

No. 751,087.

PATENTED FEB. 2, 1904.

W. LYTTON.
COLORED SIGN LAMP.
APPLICATION FILED MAY 4, 1903.

NO MODEL.

Fig. 1.

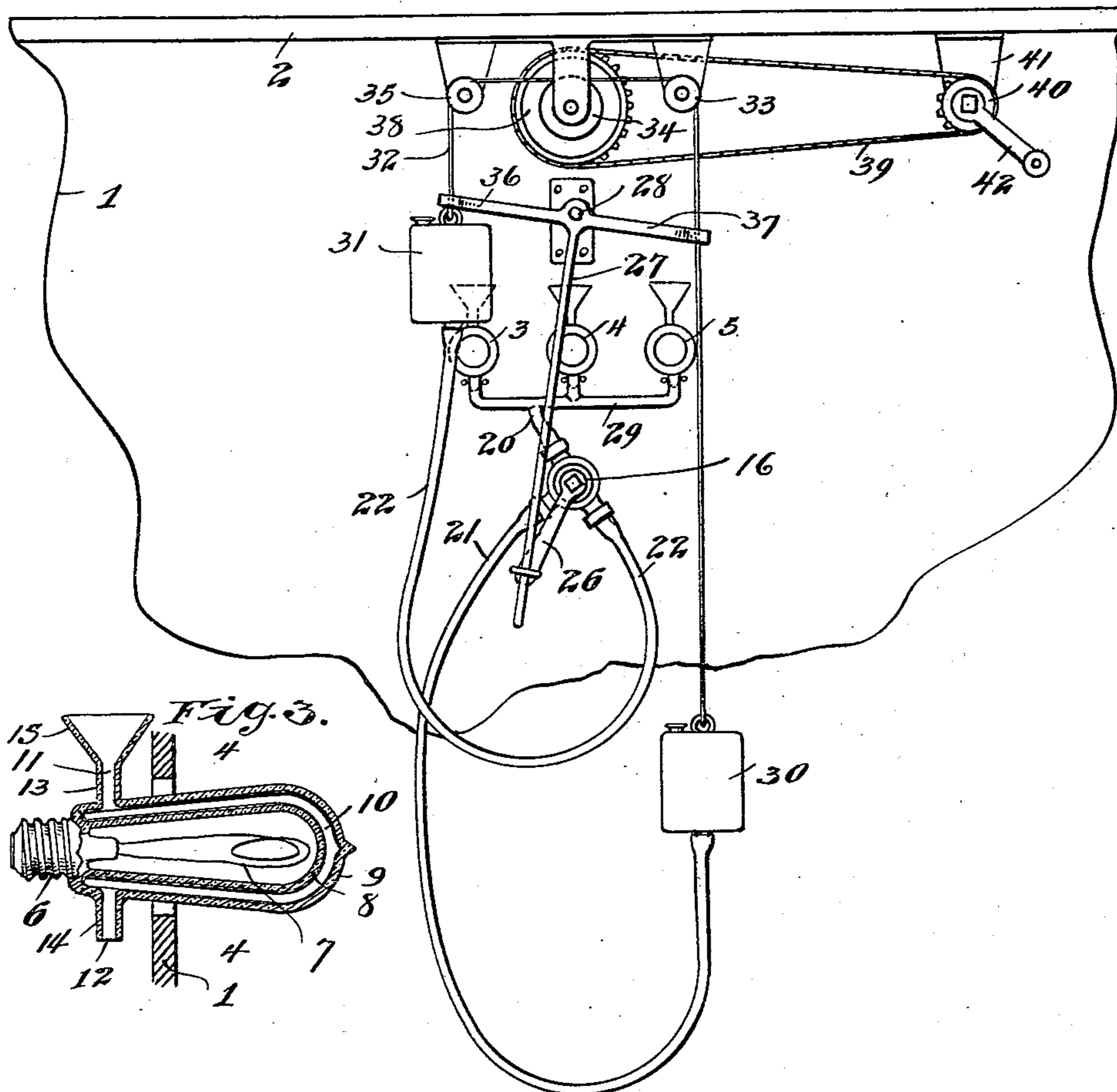


Fig. 3.

