(No Model.)

2 Sheets—Sheet 1.

C. A. TUCKER.

CASE FOR MEDICINE BOTTLES.

No. 350,450. Patented Oct. 5, 1886.

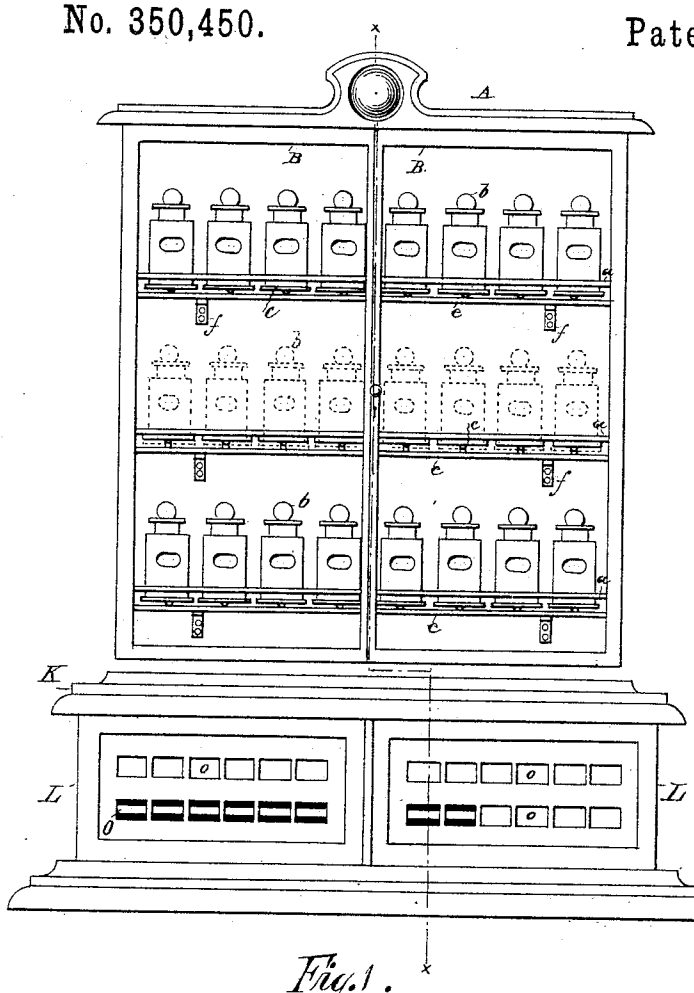


Fig. 1.

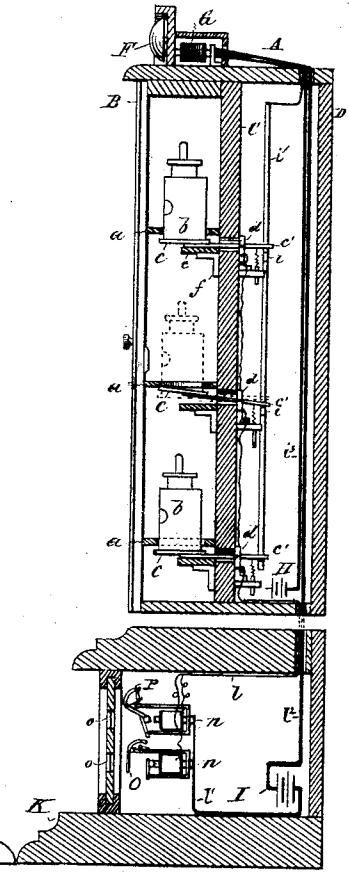


Fig. 2.

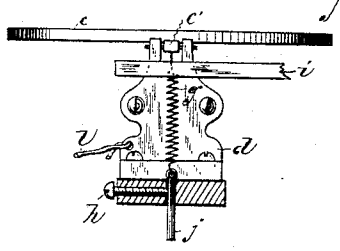


Fig. 5.

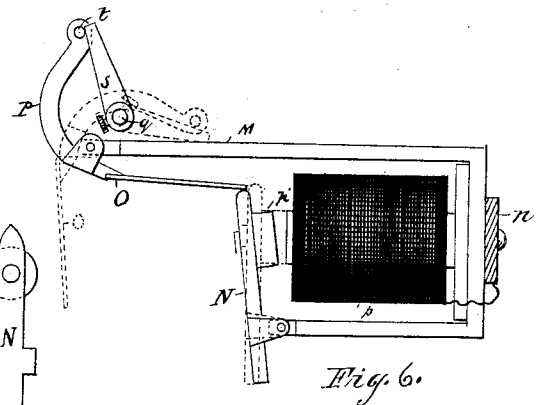


Fig. 6.

