No. 820,036. PATENTED MAY 22, 1906.

A. D. SOUTHAM.

ELECTRICALLY OPERATED FOUNTAIN.

APPLICATION FILED MAY 27, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

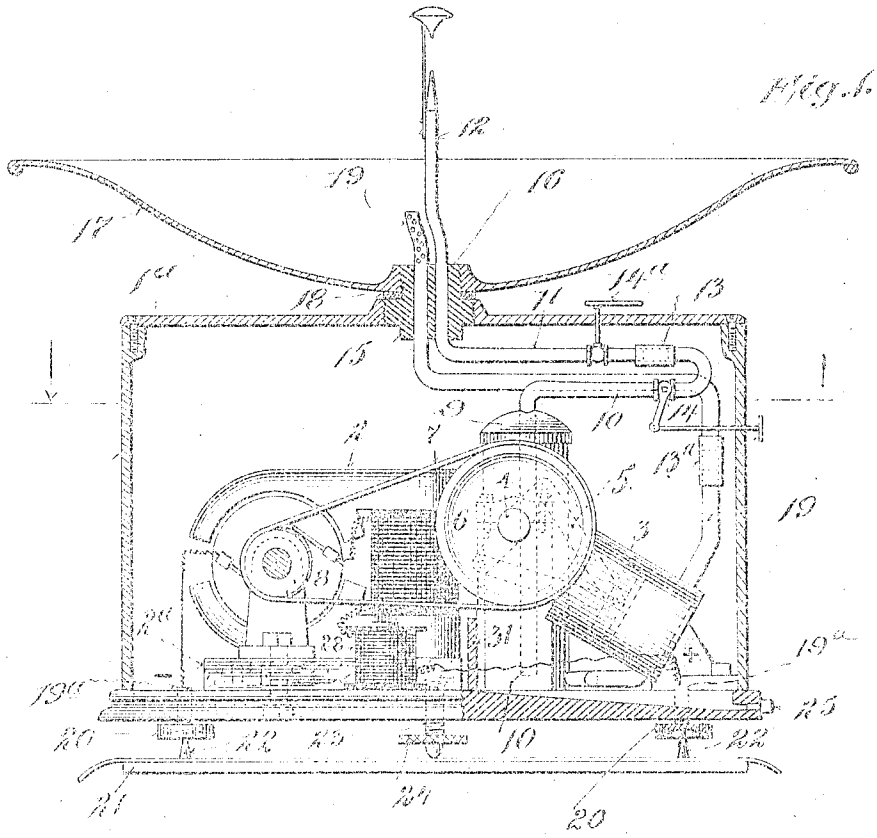


Fig. 3.

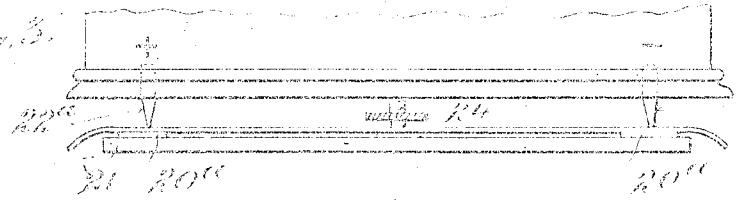
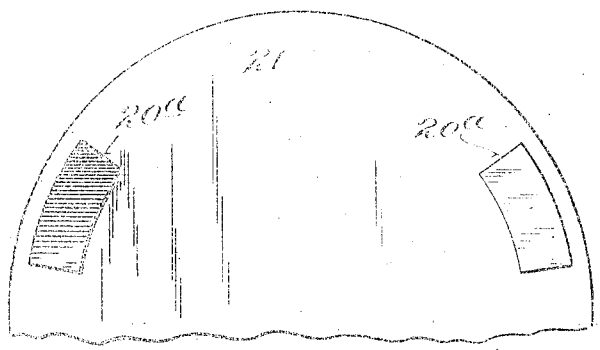


Fig. 4.



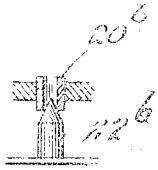


Fig. 3a.

