No. 647,803. Patented Apr. 17, 1900.

C. M. BURTON.

PREPAYMENT ATTACHMENT FOR GAS METERS.

(Application filed Sept. 26, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.

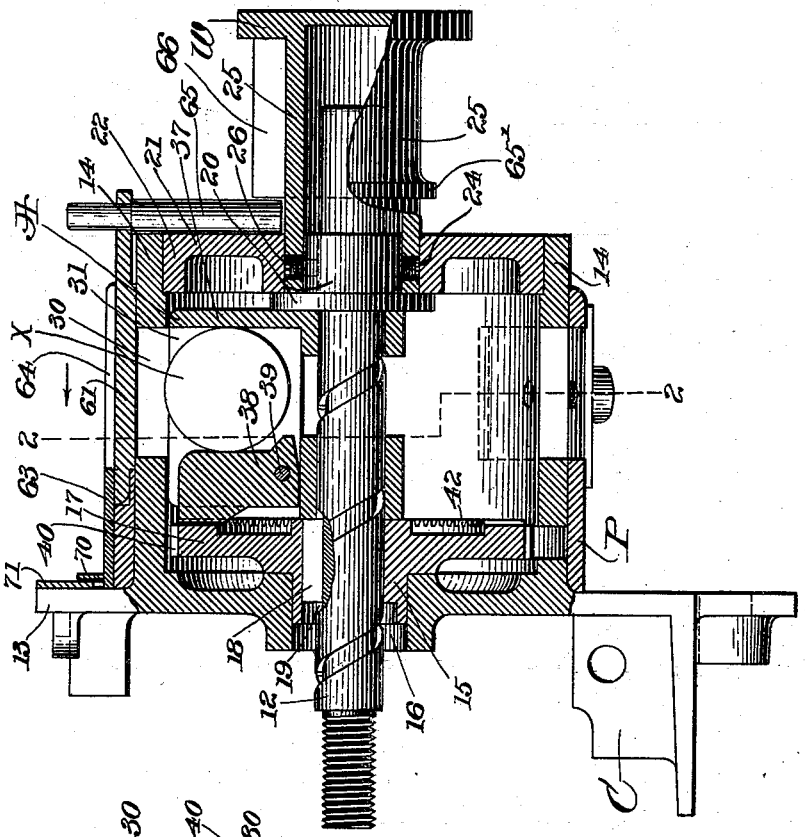
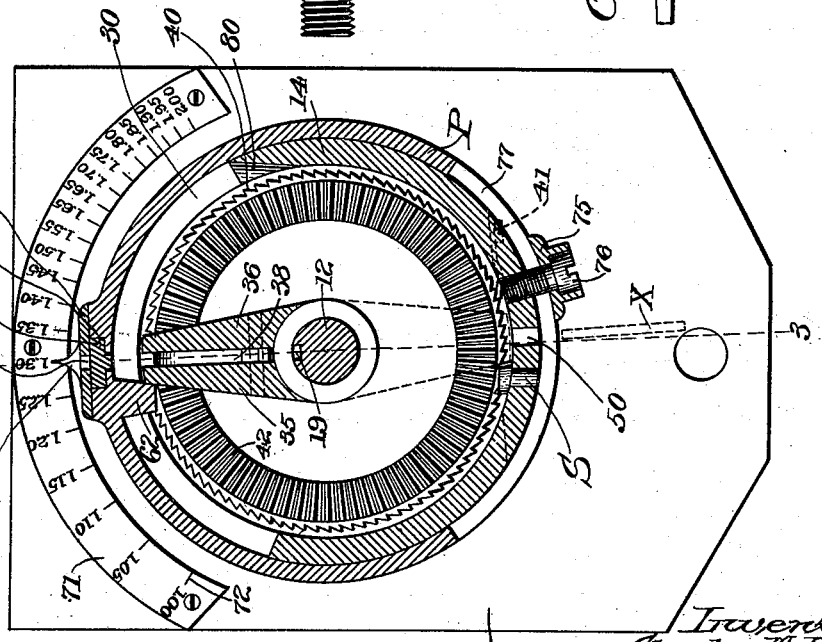


Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

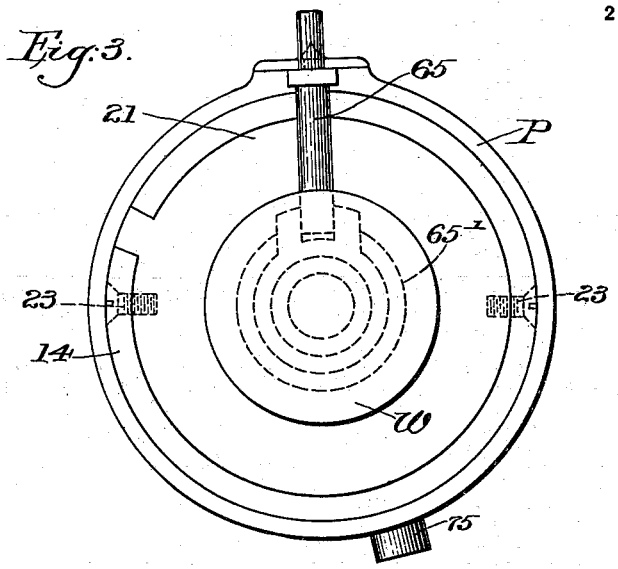


Fig. 4.

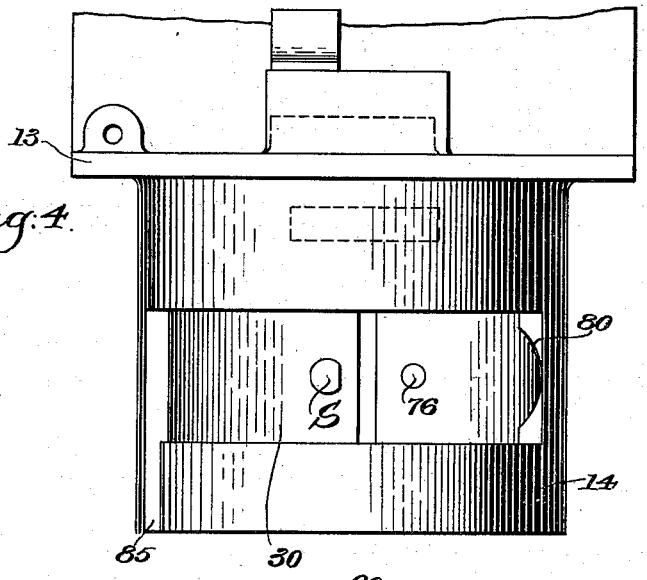
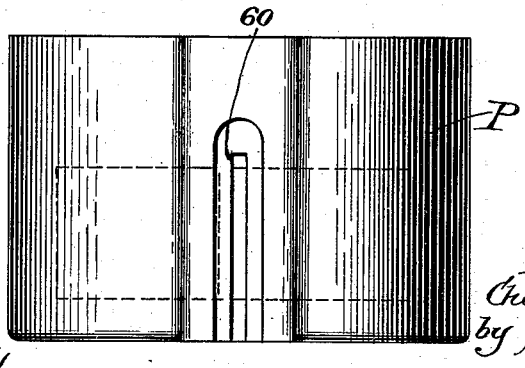


Fig. 5.



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PREPAYMENT ATTACHMENT FOR GAS-METERS.

SPECIFICATION forming part of Letters Patent No. 647,803, dated April 17, 1900.

Application filed September 26, 1899. Serial No. 731,701. (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 Prepayment Attachments for Gas-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 to be applied to an ordinary gas-meter, and it is in the nature of a modification of a similar kind of apparatus covered by Letters Patent No. 635,730, granted October 24, 1899, to Charles Luke, although, of course, it can be employed in combination with other types of coin-controlled apparatus.

