

1,296,032.

Fig. 1

8

9

11

12

13

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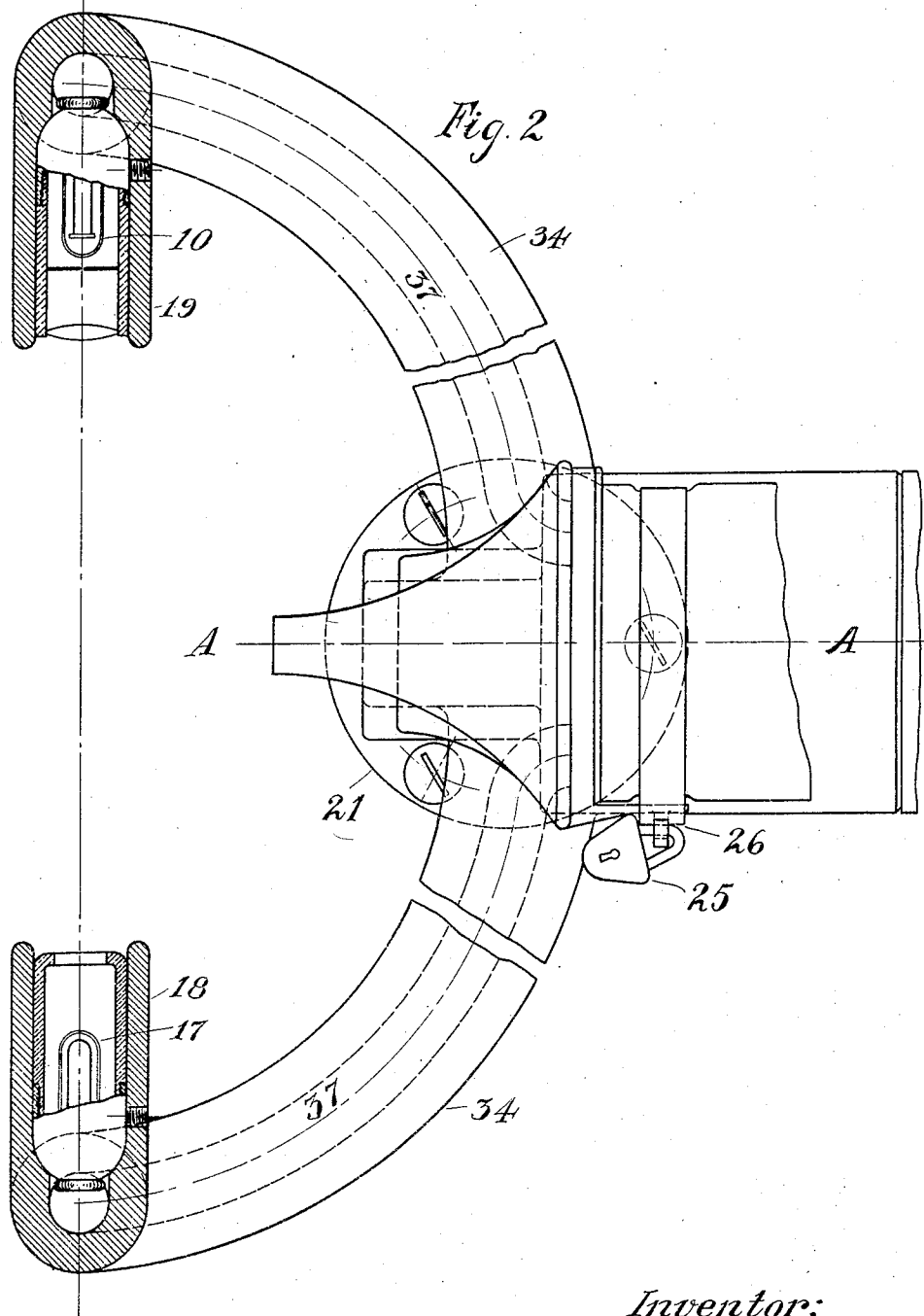
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3 SHEETS—SHEET 2.