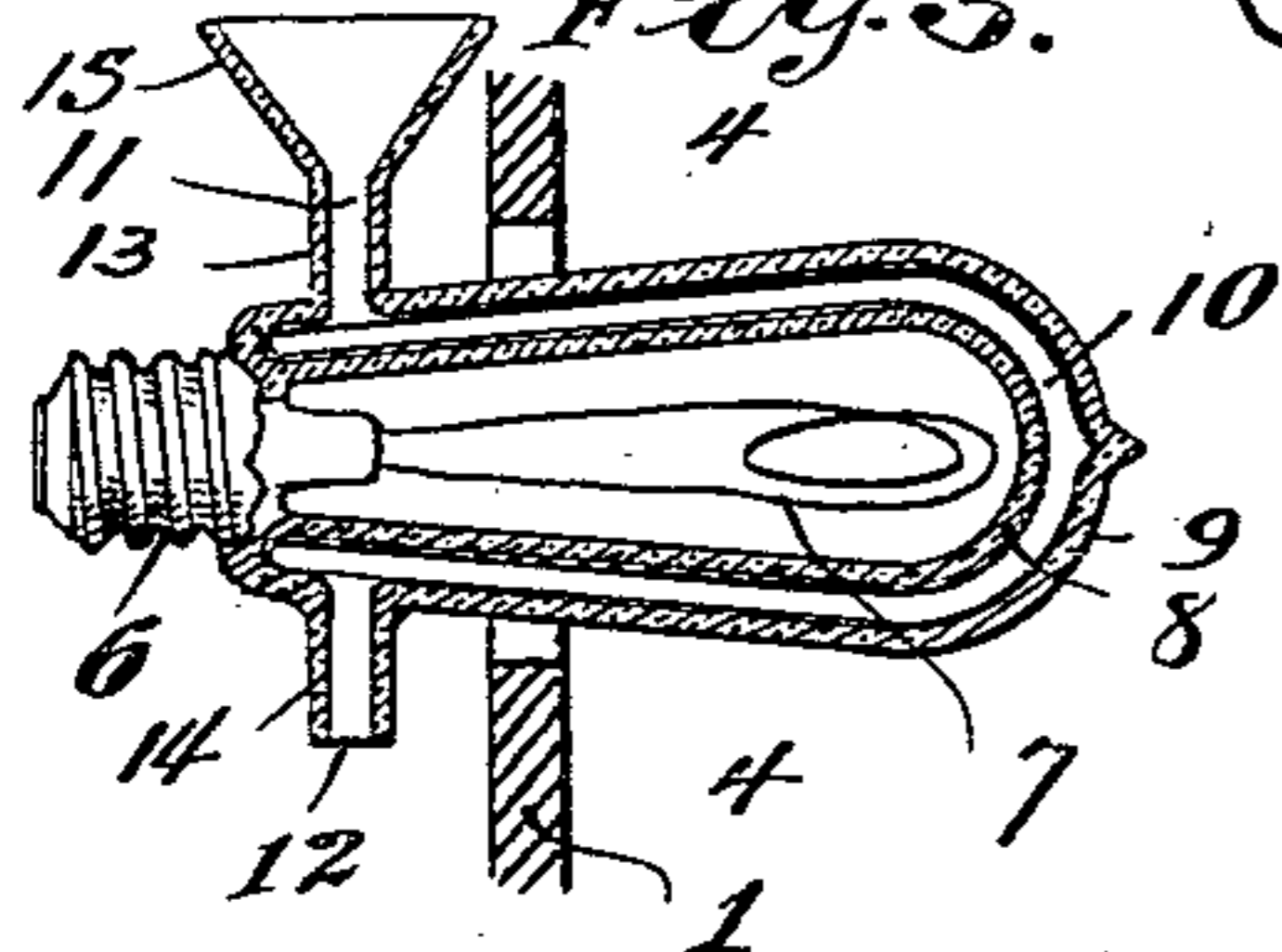


Fig. 2.

