No. 647,802. Patented Apr. 17, 1900.

C. M. BURTON.

GAS PREPAYMENT ATTACHMENT FOR METERS.

(Application filed Sept. 26, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.

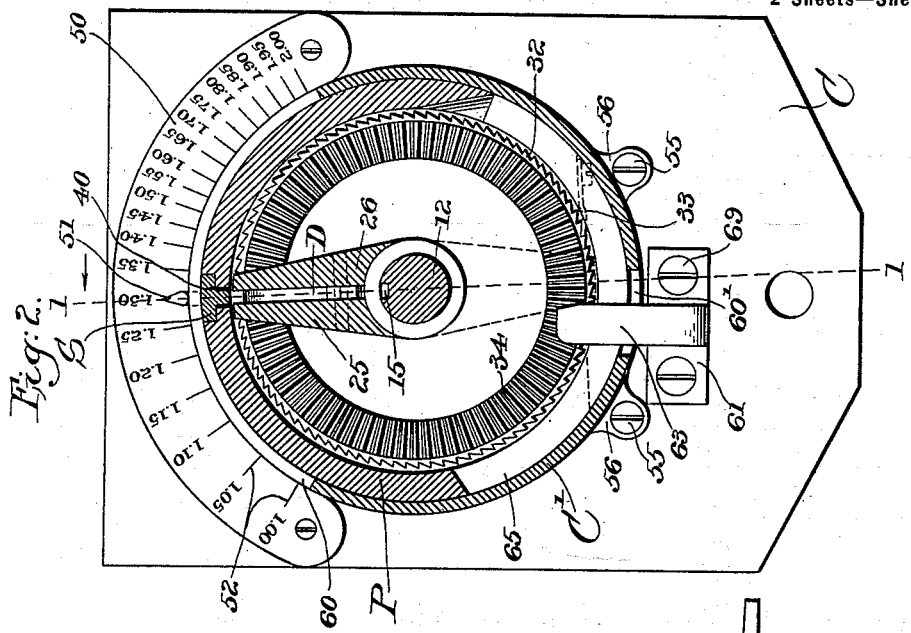
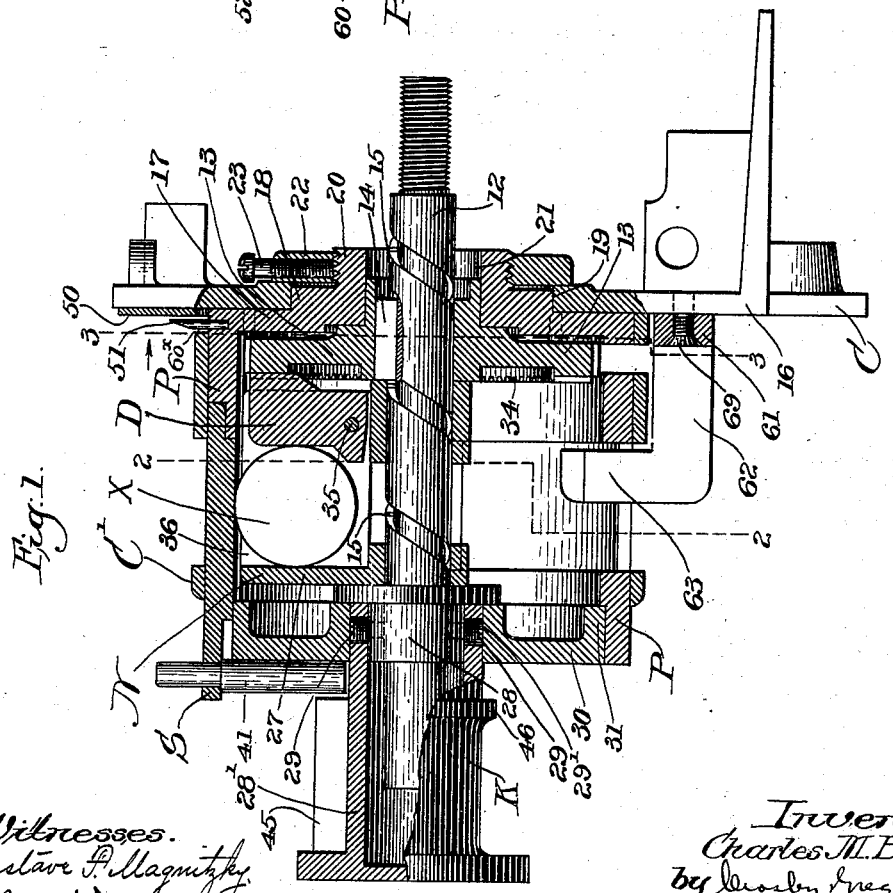