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No. 820,996. PATENTED MAY 22, 1906.

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3 SHEETS—SHEET 2.

Fig. 4.

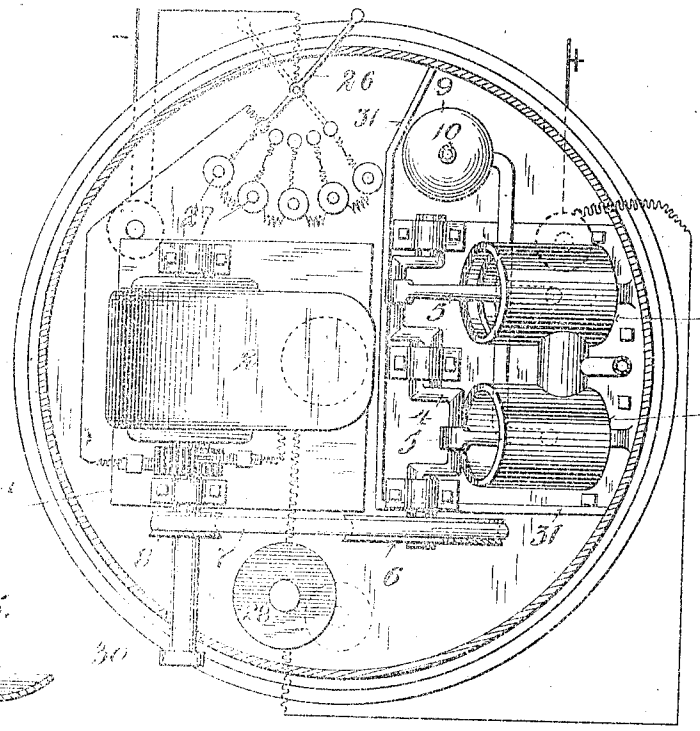

Fig. 5.

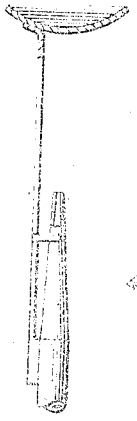

Fig. 6.

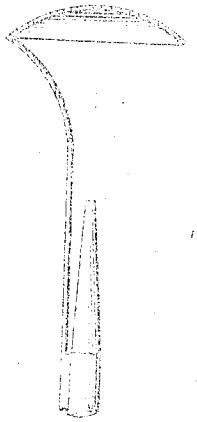

Fig. 7.

Fig. 8.

Fig. 9.

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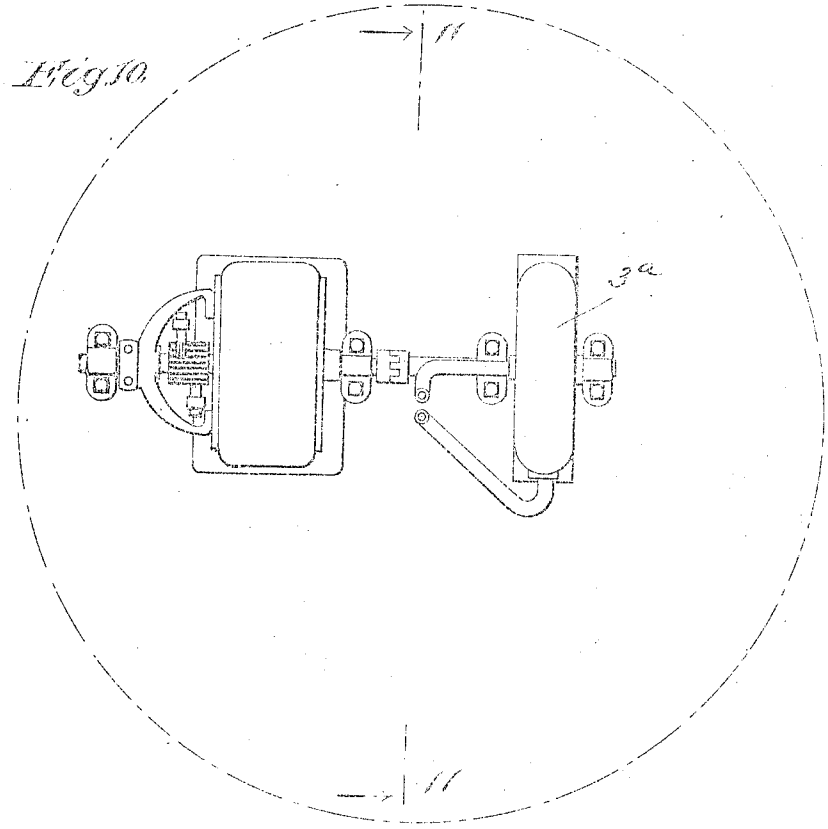
3 SHEETS—SHEET 3.