The present invention involves in its organization in the embodiment thereof represented in the accompanying drawings an adjustable price-regulator, a scale, and a coöperating pointer, one of said parts being controlled by the price-regulator, a controlling-shaft, a wheel located to operate said shaft, a coin-carrier located within the adjustable price-regulator, a coupling device operative with the coin-carrier and actuated by a coin when the same is inserted in the coin-carrier to unite said coin-carrier and wheel, a knob serving to actuate the coin-carrier, whereby when the knob is turned in one direction the controlling-shaft may be operated to effect the operation of the valve mechanism, and means for arresting the coin-carrier when it is in position to receive a coin.

The price-regulator in the present case is cylindrical, and it has a peripheral slot or opening located at a proper point to receive a coin, and it is mounted for rotation upon a fixed shell, to which it may be clamped when set at an adjusted position, and it is equipped with a stop adapted to be engaged by the coin-carrier on the retractive movement of the latter, so as to assure the proper registration of the coin-receiving openings in the price-regulator and coin-carrier, respectively. The discharge of the coin through a slot or opening in the supporting shell or jacket for the cylindrical price-regulator is effected in the present case by a fixed stop, which is located in proximity to said discharge-slot and which is engaged by the coin-carrier. The discharge of the coin from the coin-carrier uncouples the latter from the controlling-wheel to which I have previously referred, so that said coin-carrier can be turned backward to its initial position without affecting the controlling-wheel, as the latter is ordinarily locked against backward movement by a locking member of proper kind.

In the embodiment of the invention herein illustrated the cylindrical price-regulator is provided with a pointer which coöperates with a scale set above the price-regulator upon a fixed part of the apparatus, whereby the pointer may be set opposite a predetermined scale-mark upon the scale to compensate for different prices in the gas at different times or in different places.

In the drawings, Figure 1 is a transverse sectional elevation, the section being taken on the line 2 2, Fig. 2, looking in the direction of the arrow. Fig. 2 is a sectional side elevation, the section being taken on the diagonal line 3 3, Fig. 1, and looking in the direction of the arrow. Fig. 3 is a face view. Fig. 4 is a top plan view of the price-regulator, certain other parts being removed. Fig. 5 is a plan view of the price-regulator.

The present improvements are readily adapted to different kinds of gas-meters, and the appliance represented in the drawings includes in its organization a casing, as C, part only of which is represented, which is ordinarily attached to one side of the gas-meter in some suitable manner and which incloses the valve mechanism (not shown) and certain of the operating parts therefor. The controlling or operating mechanism for the valve, whereby to open the same, involves in its construction in the form thereof represented a spirally-grooved shaft 12, which is advanced in a manner common in this class of apparatus to secure the action of the gas-controlling valve. What is represented as the face or front plate 13 of the casing C is shown as having the cylindrical shell 14 conveniently made integral with the casing and constituting a journal or support for the price-regulator P, which is shown as cylin-

drical and which is adjustable upon the internal cylinder or shell 14 to secure the requisite quantity of gas, even where the price of the same varies, by the insertion of a coin of the proper denomination, a quarter of a dollar being that necessary in the present case to effect the action of the gas-controlling valve through the intervention of intermediate mechanism hereinafter more particularly described. The worm-shaft or worm 12 is supported at one point in its length by the hub 15, which in turn is located in the bearing 16 upon the front plate 13 of the casing C, said hub being upon the coupling-wheel 17. The wheel 17 is supported upon the worm 12 and is provided with a key 18, adapted to enter the longitudinal groove 19, so that by turning the wheel 17 to what is illustrated as the right in Fig. 1 the shaft 12 will be rotated and through the medium of a pin (not shown) fitted in the spiral groove 12′ will be moved forward, thereby securing the operation of the gas-controlling valve through the agency of intermediate mechanism, neither of which latter is represented in the drawings, as the same constitutes no part of the present invention. The worm-shaft 12 at another part of its length is surrounded by the sleeve or hub 20, shown as extending from the right of the coin-carrier A, (see Fig. 2,) it being understood that the hub of the coin-carrier is loosely supported upon the worm-shaft. When, however, the coin-carrier A is coupled to the wheel 17 and said coin-carrier is turned in the proper direction the wheel 17 likewise will be turned, thereby to rotate the shaft 12 and cause the consequent opening of the gas-controlling valve.