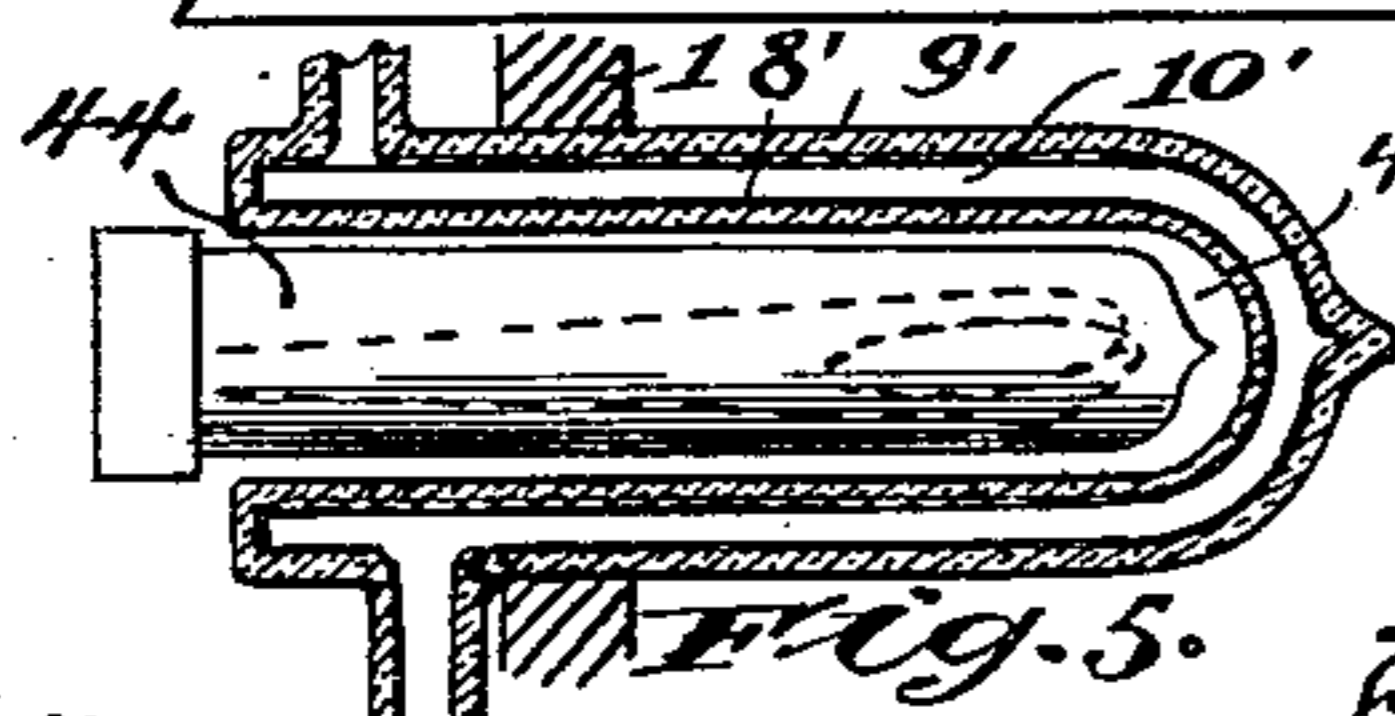
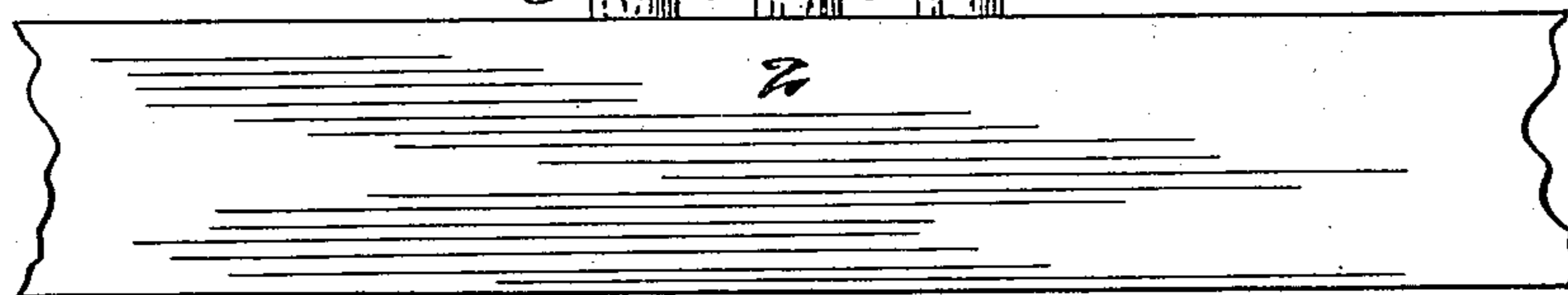


Fig. 6.

