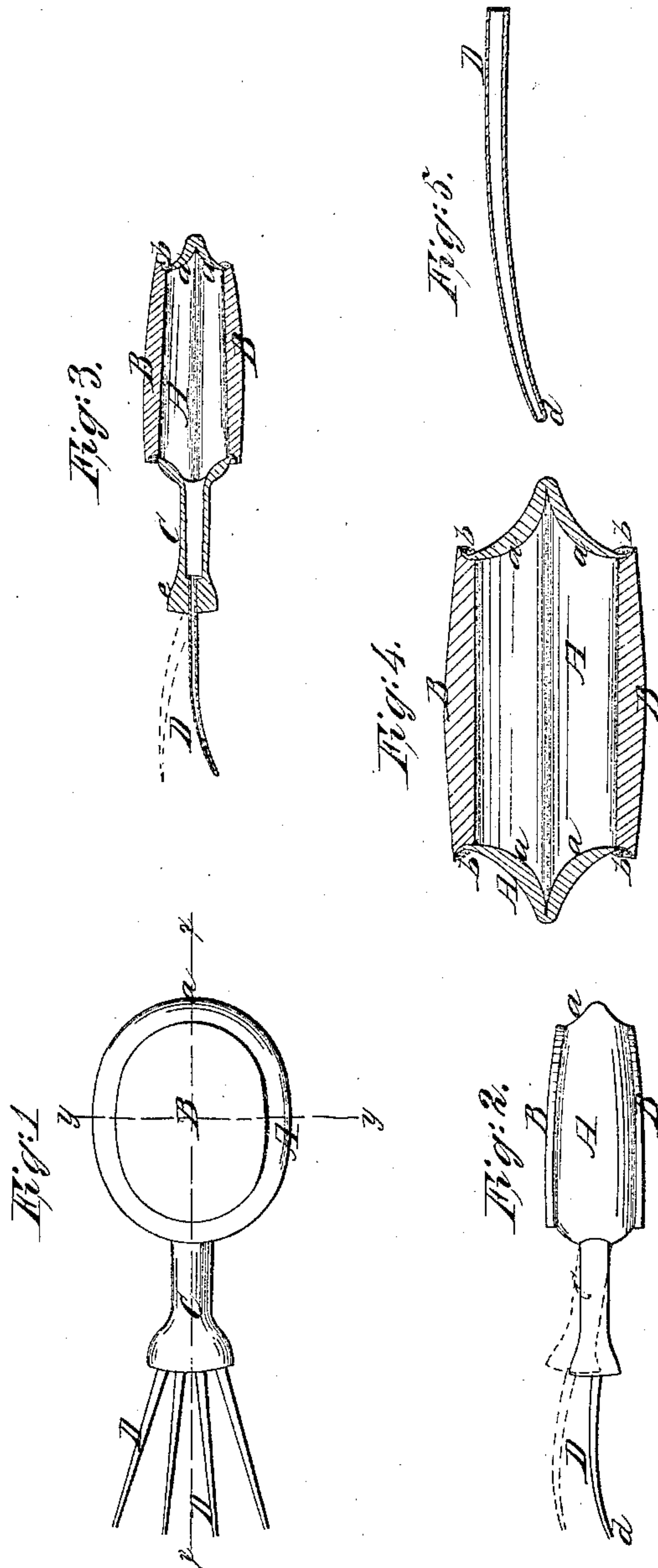


*A. A. Smith,*

*Syringe.*

*N<sup>o</sup> 44,843.*

*Patented Oct. 25, 1864.*



*Witnesses:*  
*Jay Bryant,*  
*R. F. Osgood.*

*Inventor:*  
*Austin A. Smith*

# UNITED STATES PATENT OFFICE.

AUSTIN A. SMITH, OF SENECA FALLS, NEW YORK.

## IMPROVEMENT IN INJECTORS FOR THE HAIR.

Specification forming part of Letters Patent No. 41,843, dated October 25, 1864.

*To all whom it may concern:*

Be it known that I, AUSTIN A. SMITH, of Seneca Falls, in the county of Seneca and State of New York, have invented certain new and useful Improvements in Injectors for the Hair; and I hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan view of my improved instrument. Fig. 2 is a side elevation. Fig. 3 is a longitudinal vertical section on the line *x x*. Fig. 4 is an enlarged section on the line *y y*. Fig. 5 is an enlarged section of one of the distributing-tubes D.

