2 Sheets—Sheet 1.

H. CLARKE.

Register.

No. 200,259. Patented Feb. 12, 1878.

Fig. 1.

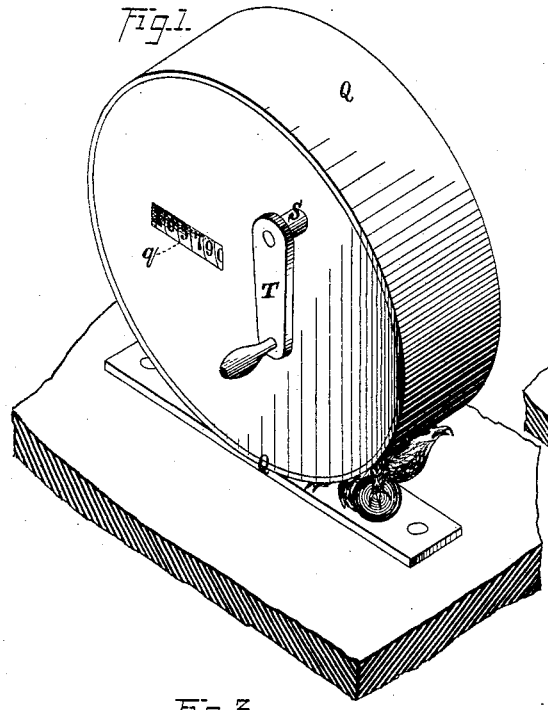


Fig. 2.

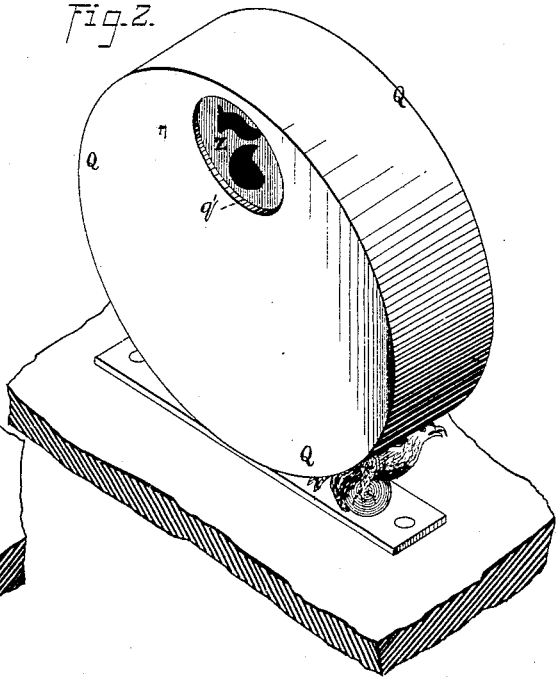


Fig. 3.

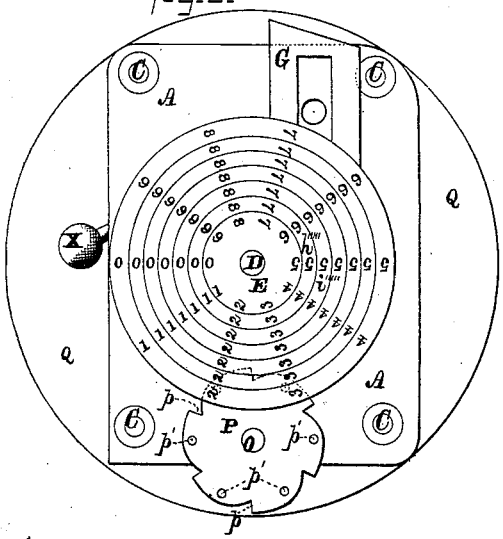
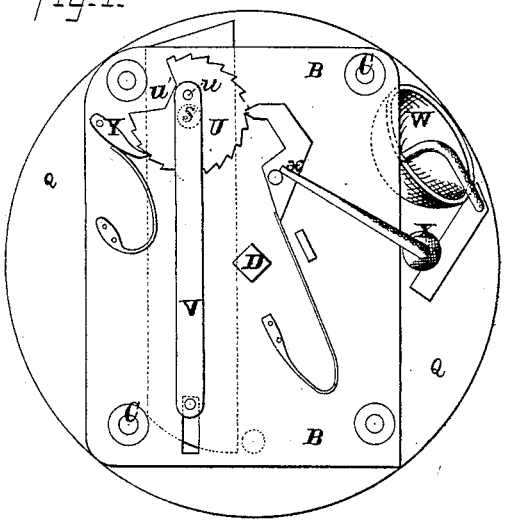


