instance, having a right hand thread thereon, with which meshes a worm wheel 58 mounted on a shaft 59, the ends of which are loosely mounted on the cross rods 60 carried by the standards 57. The worm wheel 58 also meshes with a worm 61 journaled in the standards 57 and having integral therewith or secured thereto, a shaft 62 provided with a pinion 63, which meshes with a worm 64 on a shaft 65, whereby the pinion 66 on said shaft drives the worm 67 which is controlled by the mechanism actuated by the fluid passing from the machine.

68 designates the fluid inlet opening which is controlled by the valve 69, which is pivoted to one end of a lever 70, which latter is fulcrumed at 71. The lever 70 is provided, at its outer end, with the angularly inclined or cam slot 72 in which one end of the shaft 59 extends, whereby on the lateral movement of said shaft, the valve 70 will be raised or opened depending upon the direction of such movement.

73 designates a cam member rigidly mounted on the shaft 10 for engagement with the coin, as shown clearly in Fig. 10.

The casing 4 is provided with a coin aperture 74 and an aperture 75 through which the data on the ring member 29 may be seen.

76 designates a plate or cover which has one end hinged to the casing 4, the other end thereof being provided with an aperture 77, whereby it may be sealed to the catch 78 carried by a portion of the casing 4 so that after the coins have passed from the machine and dropped through the coin aperture 79 into the lower part of the casing, access to the indicator cannot be had without first breaking the above mentioned seal.

The operation of my apparatus will now be readily apparent. When the actuating handle or lever 8 is rotated to the left, it will be evident that the clutch member 11 will ride over the clutch member 82, so that the member 15 will not be rotated. When a coin of proper dimensions is inserted in the coin slot 74, it will engage one of the pins 23 or 24 and one of the studs 27 or 26 carried by the member 25, as will be readily apparent from Fig. 10. If the actuating lever 8 is now rotated to the right, the member 25 will be rotated therewith, thereby causing the internal gear 31 to rotate, and the latter coacting with the gear 32 will cause said gear 32 to be rotated and as the stud 35 makes one complete revolution, it will cause the drum 29 to be rotated one tooth, said member 29 being prevented from rotating in a reverse direction owing to the employment of the spring stop 48. Since the pinion 43 meshes with the internal gear 31, as the latter rotates, the pinion 43 will rotate in unison therewith, thereby causing the gear 45 to be rotated and owing to the employment of

the co-acting idlers 49 and 52, the pinion 54 mounted on the shaft 55 will cause the shaft 55 to be correspondingly rotated. The rotation of the shaft 55 causes the worm 56 to rotate, thereby causing the rotation of the worm wheel 58 and since the shaft 59 on which the worm wheel is mounted engages the angular slot or recess in the lever 70, said lever will be rocked on its fulcrum 71 thereby causing the inlet valve 69 to be raised and permit the fluid to pass through the meter. It will now be understood that as the fluid passes from the machine, the pinion 63 will be actuated in the usual manner, thereby causing the worm 61 to rotate and the worm wheel 58 to return to its initial or left hand position, thereby causing the inlet valve 69 to close.

It will now be apparent to those skilled in the art that I have devised a novel and useful construction of coin controlled mechanism for gas meters and similar mechanisms which embody the features of advantage enumerated as desirable in the statement of invention and the above description and while I have, in the present instance, shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit and scope of the invention or sacrificing any of its advantages.

It is of course to be understood that the casing which incloses the operating mechanism may be provided with any desired type of doors or other mechanism whereby access may be had at a desired time to the money box or other receptacle in which the coins fall after passing between the rotatable disks.

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

1. In a meter mechanism, a stationary shaft, a driven disk loosely mounted thereon, valve-controlling mechanism actuated by said driven disk, actuating means for said driven disk, a second disk on said shaft, a valve, a valve-carrying lever and means operatively connected with first-named disk and embodying a worm and worm shaft and means acting upon said lever for controlling the valve.

2. In a meter mechanism, a stationary shaft, a driven disk loosely mounted thereon, valve controlling mechanism actuated by said driven disk, actuating means for said driven disk, an indicator actuated by said driven disk, a drum, a stud for rotating said drum one tooth at each complete revolution of the stud, and means for preventing rotation of said drum in the reverse direction.

