No. 685,675. Patented Oct. 29, 1901.

W. H. DEWAR.

NOZZLE FOR DRINKING FOUNTAINS.

(Application filed Mar. 23, 1901.)

(No Model.)

Fig. 1.

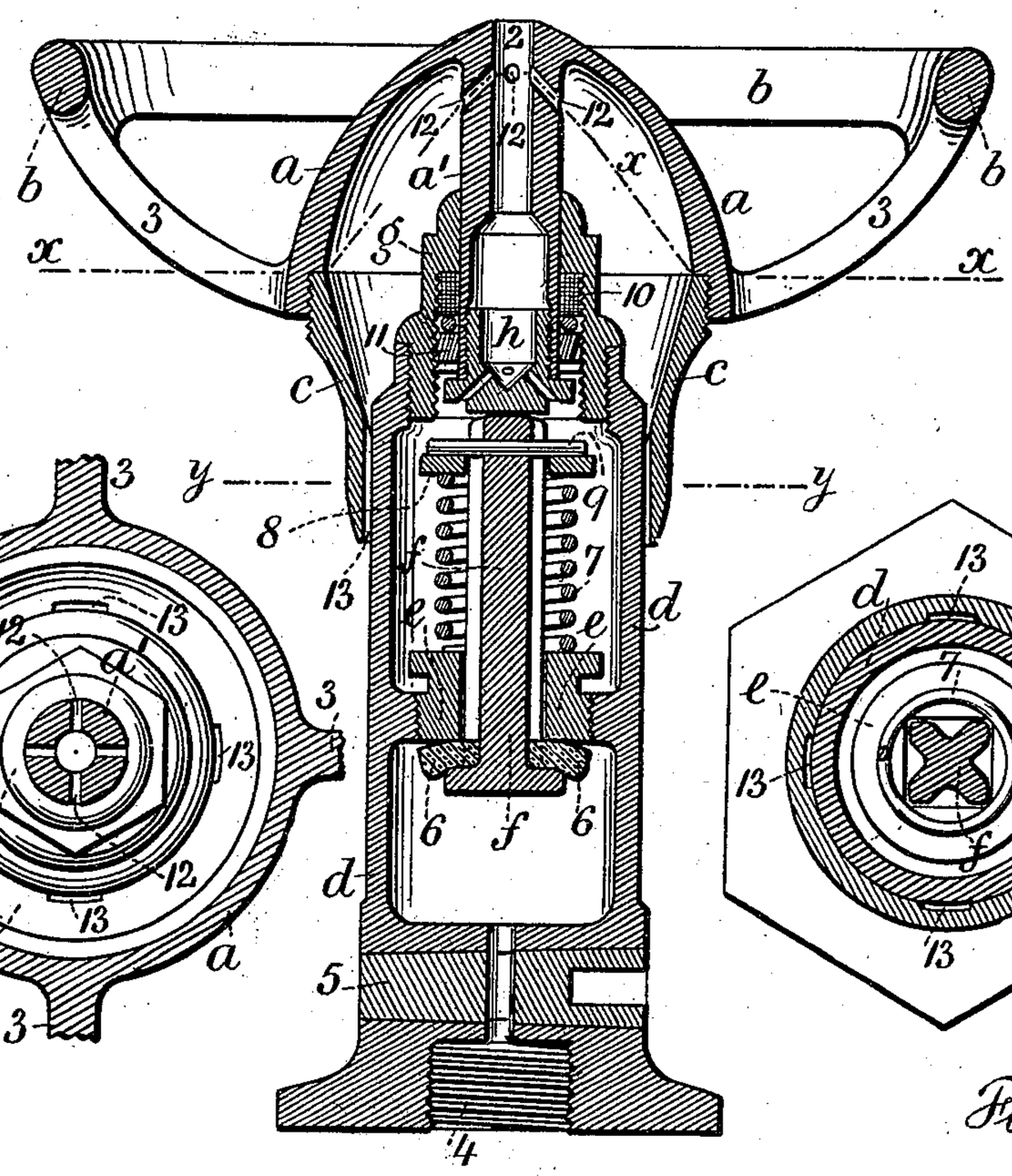


Fig. 3.

Fig. 4.