Fig. 4.



WITNESSES:

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2 Sheets—Sheet 2.

H. CLARKE.
Register.

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Fig. 6.

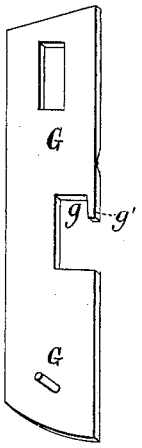


Fig. 5.

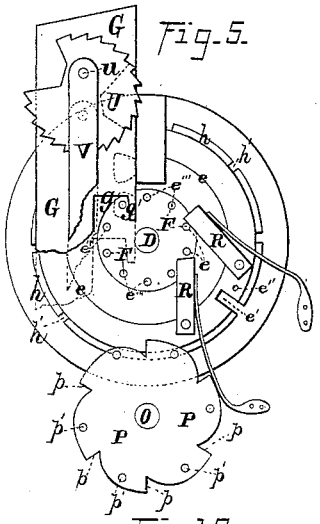


Fig. 7.

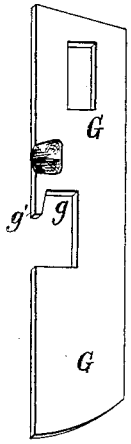


Fig. 8

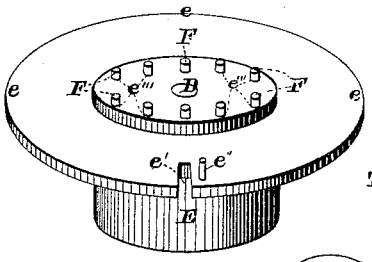


Fig. 10

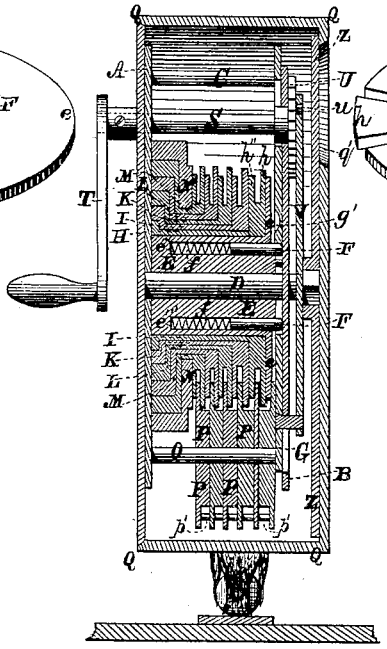
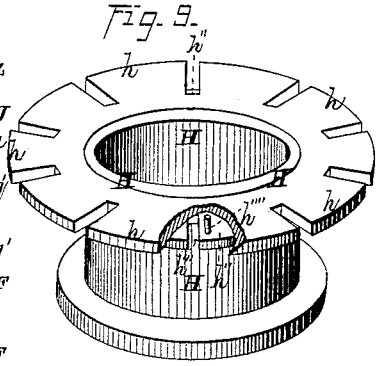


Fig. 9.



WITNESSES:

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Henry Clarke, by

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UNITED STATES PATENT OFFICE.

HENRY CLARKE, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN REGISTERS.

Specification forming part of Letters Patent No. **200,259,** dated February 12, 1878; application filed December 13, 1877.

