

(No Model.)

H. HERRMANN.
NURSING BOTTLE.

No. 527,284.

Patented Oct. 9, 1894.

Fig. 4.

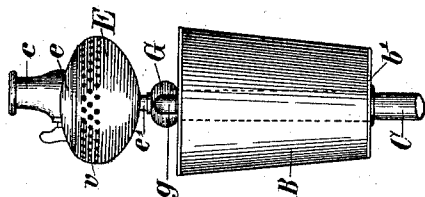


Fig. 6.

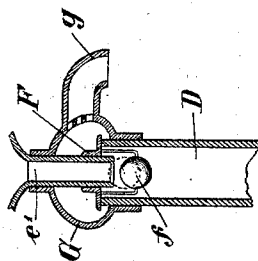


Fig. 3.

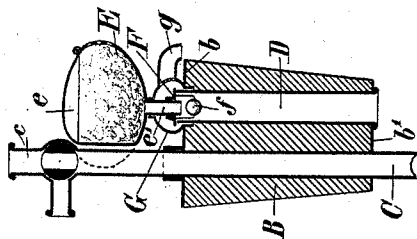


Fig. 5.

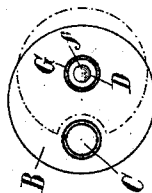


Fig. 2.

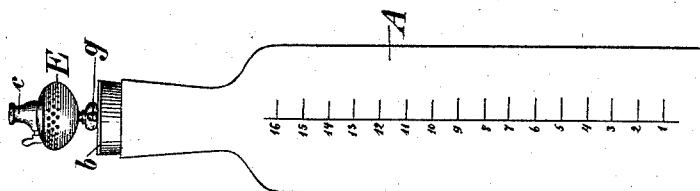
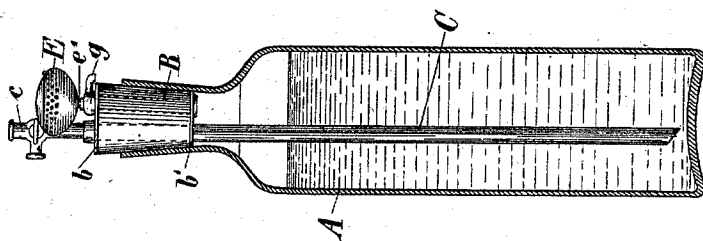


Fig. 1.



Witnesses:
M. C. Massie.
A. J. Birney.

Inventor:
Heinrich Herrmann
by "Max Fergü"
his attorney.

UNITED STATES PATENT OFFICE.

HEINRICH HERRMANN, OF LAUFFEN, GERMANY.

NURSING-BOTTLE.

SPECIFICATION forming part of Letters Patent No. 527,284, dated October 9, 1894.

Application filed May 17, 1894. Serial No. 511,604. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH HERRMANN, surgeon, of Lauffen-on-the-Neckar, in Würtemberg, Germany, have invented a new and useful Improvement in Nursing-Bottles, (for which I have obtained patent in no country,) of which the following is a specification.

This invention relates to sterilizing nursing bottles for infants, and its object is particularly to prevent access, to the interior of the bottle, of air containing germs.

The invention consists in the features, details and combination of parts which will first be described in connection with the accompanying drawings and then particularly pointed out in the claims.

In the accompanying drawings—Figure 1 represents a vertical section, and Fig. 2 an elevation of a sterilizing nursing bottle embodying my invention, while Figs. 3 to 6 represent, on an enlarged scale, the stopper, and the various devices arranged on the same, for retaining the liquid contained in the bottle in its sterilized condition and for purifying the air entering the bottle.

The nursing bottle, A, may be made of the form hitherto employed or any other desired form, with or without a scale for indicating the contents. The stopper, B, is preferably made of india-rubber. A feeding tube, C, extending to the bottom of the bottle and provided with a stop-cock, *c*, for closing off the same, passes through the stopper and fits into the same air-tight. The cock, *c*, is provided with one or more tubes or orifices to one of which the suction tube is secured. A vent tube, D, passing only through the stopper, B, communicates at its outer end, and through the medium of a hollow connecting piece, F, with a small receptacle, E, filled with antiseptic wool, the said receptacle being provided with a lid, *e*, and having a series of small openings, *v*, in its upper portion. Through these openings, the air passes into the receptacle when the lid is closed, and is compelled to pass through the antiseptic wool therein, before entering the nursing bottle. A light plate, F, acting in the manner of a valve, and carrying a light ball or sphere, *f*, connected to the same by means of thin wires, is arranged in the hollow middle portion, G, so as to rest upon the tube, D, to close the same at the top and to

slide on the outlet tube, *e'*, of the receptacle, E. This arrangement of the plate, F, with the ball, *f*, is for the purpose of closing the mouth of the outlet tube, by causing the vapors generated in boiling to raise the plate, F, and hence to press the ball, *f*, against the said orifice. The vapors generated are hence prevented from entering the receptacle, E, and injuring the antiseptic wool, and forced to make their exit by way of the middle portion, G, and the exhaust pipe, *g*.