The plate 21 in the form of a disk has an annular flange 22, which fits in the open outer end of the supporting-cylinder 14 and is held in place by diametrically-opposite screws, as 23, passing through the cylinder and in threaded engagement with the annular inturned flange 22, as shown in Fig. 3, and the disk or face-plate 21 has a central and inwardly-flanged aperture 24 to receive the sleeve portion 25 of the operating wheel or knob W, and said sleeve portion 24 is secured by screws 26 or otherwise to the hub 20 of the money-carrier, which it embraces, so that by turning the wheel W the money-carrier may be turned in unison therewith, and if the money-carrier be connected through the agency of a proper coin the controlling-wheel 17 will be also turned and the traverse or amount of movement of the money-carrier will be governed by the cylindrical price-regulator P, of which brief mention has been made.

The support 14 for the price-regulator has an elongated slot 30 formed in its periphery, it being sufficiently long to permit the insertion of a coin in the pocket 31 of the coin-carrier at different initial points.

It will be understood that the place at which the coin is introduced varies materially in accordance with the price of gas, and the length of the slot 30 equals the degree of adjustment of the price-regulator, so that no matter where the initial or starting point of the coin-carrier may be located the coin may be introduced through said slot, it being understood that the initial or starting point is governed or controlled by the adjustment of the price-regulator P, and it will be evident upon an inspection that the price-regulator always covers the slot 30 no matter how said price-regulator may be adjusted between certain limits.

The coin-carrier has the arms or side pieces 35 and 36 closed at one side, as at 37, and open at the other to receive the coupling device or pawl 38, which is disposed in the path of the coin. The coupling device or pawl 38 is in the nature of a gravitative one, it being pivoted, as at 39, near its lower end between the arms or side pieces 35 and 36 of the coin-carrier, and it is adapted by its own weight to assume an ineffective position when a coin, as X, is not present in the coin-carrier.

The periphery of the controlling-wheel 17 is provided with a series of ratchet-teeth 40, adapted to be engaged by the spring-pawl 41, secured to the casing 14, the pawl being made sufficiently strong as to prevent backward motion of the wheel 17 after its initial movement. The face of the wheel 17 is provided with a second series of ratchet-teeth 42, adapted to be engaged by the pawl 38 when the latter is operated by a coin, whereby the coin-carrier and wheel 17 may be coupled, so as to effect the operation of the shaft 12 in the manner hereinbefore set forth by turning the hand-wheel W. The pawl is disposed in the path of the coin X as the same is inserted in the pocket 31 of the coin-carrier, so that the point of the pawl can be forced into the hollow between two of the side teeth of the controlling-wheel 17.

When the parts are coupled and turned in the manner hereinbefore described, the movement will be continued until the coin-carrier strikes a suitable stop, at which time the coin can slide from the coin-carrier and through the discharge or delivery slot 50, which is at all times fixed and which is formed in the cylinder or shell 14.

The discharge-effecting stop is denoted by S, and it is shown consisting of a screw in threaded engagement with the cylinder or shell 14, the head of which is located inside said cylinder and is made comparatively long and constitutes the stop proper to be engaged by the coin-carrier A when the pocket or slot therein registers with the discharge-slot 50, at which time the coin-carrier will occupy the position represented by dotted lines in Fig. 1.

The price-regulator P has in its periphery the coin-receiving slot 60 of substantially T shape in cross-section to receive the correspondingly-shaped slide 61. (See Fig. 1.) The price-regulator P has a downwardly-projecting stop 62 fixed thereto and passing through the elongated peripheral slot 30 in the cylinder 14 and against which the coin-

