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O. ASPER

1,808,447

KEY CONTROL FOR LIQUID REGISTERS

Filed Nov. 22, 1929

3 Sheets-Sheet 1

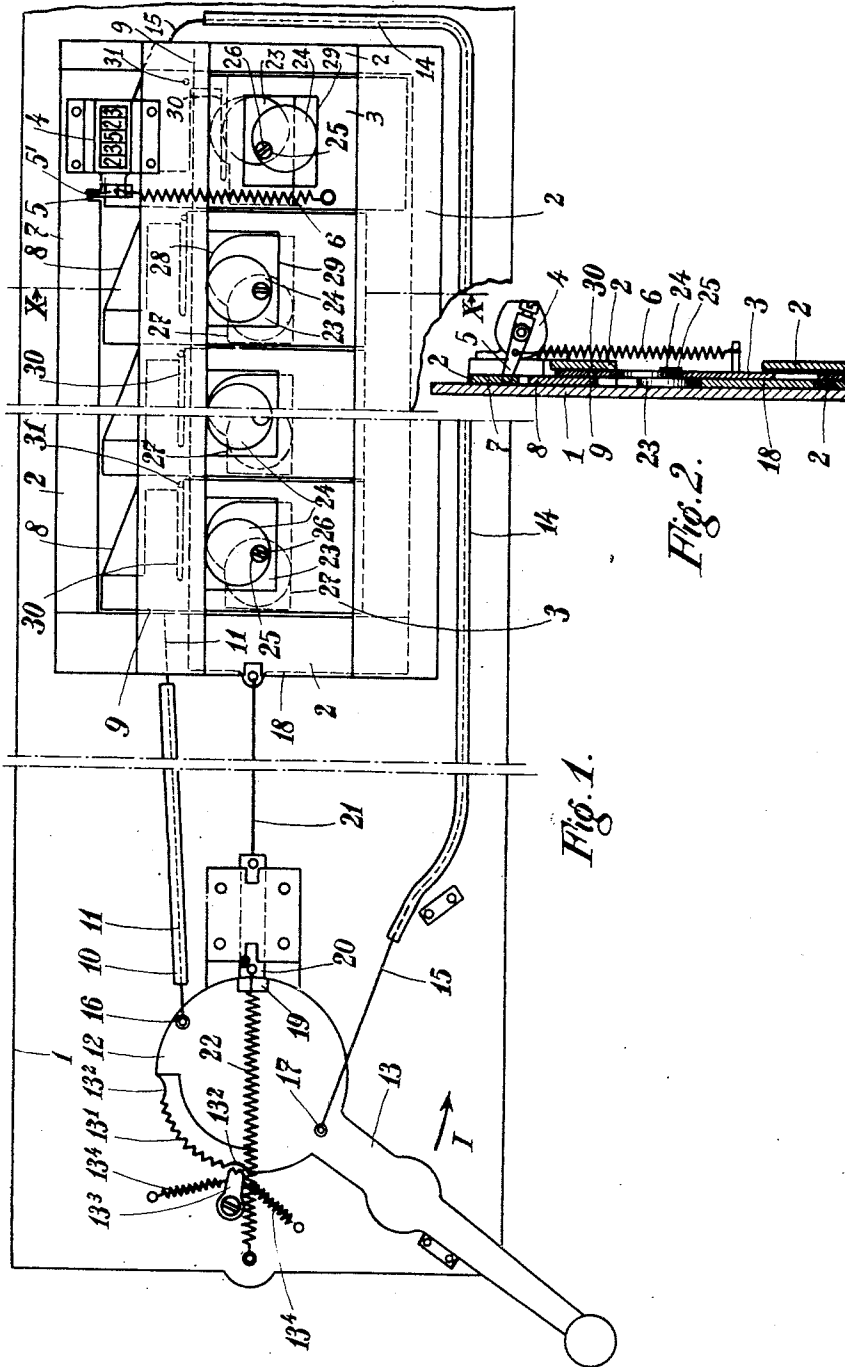


Fig. 1.