To all whom it may concern:

Be it known that I, HENRY CLARKE, of Baltimore, in the county of Baltimore, and in the State of Maryland, have invented certain new and useful Improvements in Registers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figures 1 and 2 are perspective views, respectively, of the front and rear sides of my improved register. Fig. 3 is a plan view of the rear side of the registering mechanism separated from its casing. Fig. 4 is a like view of the front side of the same, showing the alarm mechanism. Fig. 5 is an enlarged plan view of the rear side of said registering mechanism, the frame being broken away, so as to show the devices employed for actuating the same. Figs. 6 and 7 are perspective views of the upper and lower sides, respectively, of the operating-slide. Figs. 8 and 9 are like views, respectively of the rear ends of the first and second dial-sleeves, with their toothed disks; and Fig. 10 is a vertical central section of the entire device.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable the accurate registration of any desired information, such as the sale of malt and alcoholic liquors, the passage of persons to or from a building or car, &c., and to render impracticable tampering with the registering mechanism by unauthorized persons; to which end it consists, principally, in the peculiar construction and operation of the combined push-pins and detents for moving to and securing in position the registering-dials, substantially as and for the purpose hereinafter specified.

It consists, further, in the means employed for communicating motion from the primary dial-wheels to the secondary dial-wheels, and for locking the same in position, substantially as and for the purpose hereinafter shown.

It consists, further, in a register provided with an enumerator for recording numbers in the aggregate, and separate mechanism for showing each number so recorded, and inclosed in a casing which is fastened by a registering-lock, so as to prevent access from being had to the interior of said casing without detection, substantially as and for the purpose hereinafter set forth.

It consists, further, in a register provided with an enumerator for recording numbers in the aggregate, separate mechanism for showing each number so recorded, and an alarm which sounds whenever said recording mechanism is operated, and inclosed in a casing that is secured by means of a registering-lock, substantially as and for the purpose hereinafter shown and described.

In the annexed drawings, A and B represent two plates of metal, which have, preferably, a rectangular form in plan view, and are secured together with their contiguous sides parallel, and separated about one and one-half inch by means of four pillars, C, that extend between said plates, and have their ends secured within the same, the whole forming the frame, within and upon which is placed my registering mechanism.

Journaled within the plates A and B, at or near the center of each, is a shaft, D, to or upon which is secured a cylindrical block of metal, E, that, near its rear end, is provided with a circular flange or plate, *c*, which, at one point of its periphery, has a radial notch, *e'*, and near the inner end, at one side of the same, has a short stud, *e''*, that projects rearward from the rear face of said plate.

At equidistant points, near the edge, at the rear end of the cylinder E, are provided ten round openings, *e'''*, which extend longitudinally into the same, nearly to its front end, and contain each a pin, F, that loosely fills the outer portion of the opening, and a spiral spring, *f*, which fills the inner end of the same, and presses said pin outward with a yielding force, the arrangement being shown in Fig. 6.

Fitted into a corresponding groove in the inner face of the plate B, between the same and the end of the cylinder E, is a slide, G, (shown in Fig. 5,) which is arranged to move longitudinally in a vertical direction over the end of said cylinder, at one side of the center of the same.

The central portion of the slide G is cut away from the periphery of the cylinder E to the inner edge of said slide, and at the lower

end of such portion is formed a notch, *g*, which has, preferably, a square form, between which notch and the inner edge of said slide is left a narrow strip or lug, *g'*.

When the slide G is at the lower limit of its movement the lug *g'* is contained between two of the spring-pins F, one of which pins is at or near the bottom of the notch *g*, as seen by the full lines of Fig. 5.

When the slide G is moved upward, the pin F contained within the notch *g* is moved in the same direction until, as shown by the dotted lines of Fig. 5, the cylinder E has been rotated one-tenth of a revolution.

As the pin F which is within the notch *g* is moved downward, the succeeding pin F moves beneath the solid portion of the slide G, the edge of said slide next to the cylinder E being beveled, so as to cause said pin to be automatically pressed into said cylinder by its passage beneath said slide.

