(No Model.)

C. H. FITCH.

PRESCRIPTION SCALE.

No. 327,152. Patented Sept. 29, 1885.

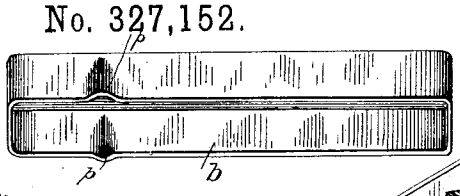


Fig. 1.

Fig. 6.

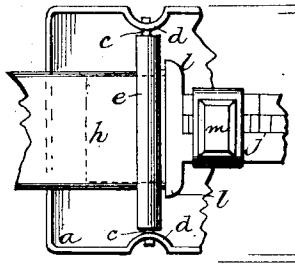


Fig. 2.

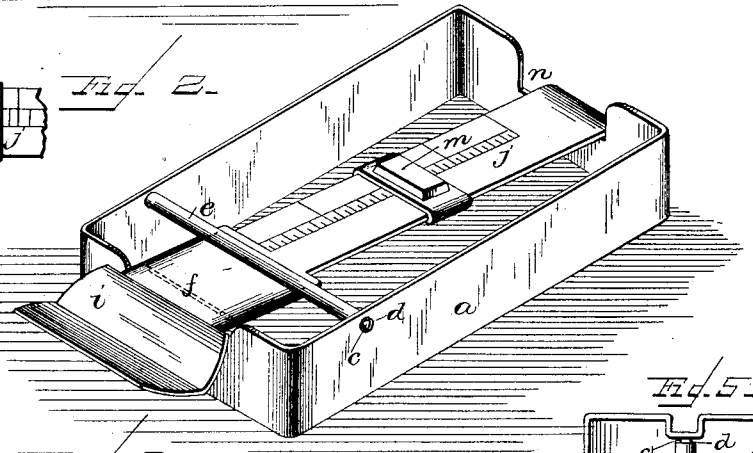


Fig. 5.

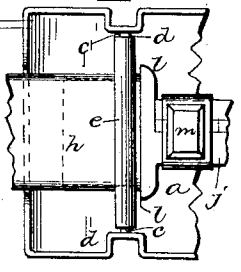


Fig. 3.

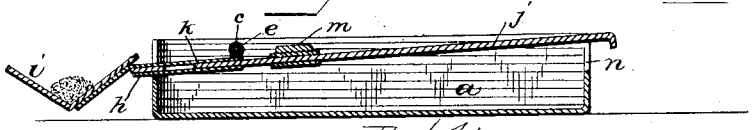
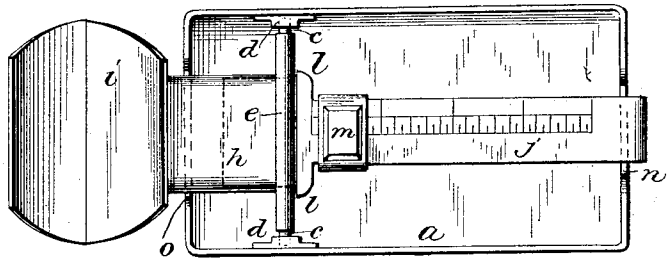


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

CALVIN H. FITCH, OF MIDDLETOWN SPRINGS, VERMONT, ASSIGNOR OF ONE-HALF TO BYRON S. FITCH, OF RICHMOND, VIRGINIA.

PRESCRIPTION-SCALES.

SPECIFICATION forming part of Letters Patent No. 327,152, dated September 29, 1885.

Application filed January 19, 1885. (No model.)

To all whom it may concern:

Be it known that I, CALVIN H. FITCH, a citizen of the United States, residing at Middletown Springs, in the county of Rutland and State of Vermont, have invented certain new and useful Improvements in Prescription-Scales, of which the following is a full, clear, and exact description.