Fig. 2.

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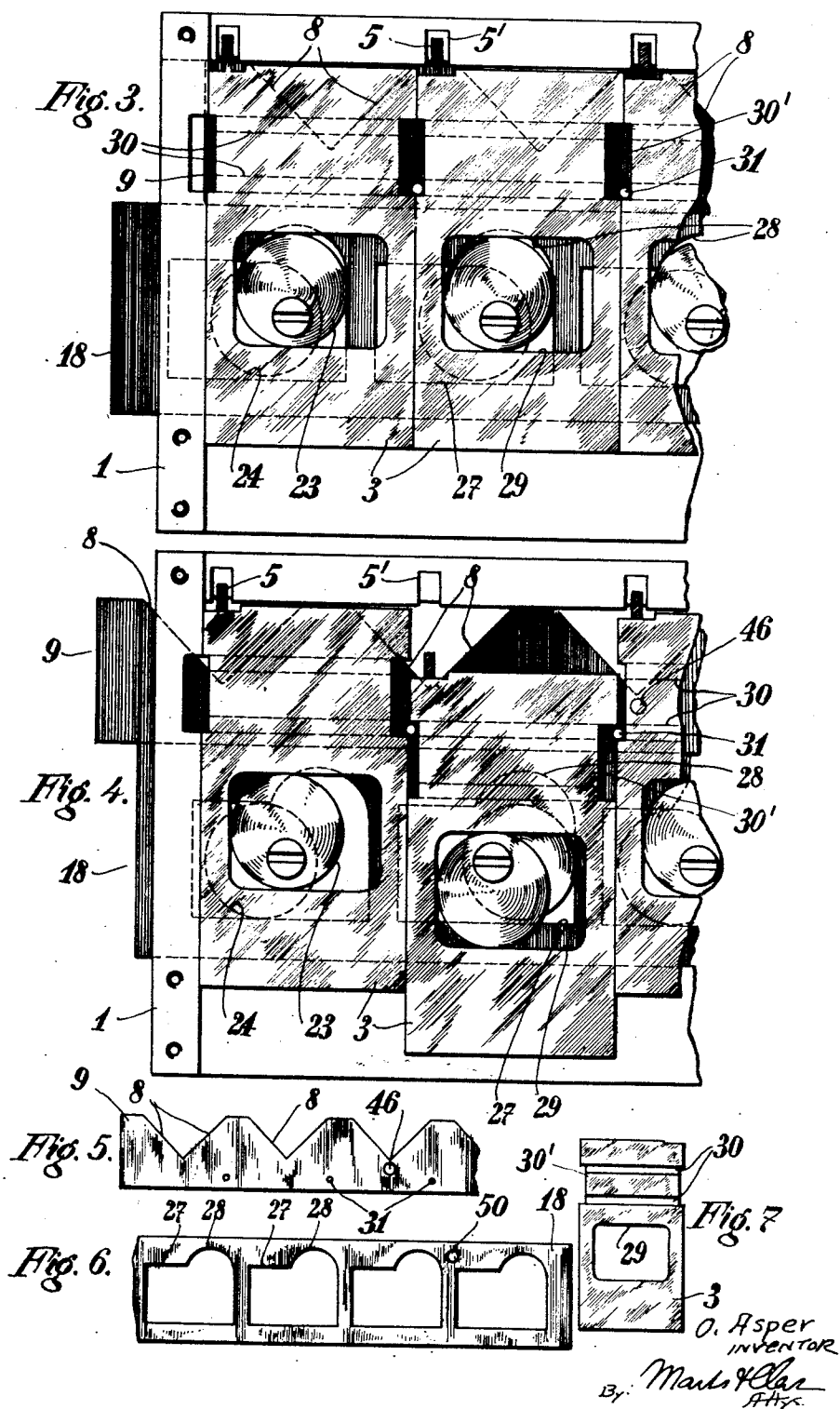
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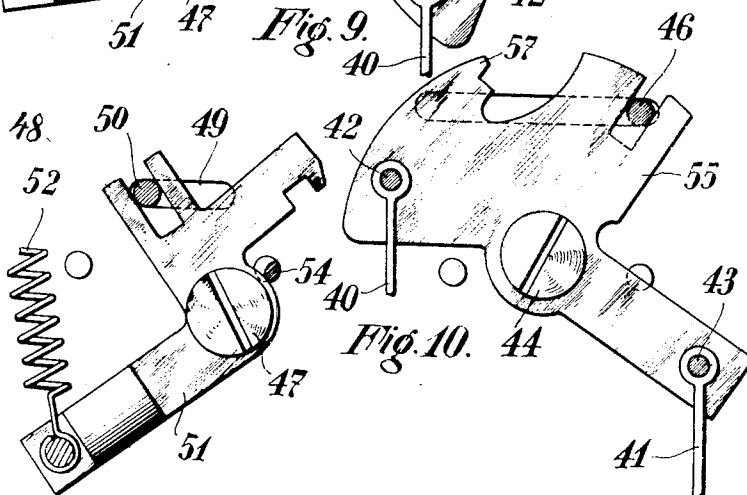