Fig. 1.



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Attys.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

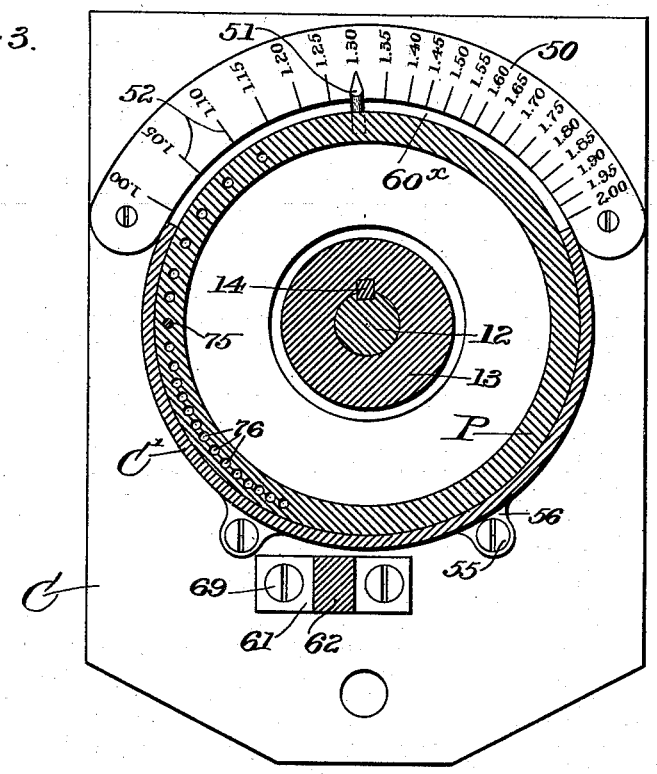


Fig. 4.

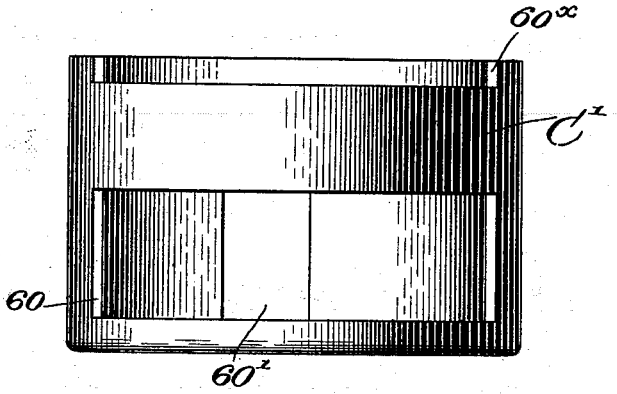
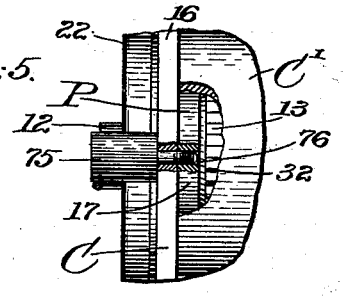


Fig. 5.



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UNITED STATES PATENT OFFICE.

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GAS-PREPAYMENT ATTACHMENT FOR METERS.

SPECIFICATION forming part of Letters Patent No. 647,802, dated April 17, 1900.

