

Specification of William Robert Lake : feeding bottles.

Contributors

Lake, William Robert.

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A.D. 1875, 24th MAY. N° 1899.

S P E C I F I C A T I O N

OF

WILLIAM ROBERT LAKE.

FEEDING BOTTLES.

LONDON:

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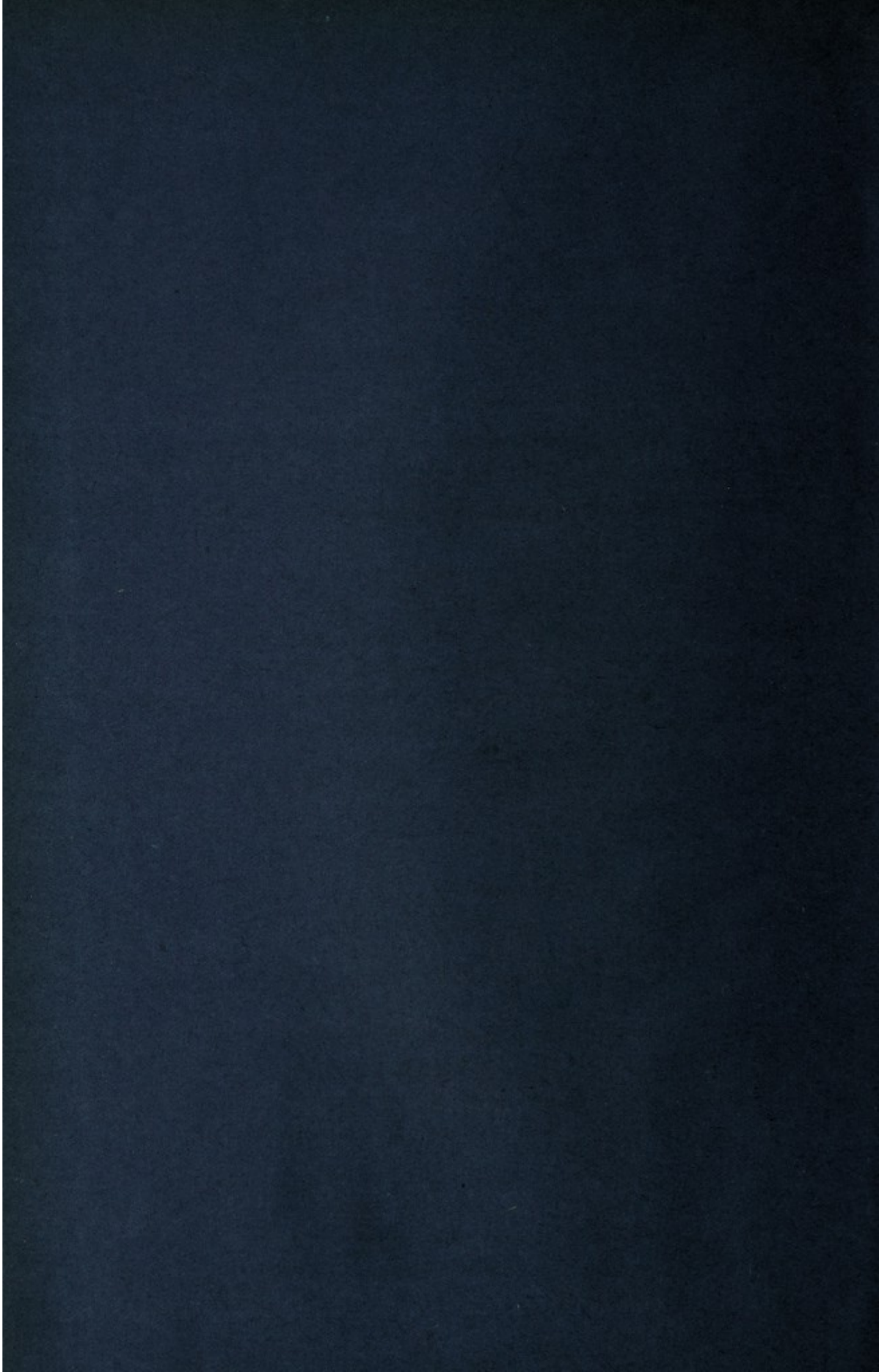
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A.D. 1875, 24th MAY. N° 1899.