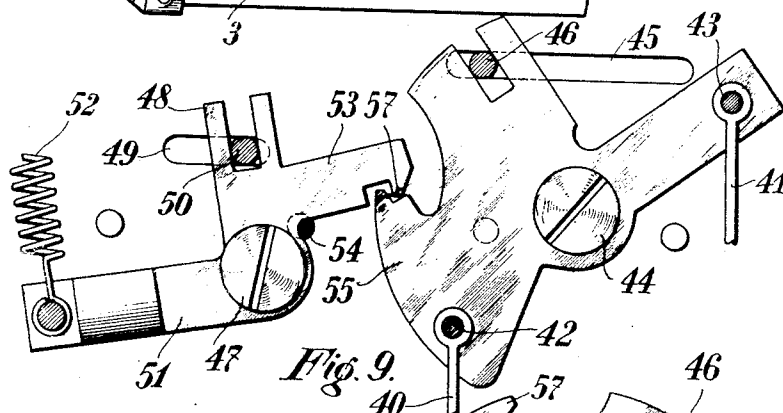
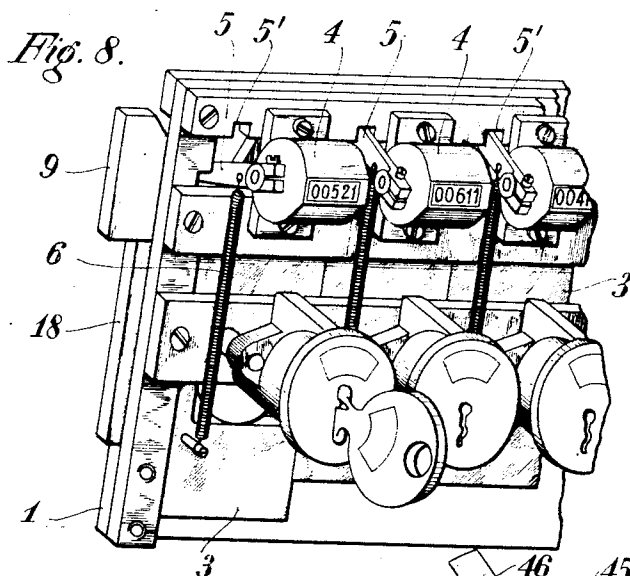
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KEY CONTROL: FOR LIQUID REGISTERS