When the slide returns to the lower limit of its motion, the pin F which passed beneath, by the partial rotation of the cylinder E, will spring outward into the notch *g*, in position to be engaged and moved upward at the next movement of said slide.

Surrounding the cylinder E is a sleeve, H, which extends from the front end of the same to the plate *e*, and at its rear end is provided with a plate, *h*, that extends radially outward slightly beyond the periphery of said plate *e*, and at equidistant points around its periphery has ten radial notches, *h'*, which correspond in dimensions to the like features of the notch *e'*. A second plate, *h''*, which corresponds in size and shape to the plate *e*, is secured to the sleeve H in front of the plate *h*, sufficient space being left between their inner faces to permit of the insertion of a wheel between said parts. Said plate *h''* is provided with a radial notch, *h'''*, which coincides with one of the notches *h'* of said plate *h*, and at a point near the inner end of said notch *h'''* a stud or pin, *h''''*, passes through said plates. At the front end of the sleeve H is provided a radial flange, *h'''''*, which has sufficient width to enable its front face to receive a figure of the required size, said face being upon a line with the front end of the cylinder E. A second sleeve, I, surrounds the sleeve H, and at its rear end is provided with a radial plate, *i*, which has ten peripheral notches, *i'*, and a second plate, *i''*, that has one peripheral notch, *i'''*, and a stud or pin, *i''''*, said plates being counterparts of the plates *h* and *h''*, before described. At its front end the sleeve I has a flange, *i'''''*, which extends radially outward, and then forward, until its front face, which corresponds to the size of the face of the flange *h'''''*, is upon a line with, but outside of, the latter. Other sleeves, K L M N, &c., are arranged in successive order, as shown, the single and fully notched plates at their rear ends alternating from rear to front, as seen in Fig. 6, while the flanges of their forward end are successively arranged, as shown in Fig. 3, and have one common plane. Pivoted upon a stud, O, which extends between the lower ends of the plates A and B, are wheels P, that correspond in number to the cylinder E and the sleeves pivoted thereon, each of which wheels has six teeth, *p*, similar to the teeth of a circular saw, and, midway between the points of said teeth, has an equal number of pins, *p'*, which extend forward nearly to the contiguous face of the next wheel.

The wheels P are placed with their edges between the single and fully notched plates of each sleeve, and have such dimensions as to cause two of their pins, *p'*, to bear against the periphery of said single-notched plate while engaging with the notches of the fully-notched plate of the succeeding sleeve.

The tooth *p* that is midway between the pins *p'*, which are in engagement, occupies a position to engage with the stud or pin that projects from the face of the single-notched plate.

The operation of the parts described is as follows: When the cylinder E has made a complete revolution, the stud *e''* of its plate *e* engages with the contiguous tooth *p* of the rear wheel P, and moves said wheel forward, while at the same instant the notch *e'* of said plate comes opposite to the rear one of the engaged pins *p'* of said wheel P, and permits the latter to turn freely until the next succeeding pin *p'* impinges upon and is arrested by the solid portion of the periphery of said plate *e*.

The movement of the wheel P causes the notched plate *h* and the sleeve H to be carried forward one-tenth of a revolution, when said plate is again locked in position by the engagement of the teeth *p'* of said wheel P, the latter, as before described, being locked by the contact of the same pins with the solid periphery of the plate *e*.

As each sleeve makes a complete revolution, the sleeve next in advance is carried forward one-tenth of a revolution, so that each revolution of the first sleeve indicates one hundred revolutions of the cylinder; a revolution of the second sleeve indicates one thousand revolutions of said cylinder; a revolution of the third sleeve indicates ten thousand revolutions of said cylinder, &c.

Upon the face of each flange or dial which terminates the front end of each sleeve, and upon the front end, around the edge of the cylinder E, are provided ten numerals, from 1 to and including 0, which numerals are relatively arranged so as to coincide with those of each dial and form lines, as shown by Fig. 3, with the cipher at the point of each where the next outer dial is engaged and moved forward, so that by covering all of said dials except the line of figures with which the cipher on the cylinder coincides at the instant the next outer dial moves, the subsequent operation of the operating-slide G will be correctly indicated by the increase in the number represented by said line of figures.

