

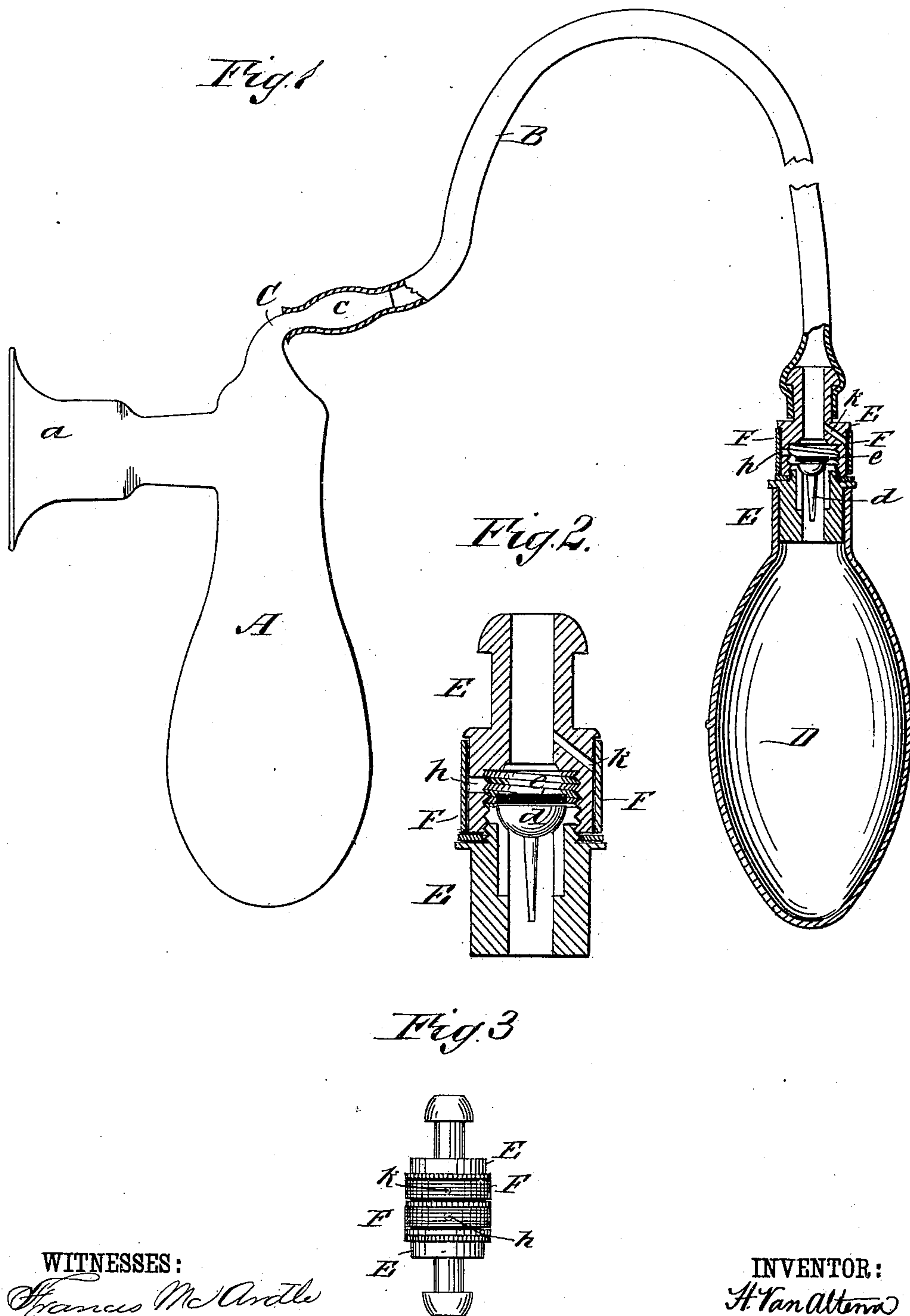
(No Model.)

H. VAN ALTENA & V. C. VANTWOUD.

BREAST PUMP.

No. 356,266.

Patented Jan. 18, 1887.



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# UNITED STATES PATENT OFFICE.

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## BREAST-PUMP.

SPECIFICATION forming part of Letters Patent No. 356,266, dated January 18, 1887.

Application filed November 20, 1886. Serial No. 219,532. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY VAN ALTENA and VICTOR C. VANTWOUD, both of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Breast-Pumps, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in breast-pumps, and has for its object to provide a convenient connection with the mouth-piece and vacuum-bulb of the exhaust-bulb and its attached flexible tube, and also to provide external means of destroying the vacuum of the pump, thereby gently releasing the same from the flesh.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation, partly sectional, of our pump; and Fig. 2, a longitudinal vertical section through the coupling-piece thereof. Fig. 3 is a plan view of a modified form of coupling, illustrating the application of two flexible valvular covers.

In the application of our invention the ordinary form of vacuum-bulb, A, is employed, having the usual mouth-piece, *a*. The said vacuum-bulb, however, instead of being provided, as heretofore, with a vertical integral neck for connection with the flexible tube B, is constructed with an integral neck, C, having a bulge, *c*, formed therein, adapted to extend, preferably, in a curve line in an opposite direction to and in substantially the same horizontal plane with the mouth-piece *a*. If found desirable, however, the said neck C may have an inclination in other directions. By means of the aforesaid curved neck the flexible tube B, which is slid over the bulge *c* to an engagement therewith at one end, is prevented from kinking and consequent leakage.

An air-bulb, D, is connected with the flexible tube B, and through the said tube with the

vacuum-bulb A, by a divided coupling, E, of ordinary construction, containing the usual puppet-valve, *d*, and packing *e*. About centrally within the flanged portion, on one side of the said coupling, we cause an air-vent, *h*, to be made, having communication with the passage leading to the air-bulb D, while upon the opposite side we form another, and preferably smaller, air-vent, *k*, having communication with the flexible tube B, and incase the said vents *h* and *k* with an annular valvular covering, F, preferably of rubber. The object of this construction is, that as the air-bulb D is compressed the air will, as the valve ascends, find an exit through the vent *h* beneath the valvular covering F, while as the bulb D is allowed to expand, creating thereby a vacuum in the glass bulb A, and the valve finds its seat, a vacuum will also be created in the vent *h*, the suction created thereby tending to bind the valvular covering F tightly over both the vents *h* and *k* and prevent any ingress of air. When operation with the pump has been completed, acute pain is often attendant upon withdrawing the mouth-piece from connection with the tender skin. To obviate this is the prime object of our invention, and is readily accomplished by simply raising the valvular covering F with the thumb from over the vent *k*, which is preferably situated as near the outer end of the said covering as possible, whereupon air is admitted through the said vent and the vacuum in the bulb A destroyed, permitting the mouth-piece *a* to gently disengage itself.

We generally designate the situation of the vent *k*, which we preferably make in line with the thumb when the pump is positioned for use, by a cross or other symbol stamped opposite said vent in color on the tube B.

In Fig. 3 we illustrate a coupling having two annular recesses formed upon its face. In this construction the vents may be made in the same plane and upon the same side, as independent valvular covering may be employed.

We are aware that breast-pumps have been made with an ingress-opening in the vacuum-bulb and an egress-opening in the coupling,



having attached thereto an externally-accessible releasing-valve, and we do not claim such construction.

Having thus described our invention, what  
5 we claim as new, and desire to secure by Letters Patent, is—

In a breast-pump, the combination, with the valve-coupling having an ingress and egress vent formed therein, of a flexible annular valv-

ular covering adapted to encompass said vents, so substantially as shown and described, and for the purpose herein set forth.

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Witnesses:

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