carrier A is adapted to abut, as represented in Fig. 1 by the full lines, when it has reached its initial or stopping position, with its slot 31 in registration with the narrow portion of the slot 60. While the stop 62 is fixed to the price-regulator, its position of course will be varied to change the stroke of the coin-carrier A in accordance with the price of gas by the circumferential adjustment of the price-regulator, and the slot 30 is made sufficiently long as to permit the proper range of adjustment of the price-regulator, its opposite faces being adapted to engage the end walls of the slot 30 when said price-regulator is in either of its two extreme adjusted positions. The slide is held in place by the plate 63, having an opening or slot 64, and the plate is secured in place so that its slot is adapted to register with the narrow portion of the coin-slot 60 and also with the coin-slot 31 in the coin-carrier when the latter is in its initial position, as indicated by the full lines in Fig. 1. The slide 61 of course moves with the adjustable price-regulator P, and it extends outwardly beyond the same and is provided with a downwardly-extending stud or projection 65, adapted to enter the longitudinal groove 66 upon the turning wheel W when the coin-carrier is in its primary position against the rigid stop 62 on the price-regulator, so that the slide can be freely drawn back to permit the insertion of a coin. The sleeve portion 25 of the turning wheel or knob W is furnished with an annular flange 65′, separated from the plate 21 by a space equaling the diameter of the stud, so that the wheel can be turned after the slide has covered the slot 60; but if any attempt be made to draw back the slide during the rotation of the wheel W the stud will strike against the annular projection or flange 65′, so that the slide cannot be drawn back.

In conjunction with the price-regulator P, I provide a pointer and scale, the pointer being denoted by 70 and being shown as carried by and movable with the price-regulator P, while the scale 71 is fixed to the outer plate 13 of the casing or boxing C, and the scale is represented as consisting of a segmental or arc-shaped plate having a series of graduations or notches 72 extending upward from the lower edge thereof, the graduations or notches 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 which, it will be remembered, is governed by the price-regulator being increased or decreased to conform to the price of the gas. In the present instance the pointer 70 is set opposite a mark or graduation to deliver to the consumer twenty-five cents' worth of gas at one dollar and thirty cents a thousand, but the position of the pointer can be regulated by circumferentially shifting the price-regulator P to bring its pointer opposite a different mark, and of course the stop 62 will be moved therewith to regulate correspondingly the distance to be traveled by the coin-carrier.

Any convenient means may be employed for clamping or holding the price-regulator in an adjusted or desired position; but for this purpose I have represented a clamping-block 75, adapted to receive the screw 76, which is in threaded engagement with the fixed casing or cylinder 14 and which projects through the peripheral slot 77 upon the bottom side of the price-regulator, the length of the slot 77 being approximately the same as that of the slot 30 to permit the adjustment of the price-regulator between the two extreme points thereof. By turning the screw 76 to the right its head, which is countersunk in the block 75, will cause said block to engage against the periphery of the price-regulator, thereby to firmly hold the latter in an adjusted position. By loosening the screw the price-regulator can be turned to bring its pointer 70 opposite the necessary mark or graduation 72 upon the scale or indicator plate 71, and when the proper adjustment is obtained the screw will be tightened to cause the clamping-block 75 to bind against said price-regulator, and it will be understood that the block and its operating-screw are fixed relatively to the price-regulator.

To insert a coin, the slide 61 will be drawn back, exposing the several registering-slots 64, 60, and 30, it being understood, of course, that the coin-carrier abuts against the fixed stop 62. When the coin is properly seated in the coin-carrier, it acts against the pawl 38 and forces the point of the same between two of the side teeth 42, thereby forming a connection between the knob or wheel W and the controlling-wheel 17, so that when said knob or wheel is turned to the right the wheel 17 can be likewise turned to effect the rotation of the shaft 12 in the manner previously described, and this operation will continue until the coin-carrier strikes the fixed stop S, whereby the coin can pass out of the slot or pocket 31 in the coin-carrier and through the registering-slot 50 into a suitable drawer or other receptacle. (Not shown.) When the coin is thus discharged, the pawl 38 by its own weight will fall away from the face-teeth 42 upon the wheel 17, thereby uncoupling the coin-carrier and the wheel 17, so that the said coin-carrier can be returned to its primary position by rotating the wheel W to the left or until said coin-carrier strikes the fixed stop or abutment 62 up the price-regulator.