Application filed September 26, 1899. Serial No. 731,700. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. BURTON, a citizen of the United States, residing at New Haven, county of New Haven, and State of Connecticut, have invented an Improvement in Gas-Prepayment Attachments for Meters, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention has for its object the production of an improved prepayment attachment adapted for connection to ordinary gas-meters, and it is in the nature of a modification of a similar kind of apparatus shown and described in a contemporaneously-pending application filed by me upon the 26th day of September, 1899, Serial No. 731,701, and the present apparatus includes in its organization certain novel and advantageous features hereinafter more particularly described and covered in the appended claims.

In the drawings, Figure 1 is a longitudinal sectional elevation of an apparatus constructed in accordance with my invention, the section being taken on the line 1 1, Fig. 2. Fig. 2 is a transverse sectional front elevation, the section being taken in the line 2 2, Fig. 1. Fig. 3 is a sectional front elevation, the section being taken in the line 3 3, Fig. 1. Fig. 4 is a top plan view of a casing or jacket for inclosing the price-regulator; and Fig. 5 is a sectional elevation, upon an enlarged scale, of a means for holding the price-regulator in an adjusted position.

The apparatus includes in its construction a housing or casing, as C, which incloses the gas-controlling valve (not shown) and the operating mechanism therefor, only a portion of said operating mechanism being illustrated in Fig. 1 and including a spirally-grooved shaft 12, to which the controlling member 13 is applied. The controlling member is represented as consisting of a wheel having two sets of teeth and as provided with a key or pin 14, adapted to enter the longitudinal groove 15, so that when the wheel 13 is turned in the proper direction the shaft will be operated in a manner customary in this class of apparatus to and from the gas-controlling valve. (Not shown.) The wheel 13 is inclosed by the cylindrical price-regulator P, said price-regulator being adapted to fit against the plate 16 of the housing C, and it is of cylindrical shape and surrounded by the casing C', both of which will hereinafter be more particularly described.

The inner closed end 17 of the price-regulator has an annular portion or journal 18 fitted within a bearing-opening 19 in the plate 16 and which is provided with the externally-threaded boss 20. The hub of the wheel 13 rotates in a central or substantially-central aperture 21 in the back plate 17 of the price-regulator.

The price-regulator, which, it will be understood, is mounted for turning movement upon the housing C, is held against withdrawal by the nut 22, in threaded engagement with the boss 20, said nut being held in place by the transverse screw 23, which engages the boss 20. The shaft loosely carries the coin-carrier N, having side arms 25 and 26, the space between the same constituting a slot to receive a coin, as X, and being connected at the outer end by the piece 27 and open at the inner end to permit the action of a device which serves to couple the coin-carrier and the controlling-wheel 13 upon the insertion of the proper coin.

The coin-carrier N has a laterally-projecting portion 28, adapted to receive the tubular portion 28' of the knob or turning-wheel K, the two parts being united in some suitable manner, as by the diametrically-opposite screws 29, the heads of which are flush with the periphery of the tubular portion 28, which latter turns in a bearing-opening 29', formed centrally in the face-plate 30 of the price-regulator P.

The price-regulator has an inturned annular flange 31 fitted within the outer end of the price-regulator and secured thereto by suitable means. (Not shown.)

The controlling-wheel 13, which operates the worm-shaft 12, is provided with a peripheral set or series of ratchet-teeth 32, adapted to be engaged by the spring-pawl or locking device 33, secured to the fixed casing C', which surrounds the price-regulator, and it has upon

its outer face a series of ratchet-teeth 34, adapted to be engaged by a suitable coupling device mounted upon the coin-carrier N.

