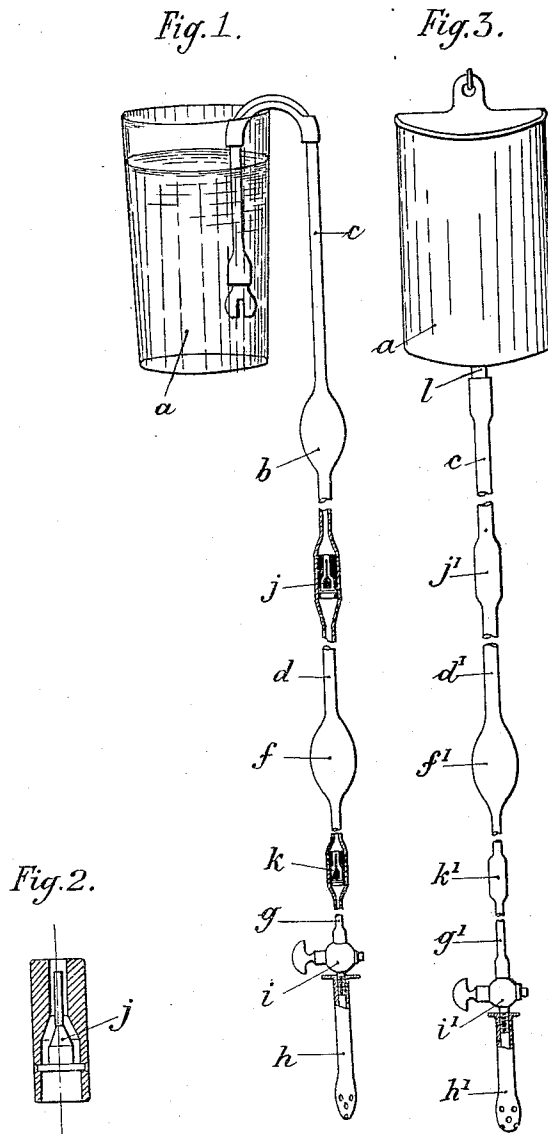


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 APPARATUS FOR NASAL DOUCHES, INJECTIONS, AND OTHER LIKE PURPOSES.
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1,215,475.



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UNITED STATES PATENT OFFICE.

WILLIAM GOULD BROKAW, OF PARIS, FRANCE.

APPARATUS FOR NASAL DOUCHES, INJECTIONS, AND OTHER LIKE PURPOSES.

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Specification of Letters Patent.

Patented Feb. 13, 1917.

Application filed October 9, 1916. Serial No. 124,702.

To all whom it may concern:

Be it known that I, WILLIAM GOULD BROKAW, a citizen of the United States, whose post-office address is 41 Boulevard Haussmann, Paris, France, have invented new and useful Improvements in Apparatus for Nasal Douches, Injections, and other like Purposes, of which the following is a specification.

There exists, in the trade, apparatus for administering nasal douches, wherein the water or the medicated preparation, contained in a vessel, is sucked up, by means of a bulb, into a siphonic tube, and is delivered through a tube, into the end of which is placed the nasal piece. When once the siphonic action has been started by the bulb, the water flows out in a regular and continuous jet until the vessel is empty.

Now this apparatus, although practical and convenient in usage, is limited as to its use, in view of the fact that it only delivers a regular and continuous flow. Unless the vessel be placed at a considerable height, so as to bring about a corresponding speed of flow, the pressure of the water is limited, and may, in some cases, for instance for ladies' intimate toilet purposes, not be sufficient.

Now the present invention consists of an arrangement of apparatus which, while producing the advantages of the nasal douche apparatus, makes it possible to obtain, if required, independently of a regular and continuous flow at low pressure, a momentary flow at a much higher pressure, at the will of the operator.

The invention consists essentially in applying, to the known system of apparatus, supplementary devices whereby it is enabled to produce jets of high or low pressure, at will.

Figure 1 shows, by way of an example, a first arrangement in which, *a* designates the vessel, *b* the siphon-starting bulb, *c* the siphonic tube and *d* the delivery tube connected to the bulb *b*. The said tube extends a suitable distance and is connected to a second bulb *f* which, in turn is connected to a second tube *g*, in the end of which is introduced a nasal piece, a cannula or any other like appliance, according to the purpose for which the apparatus is intended.

By way of an instance, the drawing shows an ordinary cannula *h* which may be inserted directly into the end of the said tube *g*.

But, if preferred, the said end may be fitted with a tap *i* upon which the cannula *h* or other piece may be fastened. In the tube *d* is fitted a check-valve *j* which prevents the liquid from returning from the second bulb *f* toward the vessel *a*. Again, in the tube *g* is fitted a check-valve *k* which also counteracts any possibility of the liquid returning from the cannula *h* to the bulb *f*. Fig. 2, on a larger scale, shows the check-valves *j* and *k* which may be of any appropriate type, such for instance as those used in the kind of rubber apparatus under consideration here and the bulk of which is very small.