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3 Sheets-Sheet 3



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KEY CONTROL FOR LIQUID REGISTERS

Application filed November 22, 1929, Serial No. 409,103, and in Switzerland and Germany November 28, 1928.

The present invention relates to a key-controlled liquid dispensing device and more particularly to a key-board provided with a series of key-controlled devices whereof each on the insertion of a key will unlock means for freeing a distributing cock and for registering the delivered quantity of liquid.

The object of the present invention is to provide means whereby any consumer himself will be enabled to draw off any desired quantity of liquid. It is also the object of the present invention to provide individual registering means for each consumer and means preventing the users from encroaching on the property of a neighboring consumer.

The present invention comprises a key-operated vertical slide serving as unlocking means of the respective counter and as locking means for the neighboring counters. It comprises furthermore a first horizontal slide as locking and unlocking means of a four-way distributing cock which controls the filling and discharging of the measuring vessels and as locking means of the neighboring key-operated members and a second horizontal slide moved by an oscillating lever fixed to the plug of the distributing four-way-cock and adapted to operate the counters.

The accompanying drawings represent two working forms of the invention.

Figs. 1 and 2 relate to a first form, while Figures 3 to 10 refer to a second working form.

Figures 1 and 2 are front view and cross sections, both drawn diagrammatically, while

Figures 3 and 4 are portions of front views having locks and counters removed, the first in the position of rest and the second having the second counter released.

The Figures 5, 6 and 7 are detail views of the plate and slides (slide 3 being shown from the back side).

The Fig. 8 is a part of a perspective view of the complete device and Figs. 9 and 10 are views of the backside of the device in

the locked and in the unlocked position of the horizontal slide.

Similar letters of reference indicate similar parts in the different figures.

In the first working form according to the Figures 1 and 2 guiding frame 2 is fixed to a base plate 1, slides 3 being arranged therein side by side and slidable in a vertical sense. Counters 4 are mounted above the slides 3, one for each slide, but only one counter is represented in Fig. 1. The operating arm 5 of each counter 4 is connected to the one end of a tension spring 6 the other end of which is connected to the respective slide 3. In Fig. 1 only one spring 6 is shown. The operating arm 5 of each individual counter 4 when at rest extends into a notch of plate 7 and rests on the truncated end of a slanting tooth 8 of a plate 9 which is slidable in a horizontal sense. The left end of this plate is connected with the hub 12 of the lever 13 of the cock by means of wire 11 extended through a tube 10 mounted on the base plate 1 while the right end of the plate 9 is likewise connected with a point 17 on the hub 12 of the working lever 13 of the distributing cock by means of a wire 15 guided within a tube 14 fixed to the base plate 1: Point 17 is diametrically opposite point 16 to which wire 11 is attached. By this arrangement the toothed plate 9 is forced to slide to the left when lever 13 is swung in the direction of the arrow I and to slide to the right if the lever is swung in an opposite direction.

By means of a toothed segment 13¹ which is provided on the hub 12 of the lever of the cock and is limited by an excavation 13² on each side and by means of a pawl 13³ held by the springs 13⁴ in a median position where it is engaged by the teeth of the segment 13 and is brought into its locking position, the result is obtained that the lever of the cock must always accomplish its whole throw before it can execute its return movement, for only then can the pawl 13³ be reversed because then only can it enter into one of the excavations 13². A

premature return stroke of the lever of the cock is thus prevented.

A second slide 18 intended as a locking member is arranged slidably in a horizontal sense in the frame 1 and serves for unlocking the bolt 20 engaged into a notch 19 of the hub 12 of the lever 13 and for locking at the same time said hub. This bolt is connected to the slide 18 by means of a wire 21 slidably extended through a tube not shown and fixed to the base plate 1. A spring 22 attached at one end to the base plate 1 and at the other end to the bolt 20 tends to throw the bolt into the notch 19 of the hub 12.

A number of double eccentric disks 23—24 corresponding to the number of the individual counters 4 are rotatably lodged in the base plate 1 with a view of raising and lowering the slides 3 and of displacing the slide 18 to the right for unlocking the main lever 13. Each double eccentric disk having its disks mutually displaced for 90° possesses a hub 25 provided with diametrically extended slots 26 into which the carrier of a well known Yale lock may be engaged. As a matter of course each of these locks has its own particular key. The slide 18 has four slots 27 the width of which corresponds to the diameter of the eccentric disks 24. The right end of the slots 27 widens into a circular arch 28. Each slide 3 possesses besides a rectangular hole 29 for receiving the respective eccentric disk 24 and a horizontal slot 30 into which is engaged a pin 31 fixed to the toothed plate 9.