It will be understood, of course, that the slide 61 is closed after the insertion of a coin, so as to permit the wheel W and the other parts connected therewith to move forward.

While the coin-carrier A is reciprocated between its coin receiving and discharging positions, it will be understood, of course, that the wheel 17 never moves backward, as such motion is prevented by the spring-pawl or locker 41.

The outer end of the coin-carrier A is con-

tiguous to the inner circular surface of the casing 14, and in case the coin during the travel of the coin-carrier should by accident be projected into the longitudinal slot 30, which it will be remembered (see Fig. 2) equals the width of the coin, it will travel against the opposite beveled guide-faces 80, which merge into the side walls of the slot 30, so that said bevels or wedge-surfaces will force the coin backward beyond the outer end of the coin-carrier, such motion continuing gradually until the coin is properly seated or until it can strike the solid inner face of the casing 14, it being evident upon an inspection of Fig. 1 that the beveled or wedge portion 80 merges into said solid portion of the casing, which is an advantageous feature and which would not be the case if the end walls of the elongated slot 30 were substantially radial to the axis of the coin-carrier.

The casing 14, over which the price-regulator P is slipped, has an open-mouthed slot 85 leading into the elongated slot 30 and transversely disposed relatively thereto and which is adapted to receive the stop 62 when the price-regulator is slid in place.

The invention is not limited to the precise parts nor to the arrangement thereof hereinbefore described, as these points may be variously modified within the scope of the accompanying 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 price-regulator having a money-receiving slot, a scale and coöperating 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, means for clamping the price-regulator in a fixed position and a relatively-fixed stop supported independently of the price-regulator and located to stop the movement of the coin-carrier at a predetermined point.

2. In an apparatus of the class described, a controlling member, an adjustable price-regulator having a peripheral money-receiving slot, a scale and coöperating pointer, one of said parts being controlled by the price-regulator, a knob, a coin-carrier connected to 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, means for clamping the price-regulator in a fixed position, means operative with the price-regulator for stopping the movement of the coin-carrier when the same is opposite said peripheral slot and in position to receive a coin, and a relatively-fixed stop supported independently of the price-regulator and located to stop the movement of the coin-carrier.

3. In an apparatus of the class described, a controlling member, an adjustable price-regulator having a peripheral money-receiving slot, a scale and coöperating pointer, one of said parts being controlled by the price-regulator, a knob, a coin-carrier connected to 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, means for holding the price-regulator in an adjusted position, a stop rigid on the price-regulator and located to arrest the movement of the coin-carrier on the backward movement thereof when it is opposite said peripheral slot, and a stop supported independently of the price-regulator and located to stop the movement of the coin-carrier.

4. In an apparatus of the class described, a controlling member, a cylindrical and adjustable price-regulator having a peripheral slot and also provided with a fixed internal stop, a scale and coöperating pointer, one of said parts being controlled by the price-regulator, a knob, a coin-carrier connected to said knob and located within said cylindrical price-regulator and adapted to abut against said internal stop when in its initial or starting position, a device mounted upon the coin-carrier and in position to be operated by a coin and to thereby be coupled to said controlling member, means for clamping the price-regulator in a fixed position, means operative with the price-regulator for stopping the movement of the coin-carrier to effect the discharge of a coin, and means for preventing backward movement of said controlling member after the coin-carrier has been uncoupled therefrom.

5. In an apparatus of the class described, a controlling member, a cylindrical and adjustable price-regulator having a peripheral slot and also provided with a fixed internal stop, a scale and coöperating pointer, one of said parts being controlled by the price-regulator, a knob, a coin-carrier connected to said knob and located within said cylindrical price-regulator and adapted to abut against said internal stop when in its initial or starting position, a device mounted upon the coin-carrier and in position to be operated by a coin and to thereby be coupled to said controlling member, means for clamping the price-regulator in a fixed position, means operative with the price-regulator for stopping the movement of the coin-carrier to effect the discharge of a coin, means for preventing backward movement of said controlling member after the coin-carrier has been uncoupled therefrom, a slide upon said cylindrical price-regulator adapted to cover the peripheral slot, and means on said knob for governing the action of said slide.