The object of this invention is to provide portable balances or scales that may be carried in a person's pocket for the use of physicians and others, and for families for weighing small quantities of medicine or small divisions of other articles or substances. In order to secure accuracy, that quality so indispensable, particularly in medicine, I deem it essential that the balances shall be of as few parts as possible, and that a permanent pivot be provided for such balances. In order to get the scales within a compass compatible with easy portability some portions must be capable of disjointing, and I find that the member that may be so detached with a minimum loss, and, in fact, no detriment to accuracy, is the graduated arm and weight; hence in constructing my scales I employ a casing or box in which the pan and socket-piece are fixed to a fulcral pin or shaft permanently hung in said casing, and adapted to be turned out from such box for use, and to be reversed into the box when not in use, said pan having facilities for readily receiving a detachable graduated arm and movable weight thereon constituting the beam, and shaped to preserve the balance, and also permit the ready discharge of its contents, the box forming a base or pedestal for the scales, and being provided with a suitable cover.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view of the scales in place in the box, the cover being shown to the left. Fig. 2 is a perspective view of the scales ready for use. Fig. 3 is a vertical longitudinal section of the same; Fig. 4, a top plan view with a modification in the bearings for the fulcral pin, and Figs. 5 and 6 plan views of other modifications of the bearings, the scale of the drawings being somewhat enlarged over the actual size.

The box or casing *a* is made preferably of metal, and rectangular or oblong in shape, struck up in dies or otherwise formed, and its cover *b* is similarly formed and readily detachable; or said box and its cover may be constructed of wood, paper, or other suitable material. *c* is the fulcral pin or shaft, preferably made of steel wire drawn with a knife-edge, as shown, and having its bearings in holes *d* in opposite vertical sides of the box, near one end of such box. This pin may be made from a solid piece of steel or other suitable metal with knife-edge shouldered journals at each end, (see Fig. 5,) obtained by reducing the size of the pin or shaft at its ends; but, preferably, as more economical and to secure a more perfect bearing, the pin is passed through a tube, *e*, and said tube is equal in length to the distance between the sides of the box within the box, while the pin *c* is as much longer as is the outside width of the box greater than its inside, or a little more than that, so as to insure permanence of the pin in its bearings, and prevention of so much longitudinal movement as would permit the accidental disengagement of the pin and its bearings.

To the tube *e* (or to the pin *c*, if the shaft is used without the tube,) is secured a strip of metal, *f*, the longitudinal edges *g* of which are turned down, and then toward each other parallel with the piece *f*, to form a socket or sockets, *h;* and to the free end of said socket-piece *f* is affixed the scale-pan *i*, which may be round, flat, or any shape used for scales; but I prefer to make it V shape in cross-section, so as to preserve the "balance" of the scales, and obviate the necessity for adjustment, and, furthermore, to facilitate the emptying of the pan of its contents.

The pan and its socket-piece may be made of one piece of sheet metal stamped to shape, or cut and shaped in dies, or it may be formed of two pieces suitably united, as by solder.

Instead of having the bearings for the fulcral pin in the sides of the box, they may be separate pieces, something like sheet-metal-pail bail ears secured to the sides within the box, as indicated in Fig. 4, or the sides of the box may be indented, as in Figs. 5 and 6, either angularly or in an arc of a circle to form such bearings.

The scale beam and pan may be made of one solid piece, or the scale beam and pan may be made of separate pieces, and these soldered or fastened together in any other suitable manner, and the pan and scale-beam may be so adjusted as to work all within the box; but, preferably, the scale-beam or graduated arm *j* has a tenon, *k*, to fit the socket *h* of the socket-piece of the pan, and it is limited in its inner movement in said socket, and truly registered therein by lateral lugs *l*. This scale-beam is about the length of the box inside. It is provided with a suitable counterpoise or weight, *m*, sliding thereon by the provision of a loop on its under side embracing the said beam, as indicated in Figs. 1, 2, and 3.