Like letters of reference indicate corresponding parts in all the figures.

My improved injector is designed for applying water, oil, or other fluid to the hair and scalp in a more convenient and effectual manner than has heretofore been done.

It consists of a vacuum-bulb for receiving and expelling the fluid, provided with a series of distributing-tubes, D D, diverging from a flexible neck, C, or from the elastic side of the bulb itself. The bulb is constructed of an annular V-shaped or convex rim, A, (shown most clearly in the sections, Figs. 3 and 4,) of india-rubber or other elastic material, with rigid sides or plates B B, which may be made of wood, ivory, or other non-elastic substance, connected with the rubber rim by a joint that is fluid-tight.

A convenient mode of forming the joint is by grooving the edges of the plates B and stretching the edges of the rubber rim A (which should be of a little smaller diameter) over these grooves, when the contraction of the rubber will keep the joint tight, and separation may be prevented by winding with thread or wire at *b*. Any equivalent method of fastening may be used.

The form of the bulb may be round or oval, the latter being preferable for convenience.

Connected with the rim A, or formed, as it is made, of the same material, is a neck, C, in the head of which are affixed the distributing-tubes D D. These tubes being individually distinct, and only held together by the india-rubber connection, will yield or bend backward from their position by pressure, either singly or together as shown by the red lines

of Fig. 2. This allows them to conform to the shape of the head in any position in which the instrument is held when used, and remain in their normal position at other times. The tubes D may be connected directly with the rim A, with the same or nearly as good an effect.

The V-shaped or convex form of the rim A causes it to act on its contents when the sides are compressed, by closing the angles of the inner rounded or swelled surfaces, *a a*, together, and consequently gradually shutting the water from the angles, forcing the contents into a smaller area between the two plates B B, and more effectually expel the fluid than can be done where the bulb is of india-rubber entirely, when it is difficult to compress it equally, the center collapsing, while the outside is filled with and retains the fluid. The red lines in Fig. 4 show the effect of compressing the rigid sides of the bulb by closing together the angle of the rim. The combining of the rigid side plates, B, with the elastic rim A also renders it more convenient to handle and work than when the whole is elastic, for these press equally and unyieldingly toward each other without any central collapse, and thus force all the fluid out without requiring the bulb to be compressed by the hands over its whole surface.

The tubes D are made hollow, but closed at the ends, and provided with an ejection-orifice, *d*, near the end and on the inner or concave side, they being slightly curved. The ends are closed and made perfectly smooth to prevent catching and pulling the hair or scratching the skin, and to prevent the orifices becoming filled up, as they soon would be, with dandruff, and the passage of the fluid prevented. By being on the sides the holes may be elongated to give sufficient size without increasing that of the tubes, and they discharge the fluid directly down upon the skin, so that by pressing firmly the contents may, if required, be applied to the skin without coming in contact with the hair, which is sometimes of importance in treating diseases of the scalp with preparations that would injure the hair.

Another important advantage is obtained from the side orifices of the distributors—viz., that where oil or other preparation is applied to the hair it cannot be discharged out-



wardly or thrown beyond the hair to fall on the garments or person, as would frequently happen if the apertures were in the ends of the tubes, in consequence of their being passed through so far that the hair did not intercept the fluid.

The manner of using the injector is too obvious to require description.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Forming the elastic rim A with its sides *a a*, so situated and formed that compressing the sides will gradually close the vacuum-chamber from the angle of the periphery inward toward the center, so as to expel all the fluid, substantially as set forth.

2. Constructing the vacuum-bulb with rigid sides or plates B B, in combination with the elastic ring A, substantially in the manner and for the purposes described.

3. In combination with the flexible vacuum-bulb A B, the series of distributing-tubes D,

so constructed as to inject a fluid beneath the hair in small jets, substantially as set forth.

4. The hollow teeth or tubes D, formed with the eduction-orifice *d* on the under concave side thereof, to prevent the same from becoming obstructed, and to direct the fluid downward upon the scalp, and to prevent scratching or tearing, substantially as set forth.

5. Making the neck or base to which the tubes D are attached flexible, so as to render them capable of bending separately or together to adjust themselves to the form of the head in whatever position they may be applied, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

AUSTIN A. SMITH.

Witnesses:

A. M. LESTER,  
R. FRANK SMITH.