The liquid is sterilized by immersing the nursing bottle, enveloped in a wire fabric for the purpose, into cold water and then boiling the same for from one-fourth to one-half an hour. As soon as the boiling, (sterilizing,) of the liquid is completed, the plate, F, automatically closes and the ball, *f*, drops into its normal position, so that the lower orifice of the outlet pipe, *e'*, is opened, and air may enter into the nursing bottle through the receptacle, E.

In using the nursing bottle, the suction tube is first put into place, and the cock, *c*, is then opened, the said cock, if desired, serving to regulate the rate of flow of the liquid, by opening the same more or less.

Inasmuch as the plate, F, closes automatically after sterilization, the air drawn into the bottle to replace the liquid sucked from the same can enter the same only by way of the openings, *v*, of the receptacle, E, filled with antiseptic wool. The air is thus purified of dust and germs, so that no contaminated, but only perfectly antiseptic, air can come into contact with the nourishing liquid while the bottle is in use.

Compared with all other apparatuses of this kind, the bottle constructed by me serves to make the artificial nourishment of infants approach the nearest to that by the mother.

Aside from the advantages of a complete sterilization and the introduction of aseptic air into the bottle, my new nursing-bottle possesses the advantage that the amount of liquid consumed is constantly uniform and may be regulated to conform to the capacity of the child. In the apparatus heretofore employed, on the contrary, the child could suck only with considerable exertion in consequence of the vacuum formed in sucking, or, after pausing to allow the air to fill the

vacuum, the liquid would be forced out in an excessive quantity on again using the bottle, so that it frequently would be forced through the mouth and nostrils of the child. I do not deem it necessary to discuss the injurious effects, especially in the case of weak children, due to such defective nursing bottles as well as the employment of imperfectly sterilized liquids, inasmuch as they are sufficiently familiar to every physician. My nursing-bottle, moreover, possesses the advantage of economy, in view of the fact that any unconsumed residue left over in the bottle is maintained in a sterilized condition by closing cock, *c*, and thus only permitting access of air free from germs. This remainder may be used at any time without danger, by simply rewarming.

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

1. In a nursing bottle, the combination, with a stopper, a feeding tube extending into the bottle, and a vent tube extending through the stopper, of a receptacle for containing antiseptic material, and a valve device arranged to shut off communication between the receptacle and the vent tube, and open communication between the vent tube and outside air, substantially as set forth.

2. In a nursing-bottle, a stopper provided with a feeding tube extending below the stopper and provided with a stop cock, in combination with a vent tube extending the length of the stopper, a receptacle for antiseptic material communicating with the vent tube, a middle chamber interposed between the vent tube and the receptacle and opening into the outer air, a gravity valve for closing the up-

per end of the vent tube and a second gravity valve connected to the first gravity valve, and so arranged as to close the lower orifice of the receptacle when the first gravity valve is raised sufficiently, substantially as set forth.

3. For the purpose of completely sterilizing, and maintaining sterilized, the liquid food in a nursing bottle, a stopper of rubber, cork, or the like, provided with a feeding tube, *C*, extending to the bottom of the bottle and provided with a cock, *c*, in combination with a vent tube, *D*, provided with a vapor-escape valve, *F*, and a ball-valve, *f*, and a receptacle, *E*, for antiseptic wool or the like, substantially as and for the purposes set forth.

4. In a nursing-bottle, a stopper provided with a tube extending substantially down to the bottom of the nursing-bottle, and provided with a stop-cock at its outer end, in combination with a vent tube passing through the stopper, a receptacle for antiseptic material, perforated at its top, an intermediate chamber provided with an escape orifice for vapors, an outer pipe extending from the bottom of the receptacle into the intermediate chamber, and a plate adapted to slide on the outlet pipe and closing the upper end of the vent tube, and a ball-valve carried by the same for closing the lower end of the outlet pipe by the pressure of the vapor in the bottle, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HEINRICH HERRMANN.

Witnesses:

AUGUST B. DRAUTZ,
KARL HUBER.