The vertical end walls of the box are cut out at *n* and *o* to permit the movement of the scales when put together for use.

When the pan is reversed, or turned into the box, as in Fig. 1, the knife-edge is reversed with it, and consequently it is saved the wear upon it, which is more injurious in disuse ordinarily than when in use.

When the parts are connected, as in Fig. 2, the box forms a base or pedestal for the scales, and they are in this position ready for use.

The openings *n* and *o*, while permitting free play of the scales, preclude all undue lateral motion, and they are usually no deeper than the flange or rim of the cover, so that the cover when in place will completely inclose all openings in the box.

When the bearings for the fulcral pin are in the sides of the box themselves, the cover will be made with recesses *p* to cover them; but these additions to the cover are not necessary when such bearings are used, as shown in Figs. 4, 5, and 6.

The pan may be unloaded by catching up the box and scales together and tipping them sidewise; and inasmuch as the pan from its V shape will compel the load to seek its bottom angle, and thus preserve the balance without deviation and the use of extraneous means to this end, so the load may be readily discharged in a compact mass.

I desire to lay special stress on making the pan a fixture, for thus it obviates any probability of losing said pan and greatly facilitates the manipulation of the device and overcomes the necessity for any adjustment of the pan to balance it.

I propose putting these scales on the market nickel-plated, or in polished brass, or the like, and to supply each with a spatula and a medicine-dropper.

I do not confine this invention simply to a scale for weighing small quantities, but scales may be made on this principle of any capacity, and may be made portable or stationary.

What I claim is—

1. A scale comprising a box having fixed sides provided with bearings, a scale-pan provided with a tube, *e*, and a bearing-pin secured therein, whereby the pan is permanently hung in the said bearings, a scale-beam connected with such pan, and a movable cover for the box to inclose the pan, bearings, and beam within the box, substantially as described.

2. A prescription-scale comprising a covered casing or box having fixed sides, a scale-pan permanently hung in the said fixed sides, and rotatable on its bearings, so as to be capable of being turned into and out of the box, and a scale-beam adapted to be connected with and disconnected from such pan, substantially as described.

3. A box, a scale-pan provided with a socket-piece, and a knife-edge fulcral pin secured in bearings in the sides of said box, and rotatable in said bearings to adapt it to be turned into and out from said box, and a detachable scale-beam provided with a tenon to engage the socket-piece of the pan, combined substantially as described.

4. A box provided with bearings, a fulcral pin rotatable in said bearings, and a scale-pan secured to said pin and adapted to be turned into or out from the box, combined with a detachable scale-beam, substantially as described.

5. A box provided with bearings, a fulcral pin having a knife-edge and rotatable in said bearings, and a scale-pan rigidly affixed to said pin and adapted to be turned out of or into said box to bring the knife-edge of the pin into operative and inoperative positions, respectively, with respect of its bearings, substantially as described.

6. A box provided with side bearings, a fulcral pin having a knife-edge and rotatable in said bearings, a scale-pan and a tube attached to the socket-piece extending from said pan through which the fulcral pin extends to its bearings on either side, substantially as described.

7. The scale-pan made V shape in cross-section combined with a fulcral pin having permanently-fixed bearings, and a scale-beam, whereby the article or substance to be weighed is compelled to a given center, and a true balance thus preserved, substantially as described.

8. The box *a*, provided with openings *n o* in its ends, side bearings, and a cover combined with the pan, its socket-piece, fulcral pin, and detachable tenoned scale-beam and weight thereon, substantially as described.

9. The combination, with the socketed scale-pan, of the tenoned scale-beam having stop-lugs *l* co-operating with the said socketed pan to insure the correct position of the beam in the socketed pan, substantially as described.

In testimony whereof I have hereunto set my hand this 17th day of January, A. D. 1885.

CALVIN H. FITCH.

Witnesses:
BYRON S. FITCH,
H. SWINEFORD.