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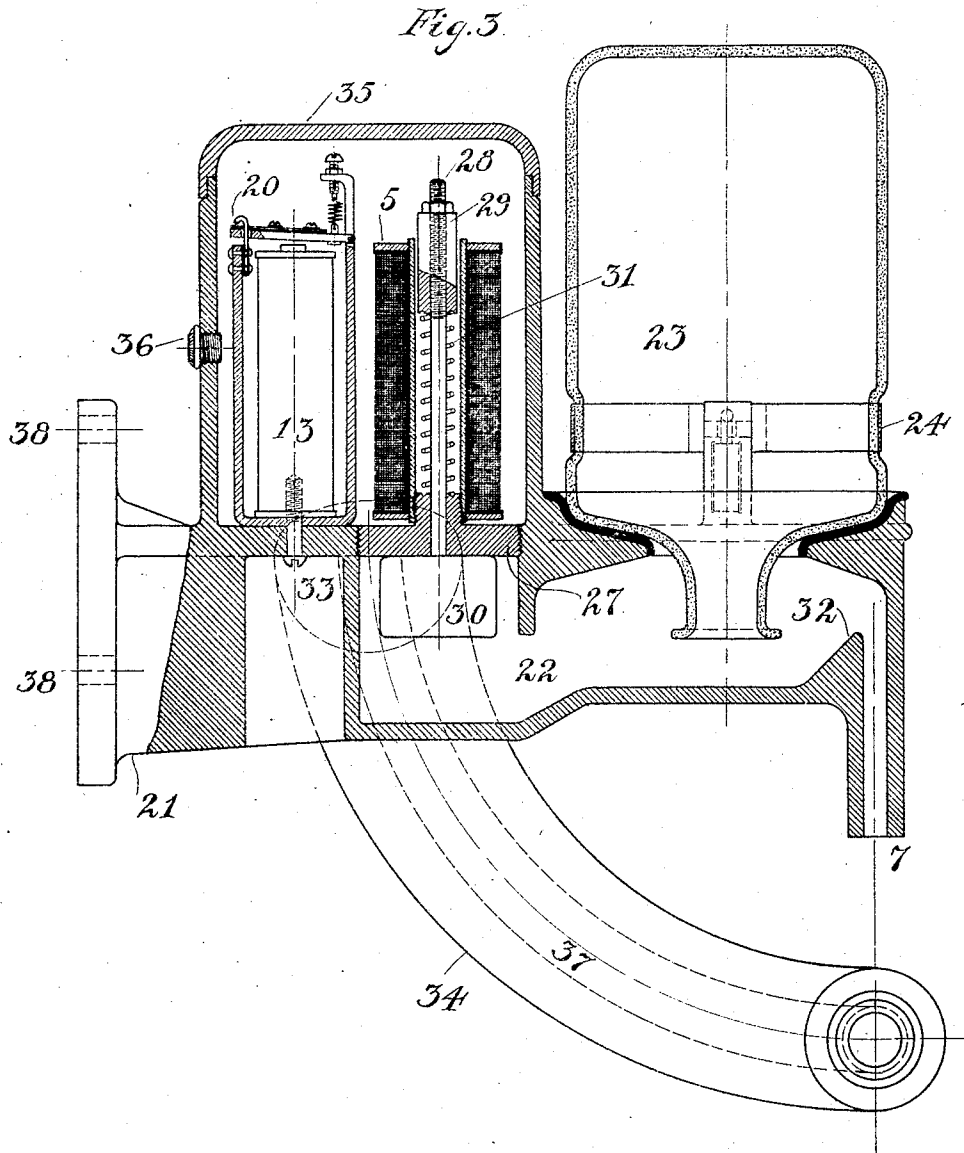


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AUTOMATIC DISPENSER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK W. ADSIT, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Automatic Dispensers, and in this specification and in the drawings I show it as applied to a liquid-dispenser, although the same invention may be applied to dispense any commodity that can be suitably handled by automatic mechanism.

