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M. KING & J. E. JAMES.

COIN SLOT METER AND MACHINE.

APPLICATION FILED DEC. 7, 1905.

Fig. 1

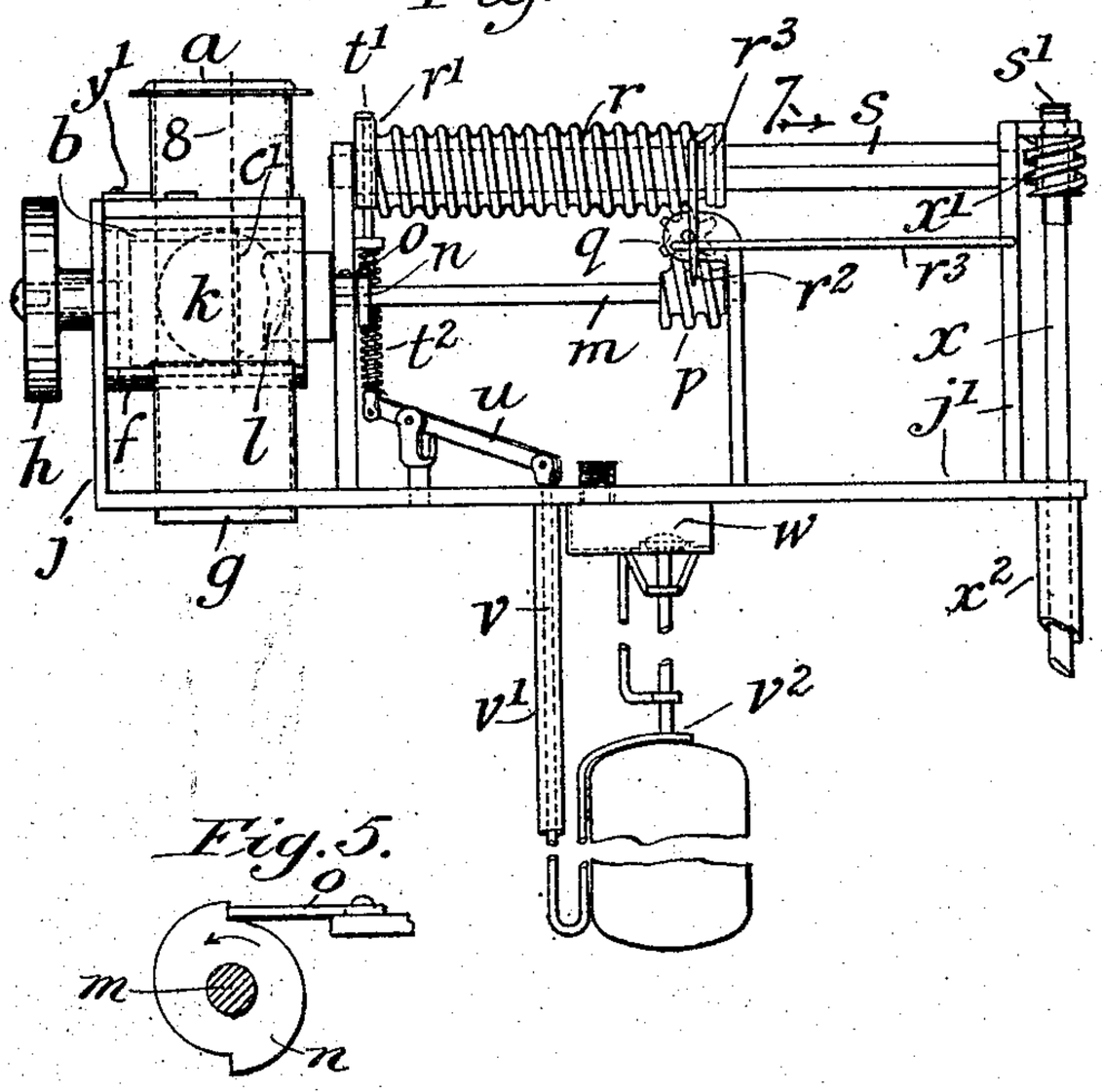


Fig. 3

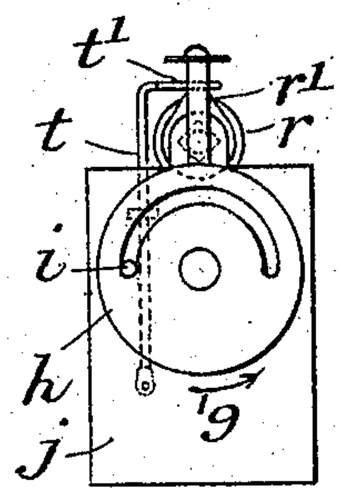


Fig. 5.