Fig. 5.

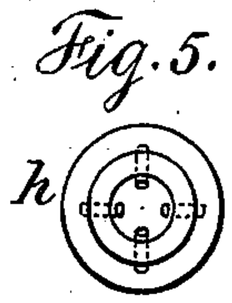
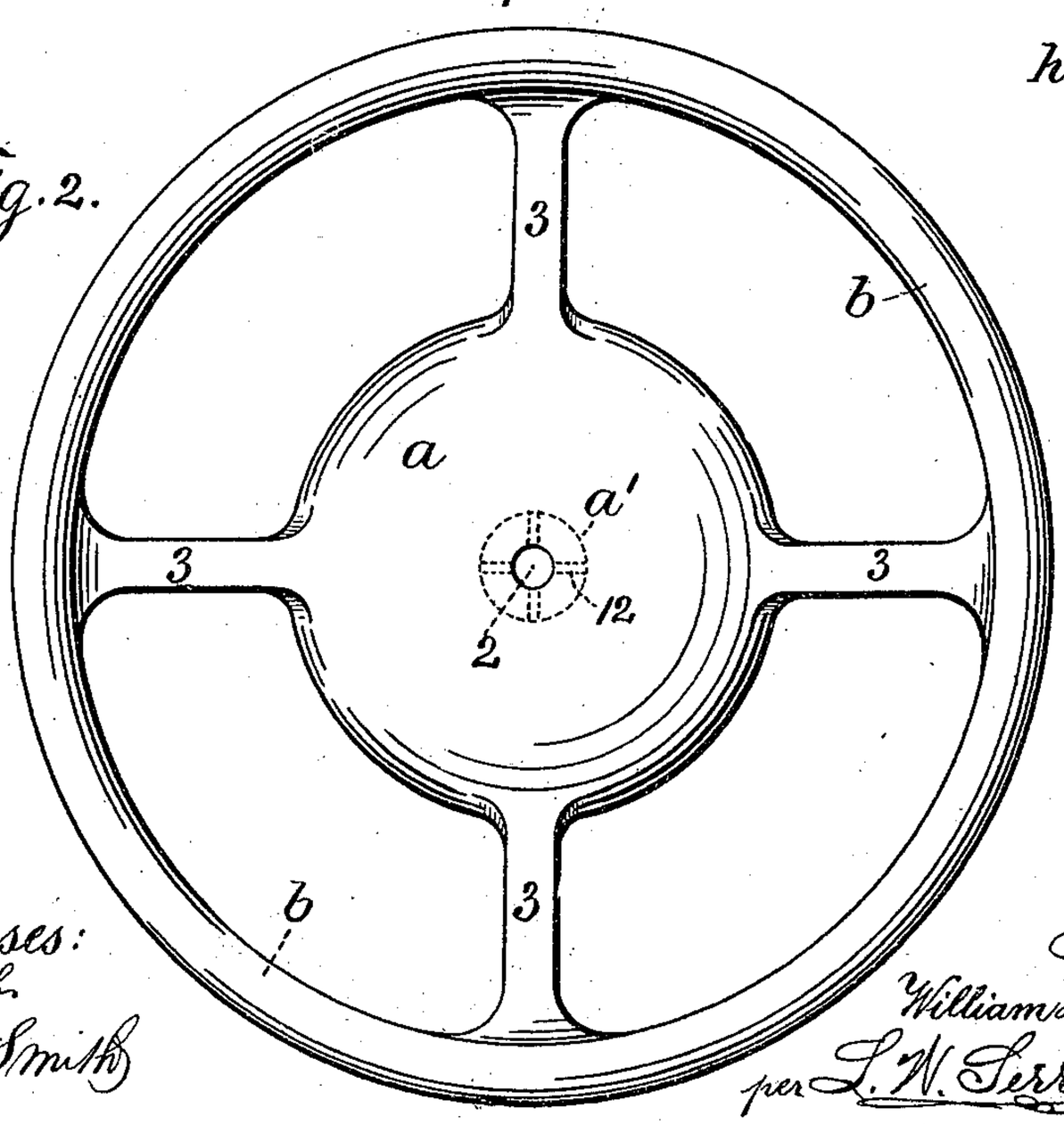


Fig. 2.