One object of my invention is to provide means whereby the blocking or shutting off of rays, or vibrations may be used to operate vending or dispensing mechanisms.

Another object of my invention is to provide means in a soap dispenser, having a constant level of liquid soap in a chamber, for momentarily raising the level in the chamber so that a certain amount of soap will flow out of an aperture provided for that purpose.

Another object of my invention is to provide in a vending mechanism a selenium cell, a source of light adapted to actuate the selenium cell, dispensing means adjacent to the selenium cell and source of light, so that a person extending a hand or receptacle toward the dispensing means will interfere with the reception of light on the selenium cell, thereby increasing its electrical resistance and operating an electrical mechanism that will give, through the dispensing means, a definite amount of the goods so handled.

With these and incidental objects in view the invention consists of certain novel features of construction and combination of parts, the essential elements of which are hereinafter described with reference to the drawings which accompany and form a part of this specification.

Figure 1 is a schematic circuit embodying my invention, Fig. 2 a plan view of one embodiment of my invention, and Fig. 3 a cross section of Fig. 2 taken on the line "A A", Fig. 2.

In the drawings Fig. 1 discloses schematically my invention as applied to a soap dispenser, in which 1 is a supporting bracket having therein a reservoir 2 for liquid soap fed from the bottle 3, so as to maintain a substantially constant level in the reservoir 2.

A weighted plunger 4 is reciprocally mounted with the chamber 2, so that when

actuated by the solenoid 5 overcoming the strength of the spring 6, the plunger will be depressed into the liquid soap, thus causing a portion to overflow and run out through the aperture 7.

A source of electrical power is applied to the wires 8 and 9 and the selenium cell 10 is connected thereto by wires 11 and 12, the winding of the relay 13 and 14 connecting the relay 13 and the selenium cell in series across the power leads.

A lamp 17 is also connected to the power leads 8 and 9, and the light therefrom is gathered by the lens 16 and focused through the aperture 15 on the selenium cell, the lamp and the selenium cell being mounted in tubular mountings 18 and 19, respectively, to lessen the effect of exterior light.

The light from the lamp 17 will maintain the resistance of the selenium cell at such an amount that the relay 13 is maintained in an actuated position with the contact 20 open.

If by any means, such as a person placing their hands below the aperture 7, the light from the lamp 17 is blocked from the selenium cell 10, its electrical resistance will be increased, the contact 20 will be made and the solenoid 5 placed across the power leads 8 and 9, the action of the solenoid will draw the plunger 4 down into the liquid soap in the chamber 2 and expelling a certain amount of the liquid soap through the aperture 7, the plunger 4 remaining in its lower position as long as the light is blocked off.

When the obstruction of the light is removed, the selenium cell is again actuated by light from the lamp, its resistance lowered, the relay 13 actuated, the contact 20 opened, the plunger 4 lifted by the spring 6, and the level of the liquid in the reservoir 2 restored by the liquid in the bottle 3 in a manner well-known.

Having described the operation of the schematic circuit 1, I will now describe the mechanism used in the actual embodiment of the invention in a soap dispenser.

The frame 21, Fig. 3, which is preferably a casting, has a chamber 22, adapted to receive a bottle 23, which is clamped with a band 24 and locked with the lock 25, Fig. 2, to a lug 26 on the frame, and has also an opening in which is screwed or otherwise fastened a plug 27, Fig. 3, having an aperture in which the stem 28, carrying a core 29 and a plunger 30, is slidably mounted.

The spring 31, serves to normally hold the plunger 30 in the position shown in Fig. 3.

The solenoid 5, Figs. 1 and 3, is mounted on the plug 27, and when actuated draws the core 29 inwardly, thus lowering the plunger 30 in the chamber 22, and as the level of the liquid would normally be maintained at approximately the point 32, the lowering of the plunger 30 would cause a certain amount of liquid to flow out of the aperture 7, Figs. 1 and 3, the level of the liquid at the point 32 being maintained by liquid in the bottle 23, and it is a simple matter to replace the bottle 23 when empty with a new bottle full of liquid soap. The relay 13, Fig. 1, is shown mounted in Fig. 3 to the frame 21 by the screw 33.