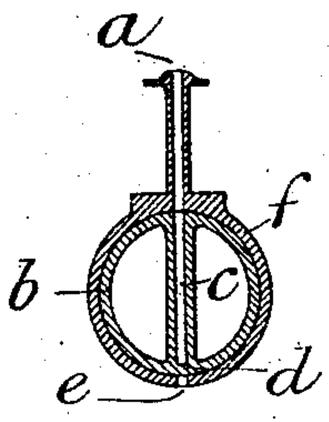


Fig 2

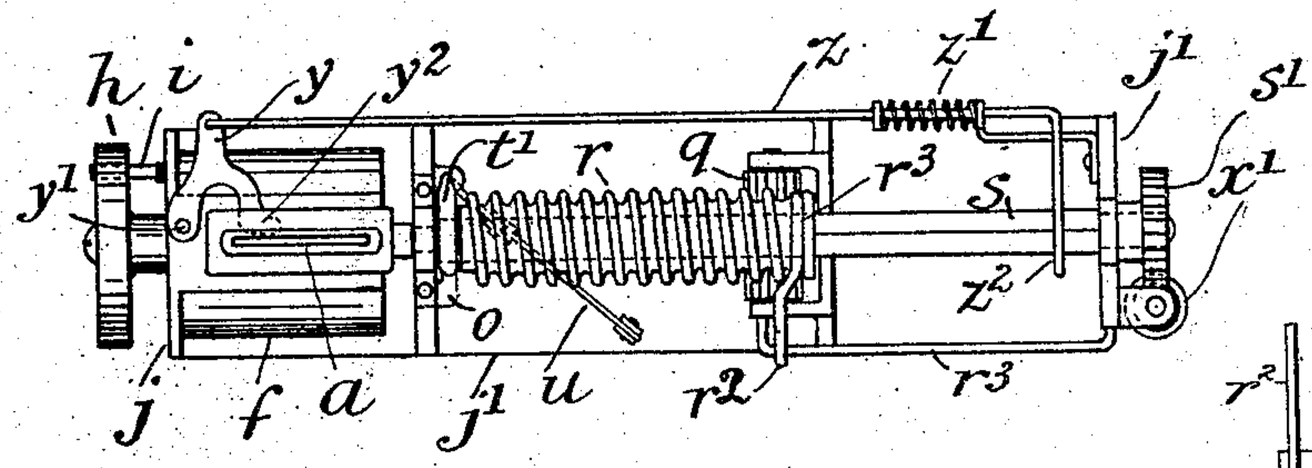
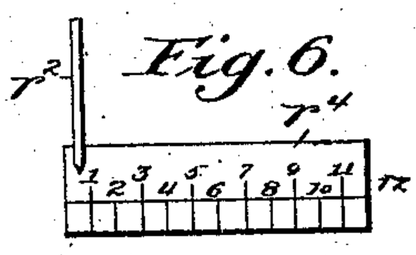


Fig 4

Fig. 6.



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COIN-SLOT METER AND MACHINE.

No. 855,061. Specification of Letters Patent. Patented May 28, 1907.

Application filed December 7, 1905. Serial No. 290,704.

To all whom it may concern:

Be it known that we, MICHAEL KING, a subject of the King of Great Britain and Ireland, &c., residing at Wickham, in the State of New South Wales, Commonwealth of Australia, and JOHN EDWARD JAMES, a subject of the King of Great Britain and Ireland, &c., residing at Islington, in the State of New South Wales, Commonwealth of Australia aforesaid, have invented certain new and useful Improvements in Coin-Slot Meters and Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention comprises improvements in coin slot machines, for example penny in the slot gas meters, of which we know none quite satisfactory.

Our device is not delicate, not expensive, and is easy to attend to. The coins do not choke in it, and neither too much or too little gas is allowed for the prepayment, as the gas valve closes and opens readily, for we dispense with glands which when used cause difficulties in working.