The coupling device represented is designated by D, and it consists of a pawl pivoted near the axis of the shaft 12, as at 35, it being in the nature of a gravitative pawl, so that it can fall by its own weight out of engagement with the face-teeth 34 of the controlling-wheel 13, and its free end is disposed in the path of the coin X when the latter is inserted in the slot 36, as shown in Fig. 1, so that said coin can force the point of the pawl between two of the face-teeth 34, thereby to unite the coin-carrier and the controlling-wheel, and it will be understood that when the knob or wheel K is turned the wheel 13 will also be turned to effect the rotation of the worm-shaft 12 and the opening of the gas-controlling valve, the stroke of the coin-carrier varying in accordance with the price of gas and being regulated by the adjustment of the cylindrical price-regulator.

The price-regulator P has a substantially T-shaped coin-receiving slot 40 formed in its periphery, and the coin-carrier N is shiftable in the price-regulator to bring its slot or pocket 36 opposite the slot 40 to permit the introduction of a coin into the coin-carrier, thereby to couple said coin-carrier and the controlling-wheel 13. The slot 40 is adapted to receive the slide S, which normally covers the same and which has at its outer end the downwardly-extending pin 41.

The sleeve portion 28′ of the knob K has the longitudinal channel 45 to receive the pin or stud 41 of the slide S, thereby to permit said slide to be drawn back to effect the introduction of the coin. Said knob is provided, further, with a peripheral annular flange 46, separated from the outer face of the plate 30 by a space substantially equal to the diameter of the stud 41, so that when the slide S is closed the knob may be freely turned, and if any attempt is made to open the slide the stud or pin will abut against the annular flange or rib 46 and such action prevented.

In connection with the price-regulator I provide a scale or price-indicator and a coöperating pointer, and the scale is represented as consisting of a segmental plate 50, secured to the outside of the housing C and over or above the casing C′, while the pointer, shown as consisting of a beveled pin 51, is driven into the price-regulator P and extends through the slot $60^{\times}$ in the casing and is adapted to be set opposite any one of the graduations or scale-marks 52 upon the indicator-plate, the graduations or marks denoting the price of gas from one to two dollars a thousand feet, with five-cent variations between the same, the stroke of the coin-carrier being governed by the price of the gas.

The coin necessary to operate the apparatus is in the present case a quarter, and upon an inspection of Fig. 2 it will be seen that the pointer 51 is set opposite a mark or graduation for the purpose of delivering to the consumer twenty-five cents' worth of gas at one dollar and thirty cents a thousand feet; but the initial position of the pointer can be regulated by circumferentially shifting the price-regulator to bring its pointer opposite a different mark, thereby to correspondingly regulate the distance to be traveled by the coin-carrier and the other parts actuated thereby.

It will be remembered that the cylindrical price-regulator P is supported within the casing C′, which is fixed as by means of the screws 55, passing through the ears 56 and in threaded engagement with the plate 16 of the housing C, and said casing C′ has the elongated circumferential slot 60, the length of which is substantially equal or slightly exceeds the distance between the extreme end marks of the scale or indicator plate 50, and it will be understood that the coin is passed through the elongated slot 60, through the slot 40, and into the slot of the coin-carrier, which action may be obtained no matter at what point the price-regulator may be set, and the width of this slot is substantially equal to or slightly exceeds the diameter of the coin, so as to permit the free insertion of the coin. The pointer 51 is set opposite the "$1.30" mark upon the scale-plate 50, and it will be assumed that a quarter has been inserted in the coin-carrier, thereby to couple the coin-carrier to the controlling-wheel 13, and the knob K will be turned to the right, thereby moving the coin-carrier to the right or until said coin-carrier strikes a fixed stop located near the coin delivery or discharge point, as represented in Fig. 2 by dotted lines, so that the coin can pass from the coin-carrier through the delivery-slot 60′, formed in the periphery of the fixed casing C′, upon the under side thereof, and into a suitable receptacle. (Not shown.) The stop which is disposed in the path of the coin-carrier is fixed relatively to the price-regulator, and it consists of a body portion 61 of substantially plate form secured to the housing or box C and having an L-shaped projection 62, the vertical portion 63 of which projects through the elongated coin-discharging slot 60′ in the fixed casing C′ and which constitutes the stop proper. This vertical portion 63 is adapted to be engaged by the coin-carrier, as shown by the dotted lines in Fig. 2, when the slot 36 reaches a point opposite the slot 60′, so that the coin can be discharged. After the discharge of the coin from the coin-carrier the latter is returned to its initial position, so as to receive another coin when it is desired to operate the gas-controlling valve. The vertical portion 63 of the coin-carrier stop extends through the circumferential slot 65, the length of which approximately equals the slot 60 on the upper side of the fixed casing, by reason of which the price-regulator can be circumferentially adjusted to compensate for variations in the price of gas without the necessity of removing the stop. The