Fig. 10.



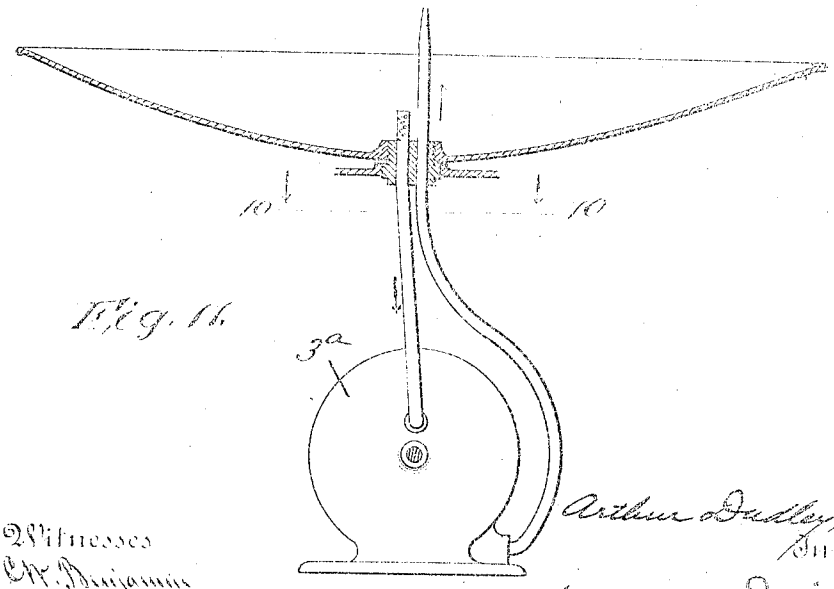


Fig. 11.

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UNITED STATES PATENT OFFICE.

ARTHUR DUDLEY SOUTHAM, OF NEW YORK, N. Y.

ELECTRICALLY-OPERATED FOUNTAIN.

No. 820,996. Specification of Letters Patent. Patented May 22, 1906.

Application filed May 27, 1905. Serial No. 262,587.

To all whom it may concern:

Be it known that I, ARTHUR DUDLEY SOUTHAM, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Electrically-Operated Fountains, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a vertical sectional view thereof; Fig. 2, a horizontal sectional view thereof; Figs. 3 and 3ª, detail views of slightly-modified forms of the contact devices; Fig. 4, a plan view of the supporting-plate; Figs. 5, 6, 7, 8, and 9, detail views showing different forms of fountain-jets; Fig. 10, a plan view showing a rotary pump coupled to the motor, and Fig. 11 a side elevation of the rotary pump and its pipe connections.

The invention relates to fountains in general, but more particularly to small fountains designed for table and indoor decoration.

The invention has for one of its objects to provide a fountain of artistic design in which will be contained electrical means for forcing the water upward to form the jet and means whereby the water or other liquid contained in the fountain may be forced through the jet over and over again, so that there will be no waste and no possibility of it leaking, and the fluid may be perfumed or tinted as desired.

Another object of the invention is to provide improved means for making the electrical connections between the apparatus in the fountain and outside conductors.

A further object of the invention is to provide a simple and efficient electrical apparatus for fountains of this class which may be cheaply constructed and which will be reliable in operation.