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UNITED STATES PATENT OFFICE.

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NOZZLE FOR DRINKING-FOUNTAINS.

SPECIFICATION forming part of Letters Patent No. 685,675, dated October 29, 1901.

Application filed March 23, 1901. Serial No. 52,482. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY DEWAR, a citizen of the United States, residing at the borough of Manhattan, in the city, county, and State of New York, have invented an Improvement in Nozzles for Drinking-Fountains, of which the following is a specification.

My invention relates to an improvement in nozzles for drinking-fountains. These nozzles are usually employed in connection with a basin for catching surplus water and are especially adapted for use in schools. Devices of this general character have heretofore been employed. In these devices, however, it has been possible for children to play with the supply of water by putting the finger over the end of the nozzle, and so reducing the supply and increasing the pressure, and thus forcing the water to greater distances, delivering the same upon one another and beyond the limits of the basin.

The object of my present invention is to improve the nozzles heretofore employed, to simplify the construction, and to lessen the liability, or, in other words, make it substantially impossible for children to thus play with the water.

In carrying out my invention I employ a head and connected sleeve, with a grip-ring and supporting-arms preferably made integral with the head. A tubular stem is also made integral with the head, which exteriorly is preferably conical and provided with an opening at the apex, which extends through the tubular stem, and a perforated cap is connected to the lower end of the tubular stem, and these parts move vertically together as a unit with pressure upon the grip-ring, which pressure moves a valve within the hollow standard to admit the water through the said cap and tubular stem and deliver the same from the opening in the head. In this way a vertically-movable stream of water of a height according to the pressure emerges from the opening in the head and which can be drank at the fountain. The sleeve connected to the head is made with vertical grooves or equivalent devices, and the tubular stem of the head is made with downwardly-inclined openings forming communicating passages between the opening in the tubular stem and the inside of the hollow conical head, and in the operation of the fountain little or no water passes out of these holes in the tubular stem because their inclination is against the direction of the movement of the water; but should a finger be placed over the opening in the apex of the head and a back pressure be established the water instead of emerging from the opening with greater force will flow back through the openings in the tubular stem into the conical head and away by the grooves in the sleeve and waste into the basin, so that no matter how much the size of the opening may be reduced by the finger the water will not flow therefrom with any greater force.

In the drawings, Figure 1 is a vertical section representing my improved nozzle. Fig. 2 is a plan of the same. Fig. 3 is a section at $x\ x$ of Fig. 1; Fig. 4, a section at $y\ y$ of Fig. 1, and Fig. 5 is a separate plan view of the perforated cap.

The head a is hollow, is preferably exteriorly conical, is provided with a tubular stem a', an opening 2 at the apex of the head with integral supporting upwardly-extending arms 3, and a grip-ring b, and in said tubular stem there are holes 12 at spaced-apart intervals and placed at downward inclinations, forming communicating passages between the interior of the head a and the opening in the tubular stem a', and I provide a sleeve c below the head and connected thereto by a screw-thread. This sleeve c surrounds the hollow standard d, and its inner face is provided with grooves 13, placed vertically and at spaced-apart intervals, the grooves forming communicating passages from the interior of the head and sleeve to the outside.

The hollow standard d is provided in its base with an interiorly-threaded opening 4, to which is preferably connected a supply-pipe for water, and a valve-stem 5 passes through the head above the opening 4 and is adapted, as shown in Fig. 1, to permit the water to pass into the hollow standard, or when given a partial turn to close off the en-

trance of water. A valve-seat *e* is connected by a screw-thread to an internal flange of the hollow standard *d*. This valve-seat is in the form of a ring. The valve proper comprises a stem *f* of X form in cross-section. This passes through the valve-seat *e*, with a head on the lower end, between which and the under surface of the valve-seat is a washer 6. Surrounding the stem *f* is a spring 7, above which is a washer 8, held in place by a pin 9, passing through the stem *f*. The spring raises the stem *f* and holds the washer 6 against the under side of the valve-seat *e* to close off the water, and when these parts are depressed passage-ways are formed for the entrance of water to the upper part of the standard through the channels of the X-stem *f*. (See Fig. 4.)