Arms 34, forming a part of the casting, extend outwardly and downwardly, and carry the tubular mountings 18 and 19, Fig. 2, so the light from the lamp 17 is projected on to the selenium cell 10, as already described.

A cover 35, Fig. 3, is provided to keep dust and moisture from the relay 13, and the solenoid 5, and is closed in any suitable manner, and an insulating bushing 36 is provided, whereby connecting wires may be brought to the lamp and selenium cell through cored holes 37.

Apertures 38 are provided for mounting the frame to the wall and the entire soap dispenser is hence self-contained.

While I have described my invention and illustrated it in one particular design, I do not wish it understood that I limit myself to this construction, as it is evident that the application of my invention may be varied in many ways within the scope of the following claims.

Claims:

1. In automatic dispensers the combination of a source of light, means whose electrical resistance varies in accordance with the amount of light it receives, automatic means for dispensing commodities, and an electrical circuit including said electrical resistance varying means for operating said automatic dispensing means.

2. In automatic dispensers the combination of a selenium cell, automatic dispensing means, an electrical circuit including said selenium cell and adapted to control said automatic dispensing means, and means for introducing light to said selenium cell.

3. In automatic dispensers the combination of automatic dispensing means, an electrical circuit adapted to control said automatic dispensing means, means included in said electrical circuit having its electrical resistance variable with the amount of light falling thereon, and a source of light normally projecting light rays on said electrical resistance varying means, so positioned that when a hand or container is extended toward

said automatic dispensing means, the amount of light received on said varying electrical resistance means will be modified.

4. In automatic dispensers the combination of automatic dispensing means, an electrical circuit adapted to control said automatic dispensing means, means included in said electrical circuit, whose resistance to electrical current varies with the amount of certain rays received thereon, and means whereby said rays may be projected on to said means whose electrical resistance is variable.

5. In a liquid dispenser the combination of a liquid chamber, an aperture leading from said liquid chamber, liquid dispensing means for causing the flow of liquid from said chamber through said aperture, electrical means for operating said liquid dispensing means, controlled by a circuit having therein a resistance variable with the amount of light received thereon, and means for projecting light on said variable resistance.

6. In a liquid dispenser the combination of a liquid chamber, an aperture therein, liquid dispensing means for causing a certain amount of liquid to flow from said aperture, electrical means for actuating said liquid dispensing means and a circuit for controlling said electrical means including a resistance variable with the amount of rays received thereon, and a source of rays associated with said variable resistance.

7. In a liquid dispenser the combination of a liquid chamber, means for maintaining the level of liquid in said chamber substantially uniform, a plunger associated with said liquid chamber, normally positioned substantially out of the liquid in said liquid chamber, but adapted to be lowered into the liquid of said liquid chamber, an orifice leading from said liquid chamber, so positioned as to be above the level of the liquid when said plunger is raised, and below the level of the liquid when said plunger is lowered, means for controlling said plunger, and electrical means for actuating said plunger actuating means, including a resistance variable with the amount of light rays received thereon, and means for projecting a different amount of light on said variable resistance when said dispenser is actuated than under normal conditions, when it is not actuated.

8. In automatic dispensers the combination of a frame having two arms extending therefrom, a resistance varying with the amount of light received thereon carried by one of said arms, means for projecting light on said resistance carried by the other of said arms, and electrical means for dispensing commodities controlled by said resistance.

9. In automatic dispensers the combination of a frame, two arms extending out-

wardly from said frame, a selenium cell mounted in one of said arms, a lamp mounted in the other of said arms and adapted to project light on said selenium cell, means adapted to deliver commodities at a point substantially between said lamp and said selenium cell, and controlled by the resistance of said selenium cell, so that the diminishing of light received by said selenium cell, caused by introducing any object between said selenium cell and said lamp, will actuate said dispensing means. 10

FRANK W. ADSIT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."