Other objects and advantages of the invention will appear hereinafter.

Referring to the various parts by numerals, 1 designates the casing, which contains the operating mechanism. Within the casing is mounted a small electric motor 2 of any suitable design. Within this casing is also mounted a pump 3, said pump being operated by the motor. This pump may be a rotary or centrifugal pump, as shown at 3ª in Fig. 10, if desired. As shown in Figs. 1 and 2, it is a double-cylinder pump, the pistons of which are connected to crank-shaft 4 by means of the pitmen 5. On the shaft 4 is mounted a pulley 6, which is connected by a belt 7 to a pulley 8 on the motor-shaft. The outlet-port of the pump is connected to the lower end of a reservoir 9, whose upper end is sealed except for the water-outlet pipe 10, whose intake is near the bottom of the reservoir 9, as shown clearly in Fig. 1. The upper end of this pipe 10 is connected by pipe 11 to the upward-extending nozzle 12, which is mounted in the top of the casing 1 and is of any desired formation. The pipe 11 is connected to pipe 10 by means of a flexible sleeve 13, so that said pipes may be disconnected whenever it is desired to remove the top of the casing. In the pipe 10 is arranged a valve 14, by means of which the flow of water to the nozzle 12 may be regulated. In the top of the casing is threaded a plug 15, from the center of which rises a large externally-threaded nipple 16. Screwed on this nipple is the basin 17 of the fountain, a washer 18 being interposed between the bottom of said basin and the plug 15 to form a water-tight joint. The pipe 11 extends vertically through the plug 15, as shown clearly in Fig. 1.

The intake of the pump is connected to a pipe 19, which rises through the plug 15, its upper end extending into the basin 17 and being perforated or provided with means for straining the water or other liquid used in the fountain. This pipe is formed in two sections, said sections being connected together by a flexible sleeve 13ª, so that they may be readily disconnected when the top of the casing is removed. It will of course be understood that any other form of coupling may be used on pipes 11 and 19 in place of the sleeves 13 and 13ª.

To electrically connect the motor within the casing to the outside conductors, I provide contact-plates 19ª, which extend below the bottom of the casing and are provided at their lower ends with the heads 20, their upper ends extending within the casing and being electrically connected to the motor. The under sides of the heads 20 are concave, as shown clearly in Fig. 1. In order that the conductors may be concealed under the table-cloth or other table-covering, I provide a thin supporting-plate 21, which is adapted to lie under the table-cover and is provided

with sharp upward-extending contact-points 22, said points being sufficiently small in diameter to pass through the table-cover without materially injuring it. The casing 1 is so placed that the contact-plates 19ª rest on the points 22, as shown clearly in Fig. 1, the casing being supported by said points. The conductor-wires are connected to these contact-points 22 and are carried under the table-cover to a suitable source of supply. It will thus be seen that a positive connection is made from the motor to the source of electrical supply without the necessity of the connecting-wires being visible over the table and without the necessity of cutting holes in the table-cover or otherwise marring it or the table.

To level the casing, a leveling-screw 23 is secured in its bottom, its lower end being adapted to bear on the supporting-plate 21. This screw is provided with a disk 24, by means of which it may be rotated to secure the proper adjustment of the fountain on the supporting-table. It will of course be understood that two or more leveling-screws may be used, if desired.

The reservoir 9 is closed at its upper end, so that air will be compressed therein in order to maintain a constant pressure on the water. The bottom of the casing at a point below the pump inclines downwardly to one side of the casing, so that any condensation or leakage around the pump and the pipes connected thereto will run down said inclined bottom to one side of the casing, a draining-passage being formed at that point, whereby said leakage and condensation may be drained from the casing. This draining-passage is normally closed by means of a plug 25.