Feeding Bottles.

LETTERS PATENT to William Robert Lake, of the Firm of Haseltine, Lake, & Co., Patent Agents, Southampton Buildings, London, for the Invention of "**IMPROVEMENTS IN FEEDING BOTTLES.**"—A communication from abroad by Henry Monchovaut, of Paris, France.

Sealed the 9th November 1875, and dated the 24th May 1875.

PROVISIONAL SPECIFICATION left by the said William Robert Lake at the Office of the Commissioners of Patents, with his Petition, on the 24th May 1875.

I, WILLIAM ROBERT LAKE, of the Firm of Haseltine, Lake, & Co.,
5 Patent Agents, Southampton Buildings, London, do hereby declare the nature of the said Invention for "**IMPROVEMENTS IN FEEDING BOTTLES,**" a communication, to be as follows:—

This Invention relates to a feeding bottle, which is provided with valves and marked with divisions of equal capacity, and which is com-
10 posed of,—

First. A glass bottle.

Second. A stopper which closes the bottle.

Third. A suction tube passed through the said stopper,

Lake's Improvements in Feeding Bottles.

I have shewn one of these feeding bottles in the accompanying Drawing, in which,—

Figure 1 is a front view of the said feeding bottle.

Figure 2 is a view of the divided face opposite to that in Figure 1, the tube and stopper being in section. 5

Figure 3 is an exterior side view, and Figure 4 a section of the said bottle.

Figures 5, 6, 7, 8, 9, shew details of the same.

Like letters indicate the same part throughout the Drawing.

The bottle *a* is of an elegant form, as shewn in the Drawing. It has 10 on one face divisions representing convenient quantities. The stopper *e* is a cork covered by a capsule *f* of wood or porcelain. It is perforated with two holes, one serving for the passage of the suction tube, the other being furnished with a small tube *g* of pewter or other suitable material closed by a valve *h*, which permits the air to enter easily, and prevents 15 the escape of the liquid if the feeding bottle should be upset. The aforesaid valve is composed of a caoutchouc disc *h* traversed by a thread *n* (Figure 5), also of caoutchouc, which forms a spring and keeps the valve to its seat at one extremity of the tube *g*. The thread *n* or 20 tail of the valve passes through the said tube, and is inserted in a small slit or notch *r*, Figure 5, made at the other extremity of the said tube. It has one turn given it, and is brought into the same slit or into another slit. This slit is smaller than the diameter of the thread, so that the latter will be fastened therein, but will slip when pulled by the end. This very simple arrangement permits of taking out, cleaning, 25 replacing, and regulating the valve with facility, rapidity, and exactness.

The suction tube is composed of the following parts :—

First. A small glass tube *i* immersed in the liquid, and furnished at its lower part with a small caoutchouc ferrule *j*, forming a cushion to 30 soften the concussion between the said tube and the interior of the bottle *a*.

Second. To the extremity of this tube is tightly fitted a flexible india-rubber tube *k*, which passes through the stopper, and is also tightly fitted therein to prevent the escape of the liquid in case the feeding bottle 35 should be upset.

Lake's Improvements in Feeding Bottles.

Third. To the extremity of this india-rubber tube is tightly fitted a small union joint *l*, Figure 6, of pewter or other suitable material, containing the retaining valve. This union is perforated throughout its length. One end is properly formed to receive the valve, and the other
5 is split to retain the caoutchouc spring *n*.

Fourth. This second valve *m*, Figure 2, called the retaining valve, is similar in respect of its form and setting to the first valve above described. I will here again remark that this method of attachment permits the easy regulation of the tension of the spring *n* by pulling its
10 end and causing the thread to slip in the slit till the valve comes to its seat, and it will lift with the weakest effort of suction.