Fig. 7.

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(No Model.) 2 Sheets—Sheet 2.

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CASE FOR MEDICINE BOTTLES.

No. 350,450. Patented Oct. 5, 1886.

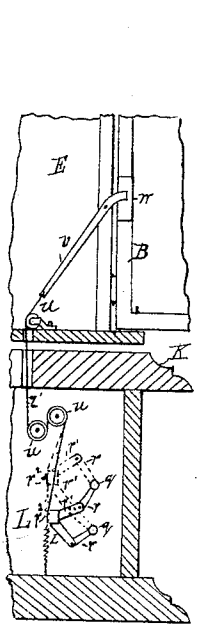


Fig. 4.

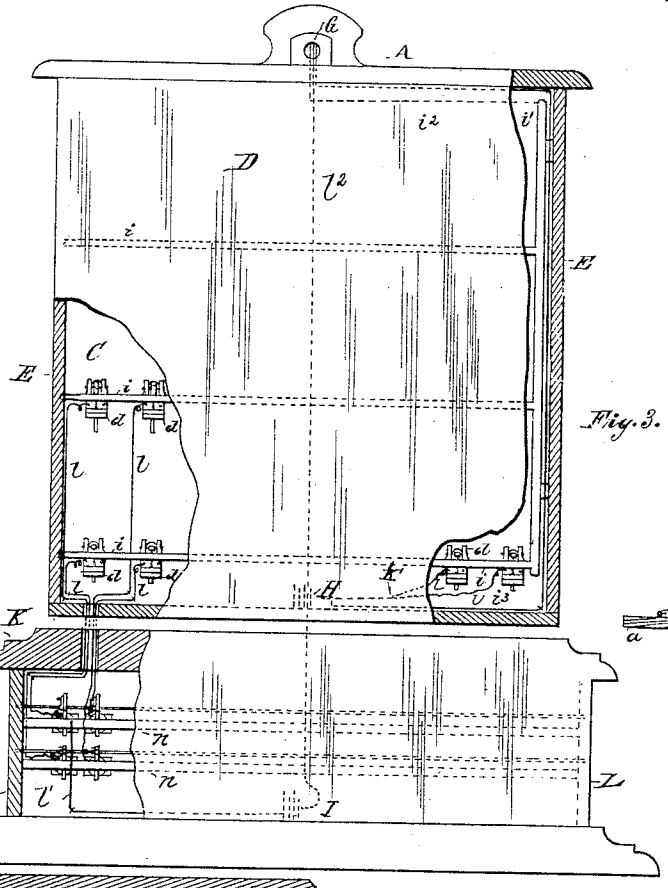


Fig. 3.

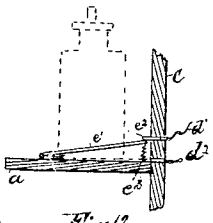


Fig. 12.

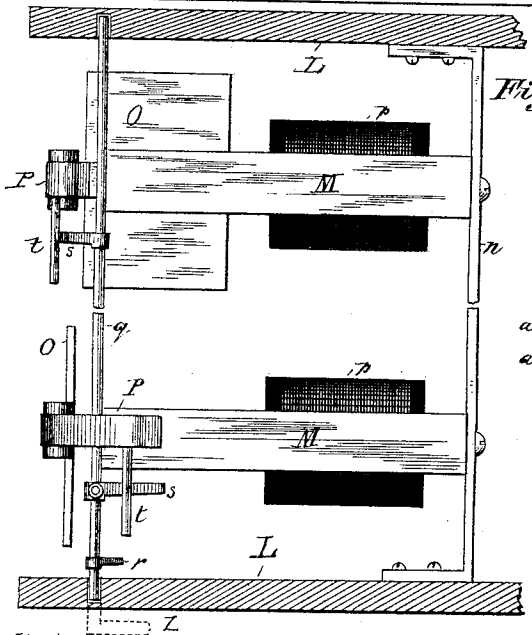


Fig. 8.

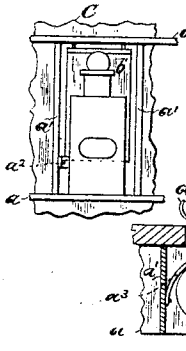


Fig. 9.

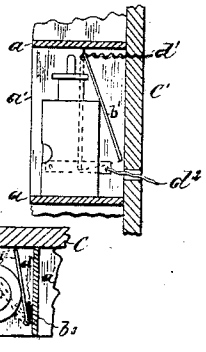


Fig. 10.