3. In a meter mechanism, a stationary shaft, a driven disk loosely mounted thereon, a gear carried by said driven disk, a second gear coacting therewith, a stud carried by said second gear, a registering mechanism actuated by said stud to be rotated one tooth at each complete revolution of the stud, and actuating means for said driven disk.

4. In a meter mechanism, a stationary shaft, a driven disk loosely mounted thereon, actuating means for said disk including a clutch mechanism, valve controlled mechanism embodying a valve-carrying lever having an angularly inclined slot, said valve controlling mechanism being operatively connected with said lever, and means for driving said mechanism from said disk.

5. In a meter mechanism, a stationary shaft, a driven disk loosely mounted thereon, actuating means for said disk including a clutch mechanism, valve controlled mechanism embodying a valve-carrying lever having an angularly inclined slot, said valve controlling mechanism being operatively connected with said lever, means for driving said mechanism from said disk, and a registering device actuated by said driven disk.

6. In a meter mechanism, a stationary shaft, a driven disk loosely mounted thereon, means for actuating said disk, an indicating mechanism, and means interposed between said disk and mechanism involving a valve-carrying lever with an inclined slot and the valve of the meter for actuating said indicating mechanism.

7. In a meter mechanism, a stationary shaft, a driven disk loosely mounted thereon, means for actuating said disk, an indicating mechanism, means interposed between said disk and mechanism involving a valve-carrying lever with an inclined slot and the valve of the meter for actuating said indicating mechanism, and means coöperating with said indicating mechanism to prevent retrograde movement thereof.

8. In a meter mechanism, a support, a plurality of worms mounted therein, a worm wheel coacting with said worms, a non-rotatable shaft for said wheel, a lever having a cam slot into which said shaft extends, a valve controlled by said lever, one of said worms being adapted to be actuated by the bellows in the gas meter, and means for actuating the other of said worms.

9. In a meter mechanism, a shaft, a disk loosely mounted thereon, actuating means therefor including a clutch mechanism adapted to rotate said disk in one direction only, and valve controlling mechanism embodying a valve-carrying lever having an angularly inclined slot, said mechanism being actuated by said disk.

10. In a meter mechanism, a stationary shaft, a disk loosely mounted thereon, a registering drum carried by said disk, an internal gear carried by said disk, valve control-

ling mechanism embodying a valve-carrying lever having an angularly inclined slot, said mechanism being actuated by said gear, means for preventing rearward movement of said registering drum, and means for actuating said disk including a clutch mechanism.

11. In a meter mechanism, a stationary shaft, a disk loosely mounted thereon, an internal gear carried by said disk, valve controlling mechanism embodying a valve-carrying lever having angularly inclined slot, said mechanism being actuated by said gear, a registering drum carried by said disk and provided with ratchet teeth, a spring adapted to coact with said ratchet teeth to prevent rearward movement of said drum, and means including a clutch mechanism for rotating said disk.

12. In a meter mechanism, a shaft, a disk loosely mounted thereon, a gear carried by said disk, a pinion co-acting with said gear, a second gear actuated by said pinion, a worm, a pinion thereon operatively connected with said second gear, a valve actuated by said worm, said valve being adapted to be closed by the fluid passing from the machine, and means for actuating said disk.

13. In a meter mechanism, a stationary shaft, a disk thereon, an internal gear carried by said disk, a registering drum mounted thereon having a toothed flange, a gear co-acting with said internal gear, a stud carried by said gear, said stud being adapted to co-act with the teeth of said flange, means for preventing rearward movement of said drum, valve controlling mechanism actuated by said internal gear, and means for actuating said disk.

14. In a meter mechanism, a stationary shaft, a disk loosely mounted thereon, an internal gear carried thereby, a second disk loosely mounted on said shaft, a shaft mounted in said second disk, a pinion carried by said last named shaft and co-acting with said gear, a gear carried by said shaft, a train of gears driven by said second gear, a worm driven by said train of gears, a worm wheel having a non-rotatable shaft actuated by said worm, a valve adapted to be opened by said non-rotatable shaft, and means for actuating said first mentioned disk.

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