The working of the described working form of the controlling device is as follows:

It has been supposed in the drawings that the outward slide 3 has been lowered by means of a key and that the lever of the cock 13 has been unlocked.

In the position of rest the lever 13 of the cock is locked by the bolt 20 so that from the normal position at the left it cannot be turned to the right. The toothed plate 9 has assumed its extreme position on the right and the operating arms 5 of all counters 4 rest on the highest horizontal edge of the teeth 8 of the plate 9.

All slides 3 are raised and the slide 18 is in its extreme position on the left. The slots 30 of the slides 3 are on the same height as the pins 31 of the plate 9 but do not engage this plate.

Now if one of the Yale locks, for instance the one at the outward right end, is worked the respective eccentric disks 23—24 will be turned in a clockwise sense for 180°. By this the respective slide 3 will be lowered by means of the eccentric disk 24, the spring 6 of the lever of the counter will contract and the slide 18 together with the bolt 20 will be displaced by the eccentric 23 to the right so that the lever 13 of the cock is unlocked.

This lever will be swung now to the right (arrow I) and the respective quantity of benzin will be withdrawn. By this throw of the lever the plate 9 will be drawn to the left so that the operating arm 5 of the outward counter 4 on the right will operate this counter 4 by means of the contracting spring 6 while gliding on the respective tooth 8 of the plate 9. After the filling, the lever 13 of the cock will be swung to the left and thereby also the plate 9 will be displaced to the right. The lowered operating arm 5 of the counter 4 will be raised hereby, but this movement is without influence on the counter. When the lever 13 of the cock has reached its initial position the bolt 20 again catches the notch 19 on the hub of said lever and locks it. The spring 22 again pulls the slide 18 to the left into its starting position. In this the first is helped by the pressure of the eccentric 23 on the circular arch 28 of the slot 27 of the slide 18 which is of some advantage if the tension of the spring is too weak. When the eccentric 24 is turned backwards the slide 3 will be raised again and the spring 6 will be expanded.

When the slide 18 is displaced to the right the narrow portion of its slots 27 is located on the eccentric 23 of the unoperated locks so that these cannot be moved during the handling of the operated lock. A working of one of these locks is only possible when plate 18 has been displaced to the left, so that the respective eccentric disk 24 is free to extend into the circular arch 28 of the respective slot 27 of the slide 18. Also, the lowered slide 3 cannot be raised before the lever of the cock has completed its whole throw and has displaced the plate 9 to the right, because by displacing the plate 9 to the left the respective pin 31 engages the slide 3 and prevents it from rising. The other pins 31 glide in the slots 30 of the slides 3 and lock these slides likewise but only against a displacing downwards. From the above it is seen that all wrong operations of this controlling device are excluded and that a correct counting is assured.

The number and arrangement of the slides 3 can also be different from that what has been described.

The working of this controlling device is extremely simple and needs no instructions.

In the arrangement of the second working form according to the Figures 3 to 10 there is likewise a horizontal slide 18 acting as a locking member for the plate 9 which has to work the operating levers of the counters. The indentations however of the plate 9 are formed by two slanting and convergent edges interrupted by short resting edges for the levers of the counters so that when the plate is reciprocated the lever 5 of the respective counter will be worked by each throw in either direction. Also the arrange-

ment for locking the plate 9 by means of slide 18, is here somewhat different. Plate 9 carries on its backside a pin guided in a slot of the framing. The pin is engaged by the median arm of an oscillatory T lever the side arms of which are connected by rods directly to the distributing cock. This lever can be locked by means of an angular lever which engages with a slotted arm a pin projecting from the backside of the locking slide 9 and rests under the effect of a spring on a stop in which position it engages with a hook a claw provided on the T shaped lever.