The mechanism described is inclosed in a

casing, Q, which has, preferably, the form of a short cylinder, and within one of the ends of the same is provided an opening, *q*, through which the desired line of figures may be seen.

In order that the cylinder E may not be carried by its momentum farther than one-tenth of a revolution at each movement of the operating-slide G, one or more spring-detents, R, are so arranged as to engage with the pins F, as shown in Fig. 5.

Motion is imparted to the slide G by means of a shaft, S, which is journaled within the upper ends of the frame-plates A and B, and has upon one end, which projects through the front side of the casing Q, a crank, T, for use in rotating the same, while at its opposite end said shaft is provided with a disk, U, that upon its rear face has a crank-pin, *u*, from which a bar, V, extends downward to and is pivoted upon the lower end of said slide.

If, now, the crank T is turned, the connecting-bar will be raised and depressed, and the slide G caused to move longitudinally within its bearing, as before described.

In order that notice of the registration of each single number may be given to those near, a bell, W, is secured at a suitable point within the casing, and struck by a hammer, X, that is pivoted upon the plate B, and is provided with a tail-piece, *x*, which, by means of a spring, is caused to press upon the periphery of the disk U. At a suitable point in the periphery of the disk U is provided a notch, *w'*, into which, as said disk revolves, the tail-piece *x* drops, and by such movement causes the hammer X to strike the bell W. The edge of the disk U is toothed, and is engaged by a spring-pawl, Y, which prevents rearward motion of the crank T.

Alarms caused by sound may be easily imitated by similar mechanism placed near to and operated instead of registering mechanism, so that those standing near the latter may thus be easily deceived. To avoid this difficulty, I attach to the rear end of the shaft D a circular dial, Z, which, preferably, has as large a diameter as can be contained within the casing Q, and at equidistant points upon its outer face is provided with ten figures, characters, pictures, or other equivalent designs, one of which may be seen through an opening, *q'*, that is provided in the rear side of said casing.

The dial Z is thus caused to revolve simultaneously with the cylinder E, and for each figure upon the dial end of the latter which is brought opposite to the front opening *q* a corresponding figure or character upon said dial Z will appear through the rear opening *q'*.

As thus constructed, the register would be placed with its enumerator of aggregate numbers toward the operator, and its indicator of separate movements of the registering mechanism toward the public, by which means any failure to operate said mechanism at the proper time would be instantly detected.

The casing Q is, preferably supported upon two slender feet, which raise it sufficiently above its base to enable every part to be seen, and, thereby, prevent interference with or manipulation of the register by unauthorized persons without enabling their operations to be seen.

The same object may be attained by suspending the casing Q, instead of supporting it from beneath.

In order that interference by unauthorized persons with the recording mechanism may be still further prevented without causing such fact to be made certain, when desired, I hinge or otherwise connect one side of the casing, and, when the same is closed, secure it with a registering-lock, which can only be opened by operating the register, by which means a change in the number indicated by said register will plainly show that the casing has been opened.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. The means employed for rotating and locking in place the register-cylinder E, consisting of the spring push-pins or detents F, arranged within the rear end of said cylinder, and the slide G, provided with the notch *g* and lug *g'*, and arranged to move longitudinally over the inner end of said cylinder, and to engage alternately with said pins, substantially as and for the purpose specified.

2. As a means for communicating the rotary motion of the primary dials to the succeeding or secondary dials, the plate or flange *e*, provided at its periphery with one radial notch, *e'*, and upon its rear face with the stud *e''*, the plate or flange *h*, provided with ten radial peripheral notches, *h'*, and the wheel P, having several peripheral teeth, *p*, each of which may be brought into position for engagement with said stud *e''*, and provided upon its rear face with several pins, *p'*, that engage with said notches *h'*, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of December, 1877.

HENRY CLARKE

Witnesses:
GEO. S. PRINDLE,
WILLIAM FITCH.