If desired, the motor may be controlled by means of a switch 26, the current being completed through a number of resistance-coils 27, so that by moving the switch-arm the resistance-coils may be cut out of the circuit and the speed of the motor correspondingly increased. When the motor is to be operated from an electric-lighting circuit of ordinary voltage, as one hundred and ten or one hundred and twenty volts, said circuit is led through a large resistance-coil 28 in order to reduce said current to a point where it would be safe to employ it in the apparatus. The reduced current is then led through the small resistance-coils 27 and the switch device 26 for the purpose described. The motor will be of the self-starting type. If desired, however, one end of the motor-shaft may be extended through the side of the casing 1 and provided with a small head or flange 30, by means of which the motor may be started.

To deaden the noise of the rotating armature, the motor is placed upon a thick felt pad 2ª, as shown in Fig. 1. If found desirable, the motor and pump may be contained in an inner receptacle or case slightly smaller than the outer case and the intervening space be filled with some sound-absorbing material. It will also be understood that the operating mechanism may be arranged in a case separate from the support for the fountain-basin, if desired. It will of course be understood, also, that any suitable type of pump may be used and that any driving means may be employed to connect the motor with the pump. The motor will be separated from the pump by means of a partition 31 in order to protect it from any water of condensation which may collect about the pump or the pipe connected therewith.

The top 1ª of the casing is preferably detachably secured to the casing, and the sleeves 13 and 13ª are employed in order that the pipes 11 and 19 may be readily disconnected and the top and the basin removed. If desired, suitable doors or removable panels may be provided for the casing in order that the mechanism may be inspected when desired.

It will of course be understood that where I use a centrifugal or rotary pump, as shown in Fig. 10, it will not be necessary to provide the reservoir 9. The outlet from this form of pump will be connected directly to the nozzle, it being apparent that with a rotary pump a uniform speed may be maintained and a uniform flow through the nozzle secured.

In order to secure the desired form of spray or jet from the nozzle, I use various forms of deflector-plates and secure said plates to the nozzle, as shown in Figs. 5 to 8, inclusive. In Fig. 7 I have shown two nozzles connected together and supported one directly above the other. The jet from the lower nozzle strikes the convex bottom of the upper nozzle and is spread thereby. It will of course be understood that any desired form of nozzle or nozzles and deflector plate or plates may be used in order to secure the desired effect.

The pin contact-points may be connected to the bottom of the casing and arranged to rest upon the contact-plates secured to the top of the supporting-plate, as shown at 20ª and 22ª in Fig. 3, if desired. In Fig. 3ª the contact devices consist of a short tube 20ᵇ and a tapered pin 22ᵇ, adapted to enter the tube and to contact therewith, the point of the pin extending up into the tube, so that should there be any spark it will be within the tube and away from the table-cover.

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

1. A fountain comprising a casing provided with a detachable top, an electric motor within the casing, a pump within the casing and adapted to be operated by the motor, a fountain-basin carried by the detachable top, a

nozzle mounted in said basin, a pipe connecting the nozzle to the outlet from the pump, a pipe connecting the pump-intake to the basin, couplings in said pipes whereby the basin and top of the casing may be removed without disturbing the pump in the casing, and means for regulating the jet from the nozzle, a supporting-plate, a pair of contacts carried thereby, a pair of contacts carried by the casing and adapted to rest upon the contacts carried by the plate.

2. A fountain comprising a casing, an electric motor therein, a pump within the casing and adapted to be operated by the motor, means for controlling the speed of the motor, a basin carried by the casing, a nozzle carried by said basin, a pipe connecting said nozzle to the outlet from the pump, and a pipe connecting the pump-intake to said basin, a supporting-plate, a pair of sharp upward-extending contacts carried by said plate, a pair of inverted-cup-shaped contacts carried by the casing and adapted to rest upon the contacts carried by the plate.

3. A fountain comprising a casing, an electric motor therein, a pump in said casing and adapted to be operated by the motor, a basin mounted on said casing, a nozzle carried by said basin, a pipe connecting said nozzle to the pump-outlet, a pipe extending from the pipe-intake into the basin, resistance means in the motor-circuit and means for varying the resistance in said circuit to govern the speed of the motor, a pair of contacts secured to the bottom of the casing, a supporting-plate, a pair of contacts carried thereby and adapted to support the casing by engaging the contacts carried by the casing and a leveling device carried by the casing and adapted to engage the supporting-plate.