6. In an apparatus of the class specified, a

controlling member, a cylindrical and adjustable price-regulator having a peripheral slot to receive a coin and also provided with a fixed internal stop, a scale located above the cylindrical price-regulator and consisting of a segmental graduated plate, a pointer fixed to the price-regulator, a knob, a coin-carrier, connected to said knob and located within said cylindrical price-regulator and adapted to abut against said internal stop when in its initial or starting position, a device mounted upon the coin-carrier and in position to be operated by a coin to be thereby coupled to said controlling member, means for holding the price-regulator in an adjusted position, and a part fixed relatively to said cylindrical price-regulator and provided with a screw disposed in the path of and adapted to arrest the movement of the coin-carrier when the coin-discharging point is reached.

7. In an apparatus of the class specified, a controlling member, a cylindrical and adjustable price-regulator having a peripheral slot to receive a coin and also provided with a fixed internal stop, a coöperating scale and pointer, one of which parts is secured to said price-regulator, a fixed casing supporting said price-regulator and having a longitudinal slot the length of which is substantially equal to the distance between the extreme graduations on said scale, a knob, a coin-carrier connected to said knob and located within said cylindrical casing and adapted to abut against said internal stop when in its initial or starting position, a device adapted to travel with the coin-carrier and in position to be operated by a coin which is thereby coupled to said controlling member, and means for holding the price-regulator in an adjusted position.

8. In an apparatus of the class specified, a controlling member, a cylindrical and adjustable price-regulator having a peripheral slot to receive a coin and also provided with a fixed internal stop, a coöperating scale and pointer, one of which parts is secured to said price-regulator, a fixed casing supporting said price-regulator and having a longitudinal slot the length of which is substantially equal to the distance between the extreme graduations on said scale, said casing also having a beveled face located to engage a coin during the travel of the coin-carrier from its coin-receiving to its coin-discharging position, a knob, a coin-carrier connected to said knob and located within said cylindrical casing and adapted to abut against said internal stop when in its initial or starting position, a device adapted to travel with the coin-carrier and in position to be operated by a coin which is thereby coupled to said controlling member, and means for holding the price-regulator in an adjusted position.

9. In an apparatus of the class specified, a controlling member, a cylindrical and adjustable price-regulator having a coin-receiving peripheral slot and also provided with a fixed internal stop, a coöperating scale and pointer one of said parts being secured to said price-regulator, a fixed casing supporting said price-regulator and having a longitudinal circumferential slot the length of which is substantially equal to the distance between the extreme graduations on said scale and said slot being adapted to receive said stop, a knob, a coin-carrier connected to said knob and located within said casing and adapted to abut against said internal stop when in its initial or starting position, a device adapted to travel with the coin-carrier and in position to be operated by a coin thereby to couple the coin-carrier to the controlling member, a screw in threaded engagement with said casing, a clamping-block held in clamping engagement with the price-regulator by said screw, and a relatively-fixed stop disposed within said casing and in the path of the coin-carrier.

10. In an apparatus of the class specified, a controlling member, a cylindrical and adjustable price-regulator having a peripheral coin-receiving slot and also provided with a fixed internal stop and also having an elongated slot, a coöperating scale and pointer one of said parts being secured to said price-regulator, a fixed casing supporting said price-regulator and having a longitudinal circumferential slot the length of which is substantially equal to the distance between the extreme graduations on said scale, and said slot being adapted to receive said stop, a knob, a coin-carrier connected to said knob and located within said casing and adapted to abut against said internal stop when in its initial or starting position, a device adapted to travel in the coin-carrier and in position to be operated by a coin, thereby to couple the coin-carrier to the controlling member, a fixed stop disposed within said casing and in the path of the coin-carrier, a clamping device adapted to bind against the periphery of the cylindrical price-regulator, and a holding member for said clamping device connected to the fixed casing.

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

CHARLES M. BURTON.

Witnesses:
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D. C. SMYTH.