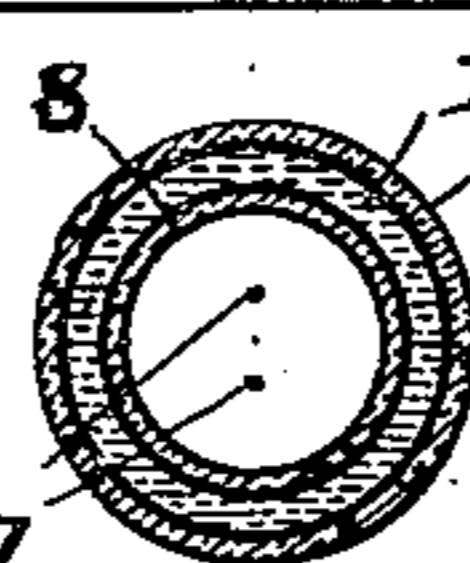
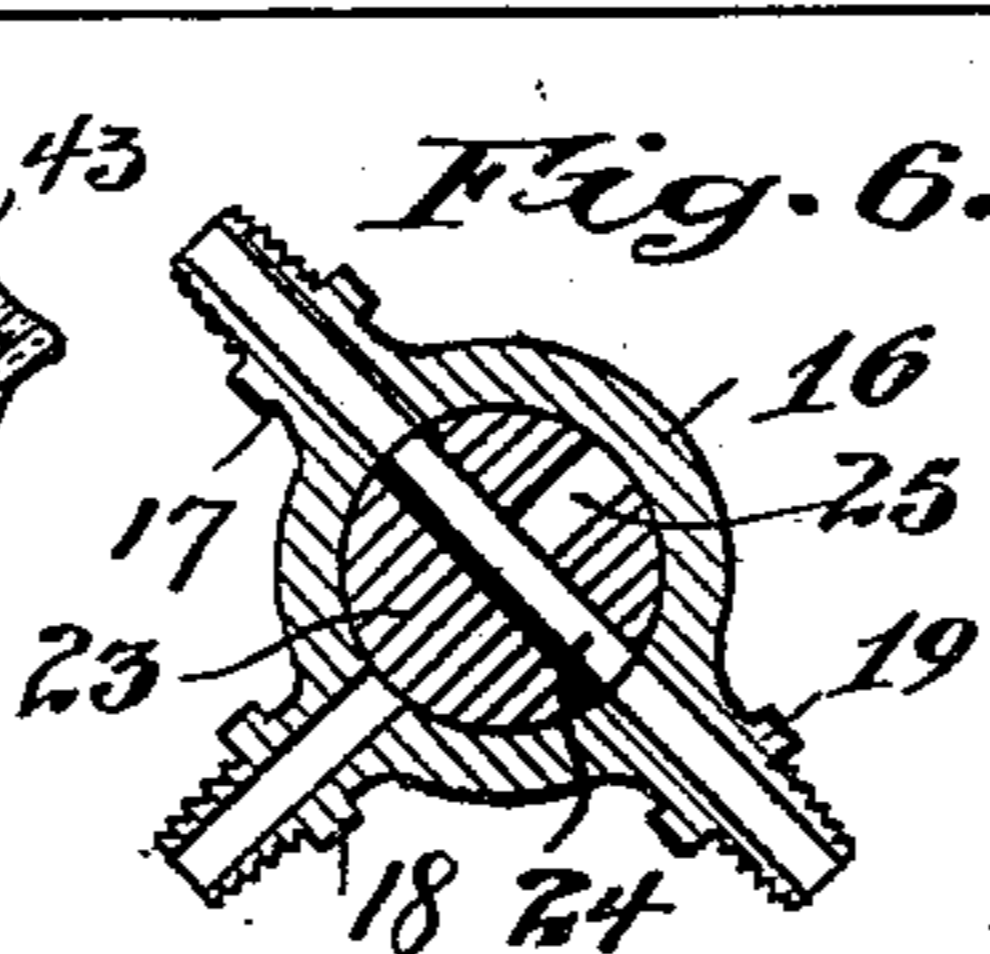


Fig. 4.

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WALTER LYTTON, OF CHICAGO, ILLINOIS.

COLORED SIGN-LAMP.

SPECIFICATION forming part of Letters Patent No. 751,087, dated February 2, 1904.

Application filed May 4, 1903. Serial No. 155,617. (No model.)

To all whom it may concern:

Be it known that I, WALTER LYTTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Colored Sign-Lamps, of which the following is a specification.

This invention relates to improvements in colored sign-lamps; and it has for its salient objects to provide a simple inexpensive apparatus by means of which one or more lamps may be caused to produce successively varied light effects; to provide a construction in which the succession of different colors may be produced automatically by simply operating the apparatus; to provide an apparatus of the character referred to in which the coloring of the lights is effected by the use of variously-colored fluids, which are circulated around the lamp automatically; to provide, in conjunction with the apparatus which affords the motive power for inducing the flow of the liquids, automatically-operating means for controlling the inflow and outflow of the successive charges of liquid, so as to prevent the mixing of the same notwithstanding said liquids successively occupy the same chamber, and in general to provide a simple and improved apparatus of the character referred to.