If coins be inserted in immediate succession the device will not choke; each coin will in turn be made to operate the mechanism to allow the flow of an equivalant in gas (which word hereinafter includes any analogous commodity). A predetermined number of coins (for example twelve) can be inserted one after another to prepay for a corresponding quantity of gas at will, and an indicator will show the prepayment in respect of which gas is consumable.

The invention, which applies to meters generally, is illustrated as applied to a wet one. We utilize the gas valve to shut off gas when the amount paid for is consumed, and to open when a coin is inserted and a handle operated, (the word coin herein indicating a suitable coin only.) An open slot or chute of a width suiting the diameter of the coin, leads into a carriage, or reversible cylinder, which has a pocket adapted to so receive the coin that part of the latter projects from the pocket into a slot in a revoluble shaft or a lug attached thereto. An external handle is provided for giving a suitable, as a half turn to the carriage, thus turning both coin and shaft, the coin then droping from the carriage to the cash box, at the same time making available in exchange a predetermined amount of gas. When the carriage is empty, the mechanism is not affected by turning of the handle.

This invention is illustrated in the accompanying drawings, to the precise details of which however it is not limited, as there may be sundry modifications. The mechanism is shown apart from a meter, and without the casing, cash box and indicator or dial used.

Figure 1 is a side elevation of parts when all gas paid for has been supplied, the mechanism being locked, but ready to be operated on insertion of a coin; Fig. 2 a plan view of the parts in Fig. 1; Fig. 3 a left end elevation of the parts in Fig. 1; Fig. 4 a vertical transverse section on line 8 Fig. 1; Fig. 5 an enlarged elevation of the ratchet wheel; and Fig. 6 an elevation of the scale.

In these drawings *a* indicates a coin chute or passage, *b* a carriage (shown cylindrical) having coin pocket *c* with base *d* on which the coin may rest, and *e* an aperture in carriage casing *f* for discharge of the coin when the carriage is given a half turn, the coin then dropping as through passage *g* into a cash box.

h shows a handle adapted to turn the carriage and *i* a stop on framing *j* to limit the travel of the handle and carriage so that before the half turn is made the coin can enter the carriage taking the position dotted at *k;* while *l* indicates a slot in a lug on a shaft *m*, having suitable means to prevent the turning of the shaft or lug backward. A ratchet wheel *n* (Fig. 5) having at least two opposite notches or teeth, with a spring pawl or pressure stop *o* is what we use.

c^1 is the end of pocket *c* which is in line with the slot *l*.

The lug is turned a half circle each time a coin is dropped from the carriage.

Mounted on shaft *m* is a worm *p* geared to turn a pinion *q* which engages with a worm *r* slidably mounted on a square or other suitable shaft *s*. Pinion *q* turns and worm *r* slides as per arrow 7 (without turning) a predetermined distance (for example one thread turn) when handle *h* is turned as per arrow 9 if a coin is admitted to and dropped from carriage *b*. Mounted on worm *r* is cam r^1 which before the insertion of the coin holds up end t^1 of arm *t* attached to a lever *u* which has an arm *v* so mounted relatively to float valve *w*

that its motion governs that valve. While cam r^1 holds up arm t, an eye or stop v^2 on arm v keeps the valve float down and so keeps the valve closed so that gas cannot enter the meter but when worm r having cam r^1 slides forward, arm t drops, being assisted or forced down by a spring t^2, or the like. This operates lever u and arm v raising stop v^2 so that the float being free to rise, does so, whereupon valve w opens and admits gas to the meter. When enough gas has been consumed mechanism hereafter explained causes eye or stop v^2 to descend and so close the valve. Arm v is located within a tube v^1 which descends below the meter water level, and forms a water seal, no gland being necessary. A suitably toothed wheel s^1 on shaft s gears with worm x^1 on the meter spindle x by which the usual meter index train is operated. As gas is consumed spindle x turns wheel s^1 consequently shaft s, and pinion q being kept stationary, worm r not only turns but also slides back toward arm t. The pawl pressure on ratchet n is made sufficient to resist any tendency of pinion q to turn. At the end of worm r is a recess, or support for a loose ring r^3 which does not turn with the worm, and which carries a pointer r^2 (Figs. 1 and 6) to indicate on any suitable dial or indicator, such as r^4, Fig. 6 the number of coins inserted in respect of which gas is still consumable. If for example 3 coins were inserted and the worm r thus carried a tance of 3 threads in the direction of arrow 7, the pointer would indicate 3: then when consumption of the gas began, it would indicate in due time 2, then 1, and finally 0. r^3 indicates a guide rail for pointer r^2.