The operation is as follows: The vessel *a* being full, the bulb *b* is operated on so as to start the siphonic action in the tube *c*. When once the siphonic action has been set up, the liquid flows through the bulb into the tube *d*, past the check-valve *j*, the bulb *f*, the check-valve *k*, the tube *g*, the tap *i* and the cannula *h*. The regular and continuous flow of the liquid may be stopped by means of the tap *i*.

If, instead of delivering a regular and continuous flow, it be desired to deliver a flow which at one time shall be regular, and at another time accelerated or simply accelerated, it will be sufficient, the tap *i* being open, to operate the second bulb *f*, so that the liquid contained therein will be forced, in a momentarily powerful jet, through the tube *g* and the cannula *h*, the valve *j* checking the return of the liquid toward the vessel *a* when the bulb is being compressed, while on the other hand, the valve *k* prevents during suction, the water which has already passed the said bulb from returning toward the latter.

It is desirable that the tube *c*, Fig. 1, as well also as the tube *d* which is an extension thereof, should be of such a cross sectional area that the liquid may flow therein at a relatively high speed, while on the contrary the cross sectional area of the tube *g* may just be sufficient for enabling the liquid therein to flow at the usual desired speed. The reason why the cross sectional areas of the tubes *c* and *d* should exceed that of the tube *g* is that as the bulb *f* enables the liquid to be expelled at a speed exceeding that of its arrival into the tubes *c*, *d*, it is necessary that this liquid should be fed to the bulb *f* at a sufficient speed to properly feed and fill the said bulb as fast as it is being emptied under the action of the hand.

By way of a modification, the apparatus

may be arranged in the manner shown in Fig. 3, wherein the number of the elements of the installation is smaller than that shown in Fig. 1, so that a simplification and an economy are obtained, while yet producing the same advantages as those resulting from the arrangement shown in the last named figure.

In this modification, the vessel *a* is formed with a nozzle *l* to which is connected the tube *c* of the first arrangement. The other elements remain the same, viz: the tube *c*, the check-valve *j'*, the tube *d'*, the bulb *f'* with its tube *g'*, check-valve *h'*, tap *i'* and cannula *k'*.

It will thus be seen that, according to this modified form of the invention, the apparatus has no siphon, nor a special bulb for starting the siphon, but that nevertheless the apparatus may, exactly as in the preceding case, deliver either a regular and uniform jet, or a momentarily accelerated jet or both combined, at will.

I claim:

1. The combination, in an apparatus of the kind herein specified, of a siphonic tube, a bulb connected thereto for starting the siphonic action, a delivery tube leading from the said bulb, a check-valve in said delivery tube, a second bulb connected to the said delivery tube, a delivery tube leading from the said second bulb to a nasal piece, cannula or other similar nozzle, for the purpose set forth.

2. The combination, in an apparatus of the kind herein specified, of a siphonic tube, a bulb connected thereto for starting the siphonic action, a delivery tube leading from the said bulb, a check-valve in said tube, a second bulb connected to said tube, a delivery tube leading from the said second bulb, a check-valve in said tube and a nasal piece, cannula or other similar nozzle, for the purpose set forth.

3. The combination, in an apparatus of the kind herein specified, of a siphonic tube, a bulb connected thereto for starting the siphonic action, a tube connected to said

bulb, a check-valve in said tube, a second bulb connected to the said delivery tube, a delivery tube connected to the said second bulb, a nasal piece, cannula or other similar nozzle and a tap, for the purpose set forth.

4. The combination, in an apparatus of the kind herein specified, of a siphonic tube, a bulb connected thereto for starting the siphonic action, a delivery tube connected to said bulb, a check-valve in said tube, a second bulb connected to said delivery tube, a delivery tube connected to said second bulb, a check-valve in said tube, a nasal piece, cannula or other similar nozzle and a tap, for the purpose set forth.

5. The combination in an apparatus of the kind herein specified, of a siphonic tube, a bulb connected thereto for starting the siphonic action, a delivery tube leading from the said bulb, a check-valve in said tube, a second bulb connected to said tube, a delivery tube leading from the said second bulb of substantially smaller cross-section than the delivery tube situated above said second bulb, a check valve in the last-mentioned tube, and a nasal piece, cannula, or other similar nozzle, for the purpose set forth.

6. The combination, in an apparatus of the kind herein specified, of a siphonic tube, a bulb connected thereto for starting the siphonic action, a delivery tube connected to said bulb, a check valve in said delivery tube, a second bulb connected to the said delivery tube, a delivery tube connected to the said second bulb of substantially smaller cross-section than the first-named delivery tube, and a nasal piece, cannula, or other similar nozzle for the purpose set forth.

In witness whereof I have hereunto set my hand this sixteenth day of September, 1916, in presence of two subscribing witnesses.

WILLIAM GOULD BROKAW.

Witnesses:

R. H. BRANDON,
TRACY LAY.

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