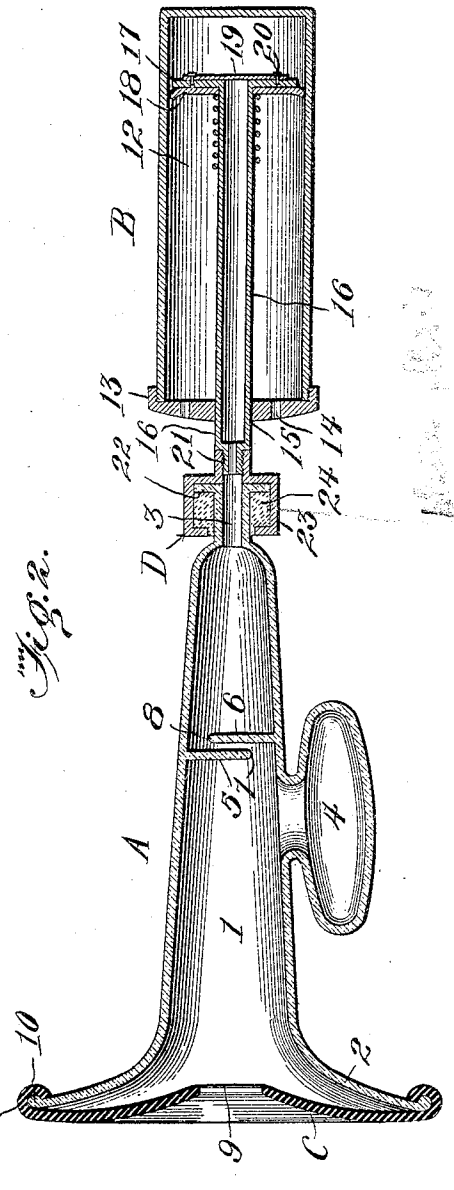
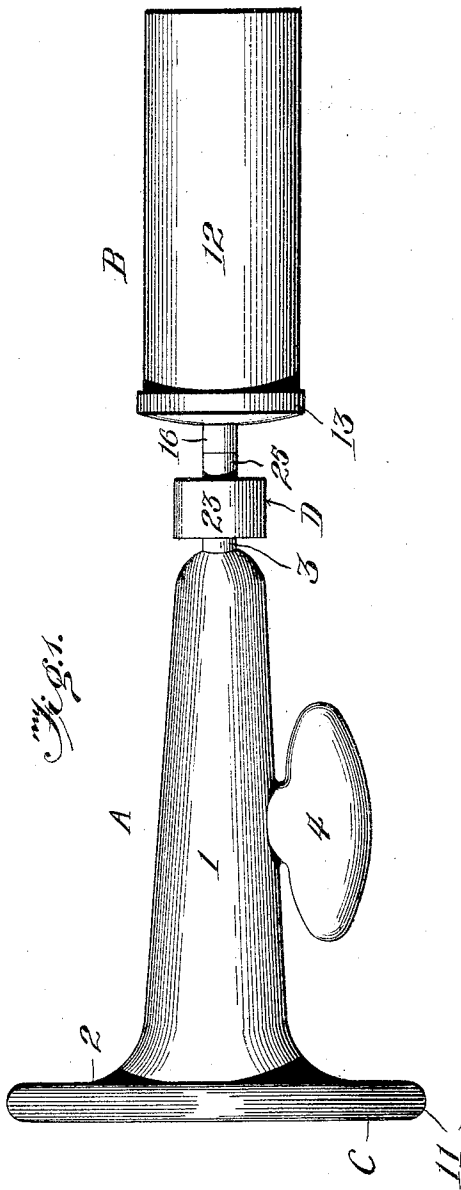


T. W. HOWELL.
BREAST PUMPING MACHINE.
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Witnesses:

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BREAST-PUMPING MACHINE.

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To all whom it may concern:

Be it known that I, TRUMAN W. HOWELL, a citizen of the United States, residing at Mabton, in the county of Yakima and State of Washington, have invented certain new and useful Improvements in Breast-Pumping Machines, of which the following is a specification.

This invention relates to a breast evacuating apparatus of that type employing a plunger pump connected with the breast piece.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be comparatively easy and inexpensive to manufacture, easily manipulated, and reliable and efficient in use.

A further object is the employment of means for preventing milk from entering the pump and souring and thus insure a permanent sanitary condition of the device.

Another object is to provide a breast pump capable of producing a great suction, possessing good wearing qualities and durability, and designed to be readily taken apart for cleaning.

With these objects in view, and others, as will appear as the description appears, the invention comprises the various novel features of construction which will be more fully described hereinafter and pointed out with particularity in the claims appended hereto.