The invention consists in the matters hereinafter described, and more particularly pointed out in the appended claims, and will be readily understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a rear elevation of a portion of a sign-board equipped with my improved apparatus. Fig. 2 is a top plan view of the same. Fig. 3 is an axial and vertical sectional view of one of the lamps. Fig. 4 is a cross-sectional view taken on line 4 4 of Fig. 3. Fig. 5 is a view similar to Fig. 3 of a modified embodiment of the lamp; and Fig. 6 is a cross-sectional view of the main controlling-cock, taken in a vertical plane coincident with the ports of said cock.

Referring to the drawings, 1 designates as a whole any suitable support—such, for example, as a sign-board—upon which may be mounted my improved apparatus, said board

being in the present instance provided with an upper rearwardly-projecting ledge or cap-piece 2, which overhangs the apparatus and serves as a support for certain parts thereof.

3, 4, and 5 designate a series of lamps mounted in the sign-board so as to project at the front side thereof, as indicated clearly in Fig. 2, the base or socket end portions extending through the sign-board and being exposed at the rear side thereof, as best indicated in Figs. 3 and 5. The lamps employed in the present embodiment of the invention are incandescent electric lamps, each comprising an ordinary plug 6, with which is connected the usual filament 7, an inner inclosing bulb 8, and an outer inclosing bulb 9. In the embodiment shown in Figs. 1 to 4, inclusive, the inner and outer bulbs 8 and 9 are made integral with each other and so constructed as to provide between said bulbs a surrounding chamber 10, with the upper side of which communicates an inlet-passage 11 and with the lower side of which communicates an outlet-passage 12. The inlet and outlet passages are shown as formed by means of integral tubular extensions or nipples 13 and 14, respectively, the former of which is provided with a funnel-like mouth 15 and both of which are located at the base end of the lamp in rear of the supporting-board 1.

At a point a short distance below the lamps is mounted a turn-cock 16, the outer or casing member of which may be seated in or otherwise secured to the rear side of the sign-board, so that the body of the turn-cock projects at right angles therefrom. The body of the turn-cock is provided with a plurality of radially-disposed inlet and outlet nipples 17, 18, and 19, each adapted for connection with a communicating pipe, as 20, 21, and 22.

23 designates the rotatable body of the turn-cock, which is provided with intersecting transverse passages 24 and 25, arranged to register with the several passages 17, 18, and 19 of the turn-cock body when rotated into proper angular relation thereto.

Upon the outer end of the turn-cock body 23 is mounted a rigid radially-extending arm 26, to the outer end of which is connected the lower end of a T-shaped lever 27, pivoted

at its upper end intermediate the length of its cross-arms to a suitable pivot-stud upon the back of the sign-board, as indicated at 28.

The pipe 20 communicates with a header-pipe 29, which in turn communicates with the lower side of each one of the lamps through the passages 12 thereof, as shown clearly in Fig. 1. The two pipes 21 and 22 are flexible and respectively extend to and communicate with the lower sides of reservoirs 30 and 31, said reservoirs being so mounted, as will now be described, as to be raised and lowered relatively to the lamps, so as to produce an alternate inflow and outflow of the liquids contained by the respective reservoirs. To this end said reservoirs are connected by means of a suspending-cable 32, which extends from one reservoir, as 30, up over a guide-pulley 33, thence around a driving-pulley 34 one or more turns, thence to a second guide-pulley 35, and thence downwardly to and connected with the reservoir 31. The suspension portions of the cable 32 extend through the respective ends of the cross-arms 36 and 37 of the T-shaped lever, said arms being to this end apertured for the reception of the cable and being so located with reference to the limits of travel of the reservoirs that as each reservoir approaches its upward limit of travel it will engage the corresponding cross-arm and oscillate the T-lever and in this manner change the position of the cock 16.

As a convenient means of alternately raising and lowering the reservoirs 30 and 31 a sprocket-wheel 38 is rigidly connected with the driving-pulley 34 or with the shaft upon which the latter rotates, and this sprocket is connected, by means of a sprocket-belt 39, with a driving-sprocket 40, journaled upon a suitable bracket 41 and provided with a crank-handle 42, whereby it may be rotated. It will be understood, of course, that the sprocket 38 might be actuated by means of any suitable automatically-controlled driving mechanism.