Fifth, and finally. A teat *p*, Figure 8, of caoutchouc is tightly fitted upon the extremity of the union at the end containing the valve. This teat is furnished with a disc *o* of ivory or bone to regulate its entrance
15 into the infant's mouth. It has this peculiarity, namely, instead of being perforated with one small round hole, like other teats, it is simply slit crosswise. This slit is kept closed by the elasticity of the caoutchouc, and is opened by pressure, so that it forms in a measure a third valve. By this arrangement the suction tube is provided with two valves,
20 and the whole forms a true suction pump, which will act perfectly by pressure on the teat.

SPECIFICATION in pursuance of the conditions of the Letters Patent,
filed by the said William Robert Lake in the Great Seal Patent
Office on the 18th November 1875.

25 TO ALL TO WHOM THESE PRESENTS SHALL COME, I, WILLIAM
ROBERT LAKE, of the Firm of Haseltine, Lake, & Co., Patents Agents,
Southampton Buildings, London, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her
Letters Patent, bearing date the Twenty-fourth day of May, in the
30 year of our Lord One thousand eight hundred and seventy-five, in the
thirty-eighth year of Her reign, did, for Herself, Her heirs and successors,
give and grant unto me, the said William Robert Lake, Her special
licence that I, the said William Robert Lake, my executors, admini-

Lake's Improvements in Feeding Bottles.

strators, and assigns, or such others as I, the said William Robert Lake, my executors, administrators, and assigns, should at any time agree with and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and 5 Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN FEEDING BOTTLES," a communication to me from abroad by Henry Monchovaut, of Paris, France, upon the condition (amongst others) that I, the said William Robert Lake, my executors or administrators, by an instrument in writing under my, or their, or one of their 10 hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent. 15

NOW KNOW YE, that I, the said William Robert Lake, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying Drawing forming a part of this Specification :— 20

This Invention relates to a feeding bottle, which is provided with valves and marked with divisions of equal capacity, and which is composed of,—

First. A glass bottle.

Second. A stopper which closes the bottle. 25

Third. A suction tube passed through the said stopper.

I have shewn one of these feeding bottles in the accompanying Drawing, in which,—

Figure 1 is a view of one face of the said feeding bottle.

Figure 2 is a view of the divided face opposite to that in Figure 1, the 30 tube and stopper being in section.

Figure 3 is an exterior side view, and Figure 4 a section of the said bottle.

Figures 5, 6, 7, 8, 9, shew details of the same.

Like letters indicate the same parts throughout the Drawing. 35

Lake's Improvements in Feeding Bottles.

The bottle *a* is of an elegant form, as shewn in the Drawing. It has on one of its faces a scale *b* of divisions representing convenient quantities. The stopper *e* is a cork covered by a capsule *f* of wood or porcelain. It is perforated with two holes, one serving for the passage
5 of the suction tube, the other being furnished with a small tube *g* of pewter or other suitable material closed by a valve *h*, which permits the air to enter easily, and prevents the escape of the liquid if the feeding bottle should be overturned. The aforesaid valve is composed of a caoutchouc disc *h* connected to a thread *n*, Figure 5, also of caoutchouc,
10 which forms a spring and keeps the valve to its seat at one extremity of the tin or pewter tube *g*. The thread *n* or tail of the valve passes through the said tube, and is inserted in a small slit or notch *r*, Figure 5, made at the other extremity of the said tube; it has one turn given it, and is brought into the same slit or into another slit. This slit is smaller
15 than the diameter of the thread, so that the latter will be fastened therein, but will slip when pulled endwise. This very simple arrangement permits of taking out, cleaning, replacing, and regulating the valve with facility, rapidity, and precision.

The suction tube is composed of the following parts:—

20 First. A small glass tube *i* immersed in the liquid and furnished at its lower part with a small caoutchouc ferrule *j*, forming a cushion to prevent injury to the tube by the striking of its end against the interior of the bottle *a*.

Second. To the extremity of this tube is tightly fitted a flexible india-
25 rubber tube *k*, which passes through the stopper, and is also tightly fitted therein to prevent the escape of the liquid in case the feeding bottle should be overturned.