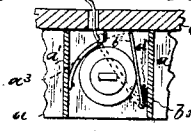


Fig. 11.

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UNITED STATES PATENT OFFICE.

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CASE FOR MEDICINE-BOTTLES.

SPECIFICATION forming part of Letters Patent No. 350,450, dated October 5, 1886.

Application filed January 13, 1886. Serial No. 188,476. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. TUCKER, residing in the town of Islip, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Cases for Medicine-Bottles and Kindred Uses; and I do hereby declare that the following is a full, clear, and exact description of my invention, reference being had to the accompanying drawings, which form a part of this specification.

The object of this invention is a receptacle for holding bottles or other vessels arranged in such a manner that when one of the vessels is removed an alarm-signal will thereby be set in operation; and it is especially adapted to use in compounding medicines, and particularly with reference to the employment of such ingredients as are poisonous, so that the compounder on removing the vessel containing the dangerous ingredient from its place is warned by the alarm; and in addition thereto a registering apparatus can be employed therewith, by which the compounder or others may check off the poisonous ingredients which have been employed in preparing the compound.

My invention may be constructed as shown in the drawings, in which Figure 1 is a front view of a closet containing my invention. Fig. 2 is a section of the same on the line *x x* of Fig. 1. Fig. 3 is a view of the back of the same, with portions of the back broken away to show the arrangement of the interior. Fig. 4 shows a device for resetting the drops. Fig. 5 is an enlarged view from the back of the circuit-closing arm *c'* and its connections. Fig. 6 is a side view of the registering-drops. Figs. 7 is a view of the armature-carrier. Fig. 8 is a top view of the registering-drops. Fig. 9, 10, 11, and 12 show modifications of the circuit-closing device for the bottle-stand.

Similar letters of reference indicate like parts in all the drawings.

A is a closet, preferably provided with doors B, partition C, and back D, and in this closet suitable shelves, *a a*, are arranged, of a proper size to accommodate the number of bottles intended to be used. These shelves *a a* are provided with suitable openings, into which the bottles *b b* may be placed. Under these openings are arranged supports *c c*, upon which the bottles are to stand. These supports may be plates, which are attached to metal arms *c'*, that pass through the partition C, and are pivotally supported in the metal brackets *d* in such a manner that the plates *c* may have an upward and downward movement, as is clearly indicated in Fig. 2, at the central bottle stand, and in Fig. 5.

To support the plates *c c* from beneath, and sustain the weight of the bottles, suitable supporting-strips, *e e*, are placed beneath them, which may be held in position by brackets *f f*. The free ends of the metal arms *c'* are provided with tension-springs *g*, which are made adjustable by means of a set-screw, *h*, which bears against the end of the spring *g*, or against a pin, *j*, attached thereto, as clearly shown in Fig. 5, by means of which the tension of the spring *g* may be regulated as desired. Metal bars *i i* are provided beneath the free ends of the arms *c'* in any suitable position to allow the arms *c'* to rest upon them, thereby forming a contact when the bottle is removed and the spring *g* draws down the arm *c'*. These metal bars *i i* are electrically connected by a wire or rod, as *i'*, to form an electrical unit, and from this rod a wire, i^2, Fig. 3, is carried to the bell-magnet G, the other wire, i^3, of the bell-magnet being carried to one pole of the battery H in the case A, when no registering device is to be employed.

In this use of my invention the wires *l* from all the brackets *d* are carried to a convenient point, as *k'*, Fig. 3, and from them one wire is carried to the other pole of the battery H. The operation of this arrangement is as follows: When the bottles are all in place, the arms *c'* are all held above the bars *i*, but when a bottle is removed from its place the arm *c'* attached to the support *c* of that bottle is drawn down until it rests upon the bar *i*, thereby closing the electrical circuit and setting the alarm in motion, which continues to ring until the bottle is replaced, thereby not only warning the compounder that he has removed a dangerous ingredient from its position on the shelf, but keeping the alarm in operation until he has replaced the bottle in position.

For use with the case A a suitable annunciator-case can be provided, which may be like the case K, in which the drops are ar-

ranged corresponding in number to the bottles designed to be used in the case A. The face of this case K is provided with suitable openings, *o o*, to disclose the drops O.

Each drop-fixture consists of a metallic frame, M, composed of an upper and a lower arm parallel to each other and a vertical part connecting them, conveniently formed of one piece of metal bent or cast into the required shape, the vertical portion being rigidly secured to a metal bar, *n*, as shown in Figs. 6 and 8.