stop is supported, of course, independently of the price-regulator and of the casing surrounding the same, its body portion 61 fitting flatwise against the front plate 16 and being secured thereto by means of screws 69 or otherwise.

The price of gas in different localities or States varies, and in some States it is reduced so much each year per thousand feet, and to compensate for the variance the price-regulator is made adjustable, so that its pointer can be brought opposite different marks upon the scale, and when in an adjusted position it is held or clamped by suitable means, from which it will be evident that the path traveled by the coin-carrier is correspondingly regulated.

When the price-regulator is circumferentially turned, it is held in a fixed position, with its pointer opposite a predetermined point on the scale-plate, by a stop, shown as a pin or screw 75, the head of which is disposed within the plate 16 of the housing and the shank of which is adapted to engage one of the series of threaded openings 76, disposed in segmental order along the inner closed end of the price-regulator, the number of threaded openings 76 agreeing, of course, with the graduations or marks upon the scale-plate. To readjust the price-regulator, it is simply necessary to remove the screw 75 from the threaded opening 76 which it occupies, turn the price-regulator either forward or backward, and reinsert the screw in a different threaded opening 76 or that corresponding with the scale-mark opposite which the pointer is to be set.

The invention is not limited to the exact elements nor to the organization thereof previously set forth, as these may be differently modified within the scope of the annexed claims.

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

1. In an apparatus of the class specified, a controlling member, an adjustable cylindrical price-regulator having a money-receiving slot, a coöperating scale and pointer, one of said parts being controlled by the price-regulator, a knob, a coin-carrier connected with said knob and located within said adjustable price-regulator, a device mounted upon the coin-carrier and in position to be operated by a coin, and to be thereby coupled to said controlling member, a fixed casing surrounding the cylindrical price-regulator and having a slot the length of which is substantially equal to the distance between the extreme graduations on said price-regulator, means for holding the price-regulator in a fixed position, and a fixed stop for arresting the motion of the coin-carrier when the coin-discharging point is reached.

2. In an apparatus of the class specified, a controlling member, an adjustable cylindrical price-regulator having a money-receiving slot, a scale, a coöperating pointer secured to the price-regulator, a knob, a coin-carrier connected with said knob and located within said price-regulator, a device mounted upon the coin-carrier and in position to be operated by a coin, and to be thereby coupled to said controlling member, a fixed casing surrounding the cylindrical price-regulator and having a slot the length of which is substantially equal to the distance between the extreme graduations on said price-regulator and also having a slot through which said pointer extends, means for holding said price-regulator in a fixed position, and a fixed stop for arresting the motion of the coin-carrier when the coin-discharging point is reached.

3. In an apparatus of the class specified, a controlling member, a scale, an adjustable cylindrical price-regulator having a money-receiving slot and also having a second slot the length of which is substantially equal to the distance between the extreme graduations on said scale, a pointer coöperating with said scale and connected to the price-regulator, a knob, a coin-carrier connected with said knob and located within said price-regulator, a device mounted upon the coin-carrier and in position to be operated by a coin and to be thereby coupled to said controlling member, means for holding said price-regulator in a fixed position, and a fixed stop disposed in the path of the coin-carrier and projecting through the elongated slot in the price-regulator.