In the accompanying drawing, illustrating one of the embodiments of the invention, Figure 1 is a side elevation of the apparatus, Fig. 2 is a vertical longitudinal section thereof.

Similar reference characters are employed to designate corresponding parts.

Referring to the drawing, A designates the breast piece of the device and B the pump. The breast piece is preferably, although not necessarily, made of glass and is of trumpet shape, consisting of a hollow body 1, a flaring mouth 2 at one end and a neck 3 at the opposite end. Depending from the bottom of the body 1 is a milk receptacle 4 into which the milk is collected. Arranged within the body 1 at a point between the receptacle 4 and neck 3 are molded overlapping depending and uprising walls 5 and 6 extending transversely and slightly spaced apart to permit a free passage of air between them. The bottom and top edges 7 and 8 of the walls or partitions 5 and 6, respectively, are spaced

from the internal surface of the body sufficiently to enable a suction to be produced through the body. These walls or partitions constitute means for preventing milk from being sucked into the pump and becoming sour therein, and by reason of this the device can be more readily kept sanitary.

Applied over the mouth 2 of the breast piece A is a nipple guard C preferably of yielding material, such, for instance, as rubber and in the form of a circular member dished slightly into the mouth and having an opening 9 to receive the nipple, the guard serving to prevent too much of the breast from being drawn into the breast piece A and the orifices of the breast nipple closed. The guard also stops the milk from flowing out upon the user's clothes when removing the pump. The mouth of the breast piece has a marginal bead 10 and the periphery of the guard is formed with hollow rim 11 curved backwardly so as to be engaged over the bead of the mouth, it being easy to remove the guard when it is desired to cleanse the breast piece.

The pump B consists of a cylinder closed at one end and provided with a cap having threaded engagement with the opposite end, the cap having air outlet ports and an opening 15 for the piston rod 16. The piston rod is hollow to form an air conduit and the piston 17 carries a leather or other sucker 18 having its edge yieldingly bearing on the internal surface of the cylinder. On the side of the piston opposite from the sucker is a flat leather or other valve 19 that is held in place by fastenings 20 and this valve covers one end of the bore of the piston rod. The outer end of the rod is reduced and exteriorly threaded at 21 for connection with the coupling device D where by the pump is detachably united with the breast piece so that cleaning of the latter can be easily effected.

The coupling device D rigidly connects the two parts together and is designed to do away with the usual piece of rubber tubing which sooner or later wears out and rots. Any approved coupling which will permit of quick and easy attaching and detaching of the pump and breast piece may be employed. In the present instance, the neck 3 has a transversely extending circular flange 22 which is housed in a hollow cylindrical coupler 23 secured on the neck by plaster of paris or cement 24. The coupler has a hol-

low internal threaded boss 25 disposed in line with the neck and adapted to receive the outer threaded end of the piston rod of the pump. This coupling device affords a convenient means for gripping the device in one hand while the other hand is working the cylinder of the pump back and forth.

In practice, the device is held with the rubber guard C against the breast and the nipple inserted in the hole of the guard. While holding the device by one hand in this manner, the cylinder of the pump is worked toward and away from the breast by an easy and comfortable motion. As the cylinder is moved outwardly a suction is produced which draws milk into the breast piece A and there collects in the receptacle 4. Should the suction become strong enough to draw the milk backwardly beyond the receptacle it will be prevented from entering the pump by reason of the dam forming walls 5 and 6. During the out-stroke the air on the rear side of the piston will escape between the sucker 18 and cylinder and the open ports 14 afford a free passage of air into and out of the cylinder during the working thereof. By a continuance of the operation of the pump the milk can be effectually withdrawn and as a power suction can be produced the most difficult case can be relieved.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodi-

ment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims.

Having thus fully described the invention, what is claimed as new is:

1. In a device of the class described, the combination of a hollow body having a mouth at one end, a depending vessel on the body and communicating therewith, a yielding guard on the mouth dished inwardly and having an opening and serving to prevent liquid from flowing out of the body, transverse overlapping walls in the body at the rear of the vessel to dam back liquid while permitting the free flow of air, and a pump attached to the body at a point behind the walls.

2. In a device of the class described, the combination of breast piece including a vessel and having a neck provided with an outstanding flange, a pump including a piston rod, a coupling piece rigidly mounted on the neck, and a threaded connection between the coupling piece and rod for rigidly and detachably connecting the pump and breast piece together.

3. In a breast pump, a breast member comprising a single piece structure and including a hollow body, a mouth at one end, a depending vessel, transversely extending walls within the body at the rear of the vessel, and a neck for connection with a pump.

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