The sleeve *g*, of stepped form, screws into the upper part of the hollow standard *d* and surrounds the tubular stem *a'*, and within this sleeve and around the tubular stem *a'* is a packing 10 and a packing-ring 11, the adjustment of which packing-ring tightens the packing. In the lower part of the tubular stem *a'* is a perforated cap *h*, the under surface of which rests upon the upper part of the stem *f* and is supported thereby.

In the operation of the device as described pressure upon the grip-ring *b* acts through the head *a*, the tubular stem *a'*, and the cap *h* to force the stem *f* downward against the spring 7 to open up the passages between the lower and upper parts of the hollow standard, so that water passes from the lower part through the valve-seat *e* into the upper part, from the upper part through the openings in the cap *h* into the opening in the tubular stem, and emerges from the opening 2 at the apex of the head *a*, and the amount of water and the pressure thereof are regulated by the extent to which the head and parts connected therewith are depressed by means of the grip-ring, and in the use of the fountain the water from the stem is drunk directly by placing the face over the nozzle and the mouth in proximity to the stream of water. In this way no cup, glass, or other vessel is necessary for drinking purposes and there are no metal or other parts that might communicate any germs or other contamination.

The holes 12 in the tubular stem *a* and the grooves 13 in the sleeve *c* are employed particularly for preventing children playing with the fountain and by putting the finger over the opening 2 in the apex of the head reducing the opening, and so increasing the pressure and delivering the water at distances beyond the basin provided for catching the same. When this operation is attempted, the opening is reduced and a back pressure established, which causes the water in the tubular stem to flow back through the holes 12 within the head and waste through the grooves 13 into the basin. In this way no matter what may be the size to which the opening is reduced the pressure is not increased, and the flow of water from the opening 2 is also not increased in its ratio or speed.

I claim as my invention—

1. In a nozzle for fountains, the combination with a head, arms and a grip-ring by which the head is movable, of a tubular stem to the head having downwardly-inclined perforations forming communicating passages between the opening in the tubular stem and the interior of the head, and a sleeve connected to the head and forming a downward extension thereof and having grooves in the inner surface through which the water from the said downwardly-inclined holes wastes, substantially as specified.

2. A nozzle for drinking-fountains, comprising a hollow standard, means for connecting the same to the supply of water and for closing off the supply, a head, tubular stem and sleeve connected to the head and vertically movable upon said standard, a valve within the standard depressed by the movement of the head, a hand device for depressing the head, and openings for discharging water from the tubular stem when a back pressure is created, substantially as set forth.

3. A nozzle for drinking-fountains comprising a hollow standard, a connection thereto from a source of water-supply and a valve-stem for closing the same, a spring-actuated vertically-movable valve within the hollow standard for controlling the supply of water and pressure within the same, a hollow head exteriorly conical and provided with an opening at the apex, an integral tubular stem, a perforated cap upon the lower end of the stem, a sleeve connected to the head and surrounding the hollow standard, arms and a grip-ring integral with the head rising therefrom and surrounding the head, a sleeve within the head surrounding the tubular stem and a packing therein, and means for discharging the water through the head and sleeve connected thereto when a back pressure is established, substantially as specified.

4. A nozzle for drinking-fountains, comprising a hollow standard, a connection thereto from a source of water-supply and a valve-stem for closing the same, a spring-actuated vertically-movable valve within the hollow standard for controlling the supply of water and pressure within the same, a hollow head exteriorly conical and provided with an opening at the apex, an integral tubular stem, a perforated cap upon the lower end of the stem, a sleeve connected to the head and surrounding the hollow standard, arms and a grip-ring integral with the head rising therefrom and surrounding the head, a sleeve within the head surrounding the tubular stem and a packing therein, the tubular stem being made with downwardly-extending holes forming communicating passages between

the opening in the tubular stem and the interior of the head, and a sleeve with vertical grooves at spaced-apart intervals in the inner surface surrounding the hollow standard whereby when a back pressure of water is established at the opening in the head the water wastes through the openings in the tubular stem and the grooves in the sleeve, substantially as specified.

Signed by me this 20th day of March, 1901.

WILLIAM H. DEWAR.

Witnesses:

GEO. T. PINCKNEY,

BERTHA M. ALLEN.