The operation of the apparatus constructed and arranged as described is as follows: The two reservoirs 30 and 31 having been filled with two differently-colored fluids—as, for example, red and green fluids translucent to light, and the parts being in the position shown in Figs. 1 and 6—the fluid from the reservoir 31 will flow downwardly through the pipe 22 through the two-way cock 16 and into the chambers 10 of the several lamps, thereby inclosing the inner bulb within a sheet of colored translucent fluid, and thus coloring the transmitted light accordingly. The amount of fluid in the reservoirs will be so adjusted as to fill but not overflow the several lamp-chambers 10. To change the color of the lights, the operator will rotate the crank-handle in the proper direction to lower the reservoir 31, thereby elevating the opposite reservoir, and inasmuch as the liquid within the lamps will begin to return to the reser-

voir 31 as soon as the latter reaches a level lower than that of the lamps, if the lowering movement be not too rapid the liquid will all have returned to the reservoir by the time the latter reaches approximately its lower limit of movement. While the reservoir 31 is being lowered the reservoir 30 will be correspondingly elevated; but the T-lever will remain stationary and the position of the cock unchanged until the reservoir 30 reaches and engages the arm 37, whereupon the cock will be shifted to a position to close the pipe 22 and open the pipe 21, it being noted that in its changed position the intersecting passage 25 of the two-way-cock body will be placed in communication with the pipe 20 and one end of the passage 24 in communication with the pipe 21. As soon as the parts have assumed this position the liquid from the reservoir 30 will flow into the lamps, and thus change their color. It is to be noted that in thus changing from one color to the other there will be an interval during which the fluid-chambers of the lamps will be empty and during which, of course, the lamps will appear in their natural or white color. Obviously the operator may arrest the mechanism in a position to show the white light as long as desired before effecting the change of color. To again change the color of the lights, the apparatus is simply rotated in the opposite direction.

As an auxiliary feature of the invention I coat the entire interior walls of the chambers 10 with a film of transparent or substantially transparent paraffin or the like, the object of this being to cause the liquid to entirely flow from the chamber, and thus avoid the gradual mixing of the two liquids, which would result if the chambers did not completely discharge upon each alternate filling.

In Fig. 5 I have shown a slightly-modified embodiment in which the fluid-chamber 10' is formed by means of inner and outer integrally-formed bulbs 8' and 9', which are formed independently of the lamp and so constructed as to provide an open-ended internal chamber 43, within which is inserted a complete lamp 44. This construction has the advantage of enabling the lamp proper to be removed and replaced at will without disturbing the fluid-chamber members, which may therefore be permanently seated within the sign-board or other support in connection with which they are employed.

While I have herein shown and described my invention as used in connection with a sign-board, it will of course be understood that the invention is not in any sense limited to this particular application, and it will also be understood that the number of lamps may be increased or diminished at will without departing from the invention.

While I have herein shown and described what I deem to be a preferred embodiment of

the apparatus, yet the details of construction may be varied, and I do not, therefore, limit myself to such details except to the extent that they are made the subject of specific claims.

5 I claim—

1. In a device of the character described, the combination with a transparent light-bulb, of a transparent shell inclosing the same, a plurality of reservoirs to contain variously-colored fluids, and means for successively circulating said fluids between said reservoirs and the annular space between said bulb and its surrounding shell, substantially as described.

2. In an electric-lamp sign, the combination with a plurality of electric-lamp bulbs, of transparent shells inclosing said bulbs, respectively, a plurality of reservoirs to contain variously-colored fluids, tube connections between said reservoirs and the annular spaces between said bulbs and their inclosing shells, and a multi-way cock or valve interposed in said connections, substantially as described.

3. In an electric sign-lamp, the combination with a plurality of electric-lamp bulbs, of

transparent shells inclosing said bulbs, respectively, a plurality of vertically-movable reservoirs to contain variously-colored fluids, flexible tube connections between said reservoirs and the annular spaces between said bulbs and their inclosing shells, and a multi-way cock or valve interposed in said connections at a height between the upper and lower limits of movement of the reservoirs, substantially as described.

4. In a device of the character described, the combination with an illuminant having a transparent inclosing shell, of an outer transparent shell inclosing said first-named shell, a coating of paraffin or the like on the adjacent surfaces of said shells, and means for introducing and withdrawing a colored fluid to and from the annular space between said shells to produce varied light effects, substantially as described.

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