Third. To the extremity of this india-rubber tube is tightly fitted a small union joint *l*, Figure 6, of pewter or other suitable material
30 enclosing the retaining valve. This union is bored throughout its length, as shown. One end is properly formed to receive the valve, and the other is split to retain the caoutchouc spring *n*.

Fourth. This second valve *m*, Figure 2, called the retaining valve, is similar in respect of its form and setting to the valve first above
35 described. I will here again remark that this method of attachment permits the easy regulation of the tension of the spring *n* by pulling its

Lake's Improvements in Feeding Bottles.

end and slipping the thread in its slit till the valve comes to its seat, and will lift easily with the weakest suction.

Fifth, and finally. A teat *p*, Figure 8, of caoutchouc is tightly fitted upon the extremity of the union at the end containing the valve. This teat is furnished with a disc *o* of ivory or bone to regulate its entrance 5 in the infant's mouth. It has this peculiarity, namely, instead of being perforated with one small round hole, like other teats used for this purpose, it is slit crosswise. This slit is kept closed by the elasticity of the caoutchouc, and is opened by pressure, so that it forms in a measure a third valve. By this arrangement the suction tube is provided with 10 two valves, and the whole forms a true suction pump which will act properly on pressing the teat. For this reason the said Invention is termed the "Monchovaut pump feeding bottle" (biberon à pompe Monchovaut).

Figure 10 shews another form of valve in the stopper I may adopt, 15 namely, a small disc *A* of metal or caoutchouc traversed by a small wire *B* of plated iron provided with two loops. The lower one serves to hold the device, either for the placing or removal of the valve, and to prevent the displacement of the small disc. The upper one retains a similar double wire *C*, which is twisted several times and then 20 spread open in the form of pincers, and is supported against the interior surface of the pewter or glass tube *D* which passes through the stopper *E* of the feeding bottle. The bore of the stopper is made conical to increase the security of the device. For the removal of the valve it will be sufficient to pull down the lower loop. For replacing it 25 I insert it into the tube, pushing the same loop to the bottom. The connection of the parts *B* and *C* is so made as to leave sufficient play to permit the working of the valve.

Figures 11, 12, 13, and 14, shew the divers forms of the valve in the suction tube.

30

Figure 11 shows a ball valve in the base of the glass tube instead of the valve *g*, Figures 3 and 4. This valve is composed of a small ball *A* of caoutchouc, glass, pewter, wood or bone, placed in the glass tube *B*, which is closed at its lower extremity to retain the said ball. A small plated iron wire inserted in the tube, and holding itself against its inner 35 surface, prevents the undue displacement of the said ball.

Lake's Improvements in Feeding Bottles.

Figures 12 and 13 shew a ball valve placed in the middle of a caoutchouc tube and in the joint near the teat. This joint consists of two pieces connected by a screw thread. These pieces are properly chambered to receive the ball forming the valve.

5 Figure 14 shews a flap valve placed at the bottom of the glass tube B. The lower extremity of this tube may be fitted with a hood C of caoutchouc or other suitable material secured by a caoutchouc ring D. This hood encloses the said flap, which may be held either by a spring or hinge.

10 Although feeding bottles are already in use, and have been known for a long time, these important modifications so change its character that my feeding bottle may be considered quite a new article. In comparison with other feeding bottles my bottle offers the following advantages, that is to say :—

15 First. The Divisions on the Bottle.—Infants fed by this feeding bottle can only take the milk mixed beforehand with a certain quantity of water in determined proportions. Moreover in some maladies it is necessary to give doses of syrups and various beverages. Now the afore-
20 said division into parts of equal capacity will facilitate the administering of the doses without rendering necessary any recourse to special measures. There is therefore an advantage in respect of convenience and economy of time for nurses and mothers of families.

Second. The Air Valve.—This valve in the stopper is designed to permit the entrance of air into the bottle in proportion as it is emptied,
25 and to prevent the escape of the liquid by the orifice in case the bottle should be overturned. This part of feeding bottles has occupied great attention, and has been the subject of numerous Inventions, but heretofore no one has discovered a valve with certainty of action and such
30 simplicity of construction and setting as above described. The said valve is characterized by simplicity with regard to its construction, its removal and cleaning, replacing, regulating, and setting.