According to the Figures 3 to 10 an angular lever 51 and a T shaped lever 55 are pivotally mounted on the screws 47 and 44 respectively on the backside of the framing 1. Rods 40, 41 hinged at the points 42, 43 to the side arms of lever 55 connect this lever directly to a two armed lever not shown but fixed to the plug of the distributing cock like the arm 13 in Fig. 1. The median arm of this lever engages with a slotted portion a pin 46 projecting from the plate 9 through a slot 45, and a claw 57 is so arranged that it may be engaged by a hook provided on the lever 51 which engages with a slotted arm 48 a pin 50 projecting through a slot 49 of the framing from the locking slide 18 and which in its position of rest, shown in Fig. 9, rests on a stop 54 and engages the claw 57 of the lever 55. In this position the plate 9 as well as the distributing cock are locked. As soon however as one of the keys of the registering device has been worked and the locking slide 18 has been displaced into the position where it locks the other eccentric disks 24, the lever 48 by means of pin 50 has been brought into the position shown in Fig. 10 and thereby lever 55 and the distributing cock have been released.

As may be seen from the Figs. 3, 4 and 5, the plate 9 is provided with triangular indentations each having two convergent slanting edges 8. In all other respects the parts of this working form agree with those of the first form. The position of parts in Fig. 3 corresponds to the position of parts in Fig. 9 and the position of parts in Fig. 4 to the position in Fig. 10. Accordingly the operating lever 5 of the counter which in the position of rest is engaged in a notch 5' of the frame will execute one throw for every displacing of the plate 9 towards one direction and for every displacing towards the other direction, that is for each of these displacings said distributing cock has been rocked once.

In order to allow of the vertical movements of the slides 3 in the end positions of the plate 9 vertical indentations 30' have been provided between the slots 30 on

the one side of said slides for giving free passage to the pins 31.

What I claim as new is:

1. In the key-board of a controlling device for retailing liquids from a measuring apparatus provided with individual counters and keys for a plurality of buyers, in combination, a framing, a plurality of counters mounted thereon, operating arms projecting from said counters into said framing, a horizontal slide guided in said framing and adapted to engage the operating arms of the counters, vertical slides slidably arranged in the frame above the horizontal slide and in the path of the said operating arms, a second horizontal slide beneath the first and capable of serving as locking member of the vertical slide, locks mounted on the frame and intermediate operating members associated with the locks and the slides as means for moving said locking member.

2. In the key-board of a controlling device for retailing liquids from a measuring apparatus provided with individual counters and keys for a plurality of buyers, in combination, a framing, a plurality of counters mounted thereon, operating arms projecting from said counters into said framing, a first horizontal slide guided in said framing and possessing indentations with slanting edges as guides and horizontal edges between said indentations as rests for said arms, vertical slides slidably arranged above said horizontal slide and in the path of the said operating arms, a second horizontal slide beneath the first and serving as locking member of the vertical slide and provided with slots having a circularly arched widening at one end of them, locks mounted on the frame, and double eccentric disks inserted as intermediate operating members between locks, vertical slides and the second horizontal slide and engaged with one disk in a squared hole of the vertical slides and with the other disk, set at 180° from the first, in the slots of the second or locking slide.

3. In the key-board of a controlling device for retailing liquids from a measuring apparatus provided with individual counters and keys for a plurality of buyers, in combination, a framing, a plurality of counters mounted thereon, operating arms projecting from said counters into the framing, a horizontal slide guided in said framing and possessing indentations with slanting edges as guides and horizontal edges between said indentations as rests for said arms, vertical slides arranged to lock or release these arms and two horizontal slots provided therein and ending in a lateral indentation of each slide, pins fixed to the said first horizontal slide and registering with the slots of the vertical slides in their end

positions, a second horizontal slide intended
as locking member and having slots with a
circularly arched widening at one end of
them, locks mounted on the frame and dou-
ble eccentric disks intended as intermediate
operating members between locks, vertical
slides and the second horizontal slide and
engaged with one of the disks in a squared
hole of the vertical slides and with the other
disk, set 180° from the first, in the slots of
the second or locking slide.

In testimony whereof I affix my signature.

OTTO ASPER.

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