4. In an apparatus of the class specified, a controlling member, a scale, an adjustable cylindrical price-regulator having a money-receiving slot and also having a second slot the length of which is substantially equal to the distance between the extreme graduations on said scale, a pointer coöperating with said scale and connected to the price-regulator, a knob, a coin-carrier connected with said knob and located within said price-regulator, a device mounted upon the coin-carrier and in position to be operated by a coin and to be thereby coupled to said controlling member, means for holding said price-regulator in a fixed position, and a stop consisting of a fixed body provided with an L-shaped projection having a vertical portion extending through the elongated slot in the price-regulator and disposed in the path of the coin-carrier.

5. In an apparatus of the class specified, a controlling member, a scale, an adjustable cylindrical price-regulator having a money-receiving slot and also having a second and elongated slot, the length of which is substantially equal to the distance between the extreme graduations on said scale, a pointer coöperating with said scale and connected to the price-regulator, a knob, a coin-carrier connected with said knob and located within said price-regulator, a device mounted upon the

coin-carrier and in position to be operated by a coin and to be thereby coupled to said controlling member, a casing having a slot to receive a coin the length of which is substantially equal to the elongated slot in the price-regulator, and also having a coin-discharge slot, a stop for the coin-carrier projecting through said coin-discharge slot and also through the elongated slot in the price-regulator.

6. In an apparatus of the class specified, a controlling member, a scale, an adjustable cylindrical price-regulator having a money-receiving slot, a coin-carrier disposed within the price-regulator, a knob connected to said coin-carrier, a device mounted upon the coin-carrier and in position to be operated by a coin and to be thereby coupled to said controlling member, a fixed stop disposed in the path of the coin-carrier, and a fixed part provided with a projection adapted to engage in one of a segmental series of openings in the cylindrical price-regulator, thereby to hold the latter in an adjusted position.

7. In an apparatus of the class specified, a controlling member, a scale, an adjustable cylindrical price-regulator having a money-receiving slot and also having a second and elongated slot, the length of which is substantially equal to the distance between the extreme graduations on said scale, a pointer cooperating with said scale and connected to the price-regulator, a knob, a coin-carrier connected with said knob and located within said price-regulator, a device mounted upon the coin-carrier and in position to be operated by a coin and to be thereby coupled to said controlling member, a casing having a slot to receive a coin the length of which is substantially equal to the elongated slot in the price-regulator, and also having a coin-discharge slot, a stop for the coin-carrier projecting through said coin-discharge slot and also through the elongated slot in the price-regulator, a slide adapted normally to cover the peripheral slot in the price-regulator, and means for locking the controlling member against backward movement during the travel of the coin-carrier and after the coin-carrier has been uncoupled from said controlling member.

8. In an apparatus of the class specified, a shaft having a controlling member, a housing or boxing, an adjustable cylindrical price-regulator mounted for turning movement upon one of the plates of the housing and having a money-receiving slot, a coöperating scale and pointer, one of said parts being controlled by the price-regulator, a knob, a coin-carrier connected with said knob and located within said adjustable price-regulator, a device mounted upon the coin-carrier and in position to be operated by a coin, and to be thereby coupled to said controlling member, a fixed casing surrounding the cylindrical price-regulator and having a slot the length of which is substantially equal to the distance between the extreme graduations on said price-regulator, means for holding the price-regulator in a fixed position, and a fixed stop for arresting the motion of the coin-carrier when the coin-discharging point is reached.

9. In an apparatus of the class specified, a shaft having a controlling member, a housing or boxing, an adjustable cylindrical price-regulator provided with a journal portion supported for turning movement upon one of the plates of the housing, and having a money-receiving slot, and said journal portion being provided with a threaded boss, a nut located in the housing and in threaded engagement with said boss, a pin holding the nut on the boss, a coöperating scale and pointer one of said parts being controlled by the price-regulator, a knob, a coin-carrier connected with said knob and provided with a coin-actuated device adapted to be coupled to said controlling member, means for holding the price-regulator in an adjusted position, and a stop disposed in the path of the coin-carrier.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES M. BURTON.

Witnesses:
FRANK A. LANGWITTE,
D. C. SMYTH.