Between the upper and lower arm of the frame M is mounted a suitable magnet, *p*, one wire of which is attached to the bar *n*, and the other wire is carried to its appropriate bracket *d*, as shown at *l*, Fig. 5.

To the lower arm of the frame M a vertical armature-carrier, F, is pivoted, carrying the armature *p'*, which is adjusted and balanced so that in its normal condition it will hang slightly inclined away from the magnet *p*, as shown by the full lines in Fig. 6, its upper edge reaching out far enough when in that position to support the edge of the drop O. This armature-carrier N is rounded at the top and preferably finished to a thin edge, as shown in Fig. 7, to present the least resistance.

The drop O consists of a flat plate, attached to a curved portion or arm, P, which is pivotally hung on the upper arm of the frame M, and so balanced that, when free, the drop O will fall by its own weight into the position shown by the dotted lines in Fig. 6, which will expose its flat side to view at its appropriate opening *o* of the case K.

For resetting the drops a rod, *q*, is pivotally fitted into the sides L L of the case K. To this rod are rigidly attached the spurs *s s*, and to the arms P P of the drops are attached the pins *t t* in such position that the pins *t* will rest upon the arms *s* when the drop is upset, as clearly shown in Figs. 6 and 8, so that by rotating the rod *q* the arms *s* will push on the pins *t* and raise up the drops. As the drops are raised up, they meet and push toward the magnet *p* the armature-carrier N until they have passed beyond its upper edge, when the carrier N drops outward beneath them, and supports them in that position until the magnet *p* is excited and draws the armature toward itself, by which operation the support is removed from the drop O, and it is caused to fall opposite its opening *o*. Upon the outer face of each drop is marked the name of the substance contained in the bottle resting upon the support *c* of the bracket *d* which is connected to that particular drop. All the rods *n*, if more than one is employed to mount the drops, are electrically connected by a suitable rod or wire, *l'*, which forms them into an electrical unit, and this wire is carried to one pole of the battery I, the other pole of the battery being connected to the wire I^2, which is carried to one pole of the bell-magnet G. Each bracket *d* is then connected with its appropriate drop-magnet *p* by one of its wires *l*, the other wire of the drop-magnet *p* being attached to the bar *n*, as stated. In this arrangement the electrical circuit is formed from the metal bars *i i* through the rod *i'* to the bell-magnet G, and from the bell-magnet G to one pole of the battery by means of the wire l^2; but instead of having the wires *l* of the metal brackets *d* carried to one point, *k'*, in the case A, as when no registering device is used, the wires from all the brackets *d* are carried into the case K, as shown in Fig. 3, and each one of such wires *l* is connected with its appropriate annunciator-magnet *p*, and the circuit is completed through one of the wires *l*, rods *n n*, and wire *l'*, to the other pole of the battery I.

The operation is as follows: When all of the bottles *b b* are in the case A, the bottle plates *c* are pressed down by the weight of the bottles. When a bottle is removed from the case A, the spring *g* draws down the end of the arm *c'* until it touches the bar *i*, which is the contact-point that completes the circuit, setting the alarm in action, and causing its appropriate drop to fall. When the bottle is replaced, its weight raises the end of the arm *c'* and breaks the circuit, thereby stopping the alarm. When the prescription has been prepared, the dispenser has before him all of the drops in the annunciator, so that he or some one charged with that duty can see just what has been used in compounding the prescription.

Another feature of my invention consists of means for automatically resetting all the fallen drops by the closing of the case when the prescription has been prepared. This may be done by the device shown in Fig. 4. To each rod *q* an arm, *r*, Figs. 4 and 8, is rigidly attached. All the arms *r*, if more than one is employed, are then connected, so as to be operated together, which is conveniently done by adding little pivoted pieces *r'*, and connecting these to a piece, r^2. To the connecting-piece r^2 a tension-spring, *z*, is then fastened to draw it down toward the bottom of the case K, and a cord or catgut, *z'*, is carried from it over suitable pulleys, *u u*, into the case A to the end of the pivoted lever *v*. This lever *v* is pivoted to the side E of the case A in such a manner that its free end will project from the case when the door B is opened, the drops O being then all set, as shown in the full lines in Fig. 6, and the tension spring *z* operates to draw down the arms *r r*. When the compounder closes the door B, the free end of the lever *v* is pushed inward by the door, thereby drawing the cord *z'*, which raises the arms *r*, rotating the rod *q*, and resetting all the fallen drops. In this way the drops are all reset in position whenever the case is closed.