Worm r will have returned to its starting point when all the gas paid for has been consumed and cam r^1 will then have passed under the end t^1 of arm t and raised it thus closing valve w.

Tooth wheel s^1 is changeable, allowing one with more or less teeth to be substituted according to the price of gas, that is the quantity to be supplied for the coin. If a 16 tooth wheel be used when 16 cubic feet of gas are sold for one coin, a 20 tooth wheel would serve when 20 feet were to be sold therefor. z represents a rod (shown in Fig. 2 only) so located that, when the coin effecting the maximum prepayment (for example the twelfth penny) has been inserted, worm r will press end z^2 of rod z and cause the other end of that rod which is connected to a cut off plate y pivoted as at y^1 to swing the said plate so that a lug y^2 on it enters an aperture in the coin chute side, preventing any additional coin descending beyond said lug. Coins of materially deficient diameter if inserted will not engage the slot in lug / nor will they choke the device.

Rod z has means as spring z^1 to return it and plate y to their normal positions after removal of the pressure of worm r. Any coin supported by plate y, can be dropped into the carriage slot when rod z regains its normal position.

x^2 is a tube round x to act as a water seal, and j^1 shows a bed plate and attached framing or the like.

It is well understood that existing inventions perform various functions herein indicated, but in the novel combinations we use there is simplicity, effectiveness and utility.

What we do claim as our invention and desire to secure by Letters Patent of the United States is:—

1. In coin-actuated mechanism, in combination, an operating handle, a worm adapted to be rotated by such handle, a gear adapted to be rotated by said worm, a sliding worm adapted to be moved by said gear, and means for rotating said sliding worm to restore it to its original position.

2. In coin-actuated mechanism, in combination, an operating handle, a worm adapted to be rotated by such handle, a gear adapted to be rotated by said worm, a sliding worm adapted to be moved by said gear, a shaft upon which said gear slides, a gear carried by said shaft, and a worm adapted to rotate said gear.

3. In coin-actuated mechanism, in combination, an operating handle, a worm adapted to be rotated by said handle, a gear adapted to be rotated by said worm, a sliding worm moved by said gear, an actuating part arranged adjacent to the normal position of said sliding worm, and a cam mounted on said sliding worm and adapted to be rotated by the latter to move said actuating part.

4. In coin-actuated mechanism, in combination, an operating handle, a rotatable worm arranged in direct line with said operating handle and a gear rotated by said worm, a sliding worm adapted to be moved by said gear, a shaft on which said sliding worm is mounted, a pinion at the end of said shaft, and a third worm for operating said pinion.

5. In coin-actuated mechanism, in combination, an operating handle, a sliding worm adapted to be moved by said handle, and gearing for rotating said sliding worm in a reverse direction, such gearing being adapted to be changed to produce a slower or faster rotative movement of said sliding worm.

6. In coin-actuated mechanism, in combination, a shaft, a worm slidably mounted thereon, a fixed gear for sliding such worm, a second shaft adapted to be turned to move said sliding worm, and a second worm fixed on such shaft.

7. In coin-actuated mechanism, in combination, a shaft, a worm slidably mounted thereon, a fixed gear for sliding such worm, a second shaft adapted to be turned to move said sliding worm, a second worm fixed on

such shaft, and a ring loosely mounted on said sliding worm, such ring carrying a pointer.

8. In coin-actuated mechanism, in combination, a shaft *s*, having thereon a sliding worm *r*, a shaft *m* adapted to be turned, and having thereon a fixed worm *p*, a gear *q* interposed between said worms, and a connection adapted to turn said shaft *s*.

9. In coin-actuated mechanism, in combination, a shaft *s*, having thereon a sliding worm *r*, a shaft *m* adapted to be turned, and having thereon a fixed worm *p*, a gear *q* interposed between said worms, and a connection adapted to turn said shaft *s* comprising a worm *x'* and a gear *s'* mounted on the shaft *s*.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

MICHAEL KING.
JOHN EDWARD JAMES.

Witnesses:
WILLIAM HENRY WARHURST,
JOHN PHERRIS ALLEN.