4. A fountain comprising a casing, an electric motor therein, a pump within the casing and operated by said motor, a reservoir within said casing and connected to the outlet from said pump, a fountain-basin mounted on top of the casing, a nozzle projecting upward from the bottom of the basin, a pipe connecting the nozzle with the bottom of the reservoir, a valve in said pipe, the upper end of said reservoir being sealed to form an air-chamber, a pipe connecting the bottom of said basin with the intake of the pump, a pair of contacts secured to the bottom of the casing, a pair of contacts connected to the main line-circuit and adapted to be engaged by the contacts on the bottom of the casing whereby the casing may be raised from the supporting-contacts and disengaged from the line of circuit.

5. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the outlet of the pump to said nozzle, a supporting-plate, a pair of electrical contacts carried by said plate, a pair of contacts carried by the bottom of the casing and adapted to engage contacts carried by the supporting-plate.

6. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the outlet of the pump to said nozzle, a supporting-plate, a pair of electrical contacts carried by said plate, a pair of contacts carried by the bottom of the casing and adapted to rest on the contacts carried by the supporting-plate.

7. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the outlet of the pump to said nozzle, a supporting-plate, a pair of electrical contacts carried by said plate, a pair of contacts carried by the bottom of the casing and adapted to rest on the contacts carried by the supporting-plate, one of said sets of contacts being sharpened and of very small diameter.

8. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the outlet of the pump to said nozzle, a supporting-plate adapted to be placed under a table-cover, a pair of sharp upward-extending contact-points carried by said supporting-plate and adapted to extend through the table-cover, and a pair of contact-plates secured to the bottom of the casing and adapted to rest upon the tops of the contact-points carried by the supporting-plate, and means for electrically connecting the contact-plates with the motor, and means for electrically connecting the contact-points of the supporting-plate with a source of supply.

9. Means for forming electrical connections comprising a casing supporting an electric device, a pair of contacts secured to the bottom thereof, a supporting-plate adapted to be placed under a table-cover, a pair of contact-points on said plate, one of said pairs of contact-points being sharpened and of very small diameter, whereby they will pass through the table-cover without materially marring the same.

10. Means for forming electrical connections comprising a casing supporting an electric device, a pair of contacts secured to the bottom thereof, a supporting-plate adapted to be placed under a table-cover, a pair of contact-plates secured to the bottom of said casing, said contact-plates being concave on their under sides, a supporting-plate adapted to be placed under the table-cover, a pair of sharp pin-like contact-points secured to said plate and adapted to pass through the table-cover without materially marring the same, the contact-plates of the casing being adapted to rest upon said points.

11. A fountain comprising a casing, an

electric motor therein, a pump adapted to be operated by said motor, a nozzle connected to said pump, a liquid-supply connected to said pump, means for forming electric connections with said motor, said means consisting of a pair of contacts secured to the bottom of the casing, a supporting-plate, a pair of contacts carried thereby and adapted to receive the contacts carried by the casing and to support the casing, and a leveling device carried by the casing between the contacts and adapted to engage the supporting-plate.

12. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the pump to the nozzle, a supporting-plate, a pair of sharp upward-extending contact-points carried by said supporting-plate, a pair of tubular contacts secured to the bottom of the casing and adapted to receive the contact-points carried by the plate, one of said sets of contacts being tapered to bring the two contacts into engagement, and means for electrically connecting the tubular contacts with the motor.

13. A fountain comprising a closed casing, an electric motor therein, a pump within the casing and adapted to be operated by the motor, a basin carried by the casing, a nozzle supported in said basin, means connecting the nozzle to the pump-outlet, a pipe connected to the pump-intake and in communication with the fountain-basin, motor-circuit terminals secured to the bottom of the casing, and supporting devices adapted to engage said terminals to complete the motor-circuit.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses this 15th day of May, 1905.

ARTHUR DUDLEY SOUTHAM.

Witnesses:
S. B. WHINERY,
W. A. ROBERTS.