In Figs. 9, 10, 11, and 12 I show modifications of the arrangement for setting the alarm in action. Fig. 9 is a front view, and Fig. 10 a side view, partly in section, of one of such modifications. *a a* are the shelves for holding the bottles, and they may be conveniently

arranged into separate compartments for each bottle by suitable partitions, a' a'. To the top shelf a a swinging metal plate, b', is hinged, and from its metal hinge a wire, d', is carried back. A wire, d^2, leads from a metal contact-point, a^2, suitably placed so as to be out of the way when the plate b' is raised, but within contact distance of the plate b' when it is allowed to fall. All the wires d' in the system may be then bunched and carried as an electrical unit as one wire to the alarm-magnet G, while each separate wire d^2 is to be carried to its appropriate drop-magnet p, as in the other instance of my invention above described.

Fig. 11 is a plan view, partly in section, of another modification, in which, instead of a plate, b', swinging from the shelf a, a similar metal plate, b^2, is hinged on the side of the dividing-piece a', having a spring, b^3, arranged to push it out when the bottle is removed. A wire, d', is carried from the hinge of the plate b^2 and utilized as in the modification shown in Figs. 9 and 10, and the other wire, d^2, to complete the circuit is carried from a suitable metal contact-point, a^3, which is within contact distance of the plate b^2. When the bottle is removed, the spring b^3 pushes the plate b^2 to the contact-piece a^3, closing the circuit and setting the alarm in operation.

In Fig. 12 is shown still another modification of the bottle-stand in section. C is the central partition. a is the shelf for the bottle. At suitable places on this shelf a metal plate, e', of convenient size is pivoted near the front of the shelf a, so that its inner edge may be moved up and down. On the back C a contact-point, e^2, is disposed at a proper height to be reached by the plate e' when it is raised, and from this contact-point a wire, d', is carried and utilized, as in the other modifications shown in Figs 9 and 10. Under the inner end of the plate e' a spring, e^3, is placed to push it up to the contact-point e^2 when the bottle is removed. This spring e^3 is electrically connected to the wire d^2, which is employed to complete the circuit, as in the other instances.

If desired, the case A may be placed upon the top of the annunciator-case K, or formed with it in one structure; or the case K may be in a different part of the pharmacy and under the care of a checking-clerk, when, of course, the automatic setting device shown in Fig. 4 would not be employed, but instead of that a suitable handle, as Z, Fig. 8, would be attached to the end of the rod q for resetting the drops.

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

1. A receptacle for bottles, having an electric alarm, rests for the bottles provided with movable parts adapted to be held out of circuit-closing position by the bottles when in place and to operate to close the circuit and sound the alarm when a bottle is removed from its place, in combination with registering-drops, as O, adapted to operate when a bottle is removed, substantially as described and shown.

2. In a receptacle for holding bottles, the circuit-closer consisting of the bottle-support c and arm c', provided with suitable supports to hold them in position, in combination with rods i i, having suitable connections adapted to incorporate them in an electrical circuit, substantially as described.

3. The case A, provided with circuit-breakers adapted to close the circuit and sound an alarm when a bottle is removed, in combination with a suitable registering device electrically connected with each circuit-breaker and adapted to indicate at the registering device the particular bottle which has been removed, substantially as described and shown.

4. In a receptable for holding bottles and registering the bottles which are removed therefrom, the registering device shown, consisting of a magnet-support, M, magnet p, armature p', drop O, and their connections, the drops O having arranged upon them the names of the contents of the bottles, in combination with suitable circuit breaking and closing devices operated by removing and replacing the bottles, substantially as described and shown.

5. A receptacle for holding bottles, consisting of a case, as A, provided with bottle-rests and suitable circuit-breaking devices adapted to close the circuit and sound an alarm when a bottle is removed, in combination with a suitable case, as K, provided with registering devices having the names of the contents of the bottles displayed thereon, such registering devices electrically connected with the circuit-breakers and adapted to disclose the name of the contents of each bottle when such bottle is removed from its place, substantially as described and shown.

6. In a receptacle for holding bottles and registering the bottles removed therefrom, a case, as A, containing circuit closing and breaking devices adapted to be operated by removing and replacing the bottles, in combination with suitable indicators adapted to indicate what bottles have been removed, and provided with a device for resetting the indicators, substantially as described and shown.

7. In a receptacle for holding bottles, provided with suitable circuit closing and breaking devices adapted to be operated by removing and replacing the bottles, a registering device adapted to indicate the bottles which have been removed, in combination with a suitable resetting device, as the lever v, and its connections adapted to operate the registering device and reset the indicators automatically by closing the door of the receptacle, substantially as described and shown.

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