Thirdly. The Retaining Valve.—This valve is designed to permit the rising of the liquid to the mouth of the bottle, and prevent its
35 descending when the suction is suspended. The said valve may be applied to any part of the suction tube, and may be of any desired form; for instance, at g, Figures 3 and 4, I have shewn another arrangement which I employ in the place of the preceding, and which

Lake's Improvements in Feeding Bottles.

works equally well. It consists of a small caoutchouc cap slit at the bottom. This cap is introduced into the lower opening of the glass tube; the edges which project serve in place of the cushion ring *j* in Figures 1 and 2, to prevent injury to the tube by blows, and the bottom of the said cap opens to permit the liquid to rise, and closes to prevent its descending. It is evident that the same result might be attained by the employment of other valves, either ball or flap valves, or others. For instance, I may have a ball valve *s* arranged as in Figure 9 to close the upper extremity of the glass tube, and with its thread spring *n* attached to the cushion collar *j* at the other extremity of the said tube. And it is obvious that the form of the parts and the material used in their construction are unimportant, and I may employ any suitable form of valve, and place the same in any convenient part of the suction tube, and employ any material that I find most convenient and the best adapted to my purpose.

Fourthly. The Teat Slit.—This is a very important feature of my Invention, for I obtain with this alone the effect of a valve. With this teat, combined with one of the retaining valves above described, I obtain a true pump, whose action is caused by pressing the teat. Furthermore, this arrangement prevents obstruction; the slightest clot of milk is sufficient to obstruct the hole of ordinary teats used for this purpose, while in mine it passes through the slits, which open more or less according to the pressure. If the teat is squeezed the slits open and permits the escape of the air contained in its cavity. When it is released the slits close, and the teat in swelling by its own elasticity draws the liquid from the bottle, which rises and lifts the retaining valve. If the pressure is renewed the liquid, not being able to return because it is held by the retaining valve, escapes by the slits of the teat, and so on, consequently the infant need make no effort of suction to drink, but need only press the teat against his gums. If he draws he drinks, if he does not draw he drinks all the same the moment he bites the teat. The action may be readily ascertained by pressing the teat several times between the fingers; the liquid will spirt after the pressure has been five or six times repeated.

In using another feeding bottle the sucking will cause the milk to rise, and cessation of sucking will allow the milk to descend, therefore a continuous sucking effort is necessary in drinking. Newly-born infants using the bottle draw in a jerking manner, causing the milk to rise, and

Lake's Improvements in Feeding Bottles.

letting it return without drinking; they therefore exhaust themselves in vain efforts, and it is only after a certain amount of practice that they acquire the necessary habit, but in the meantime they often contract inflammation of the mouth or throat or of the intestines, which sometimes proves fatal. These objections do not apply to my feeding bottle, which imitates exactly natural suckling.

It will be observed that all the parts of this feeding bottle are extremely simple, easy to remove and replace, and above all easy to clean. These advantages do not exist in the bottles heretofore invented, for all former improvements in feeding bottles have been abortive because of their complications and the difficulty of cleaning their various parts; therefore the utility of this Invention is incontestable and general, and the said feeding bottle is destined to be of great service. The means for carrying the said Invention into practice present no difficulties.

Having thus fully described the nature of the said Invention, as communicated to me by my foreign correspondent, and the manner of performing the same, I wish it understood that I claim a feeding bottle fitted with valves and graduated, and whose principal features are,—

First. The bottle or flask marked with divisions of equal capacity.

Second. The valve for the admission of air into the stopper.

Third. The retaining valve in the suction tube, of any suitable form, and in any desired position in the said tube.

Fourth. The teat slit instead of being perforated in the ordinary manner.

In witness whereof, I, the said William Robert Lake, have hereunto set my hand and seal, this Eighteenth day of November, in the year of our Lord One thousand eight hundred and seventy-five.

W^M. ROB^T. LAKE. (L.S.)

Witness,

HY. JA^S. NOONE.

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1875.

Notes on the History of the ...

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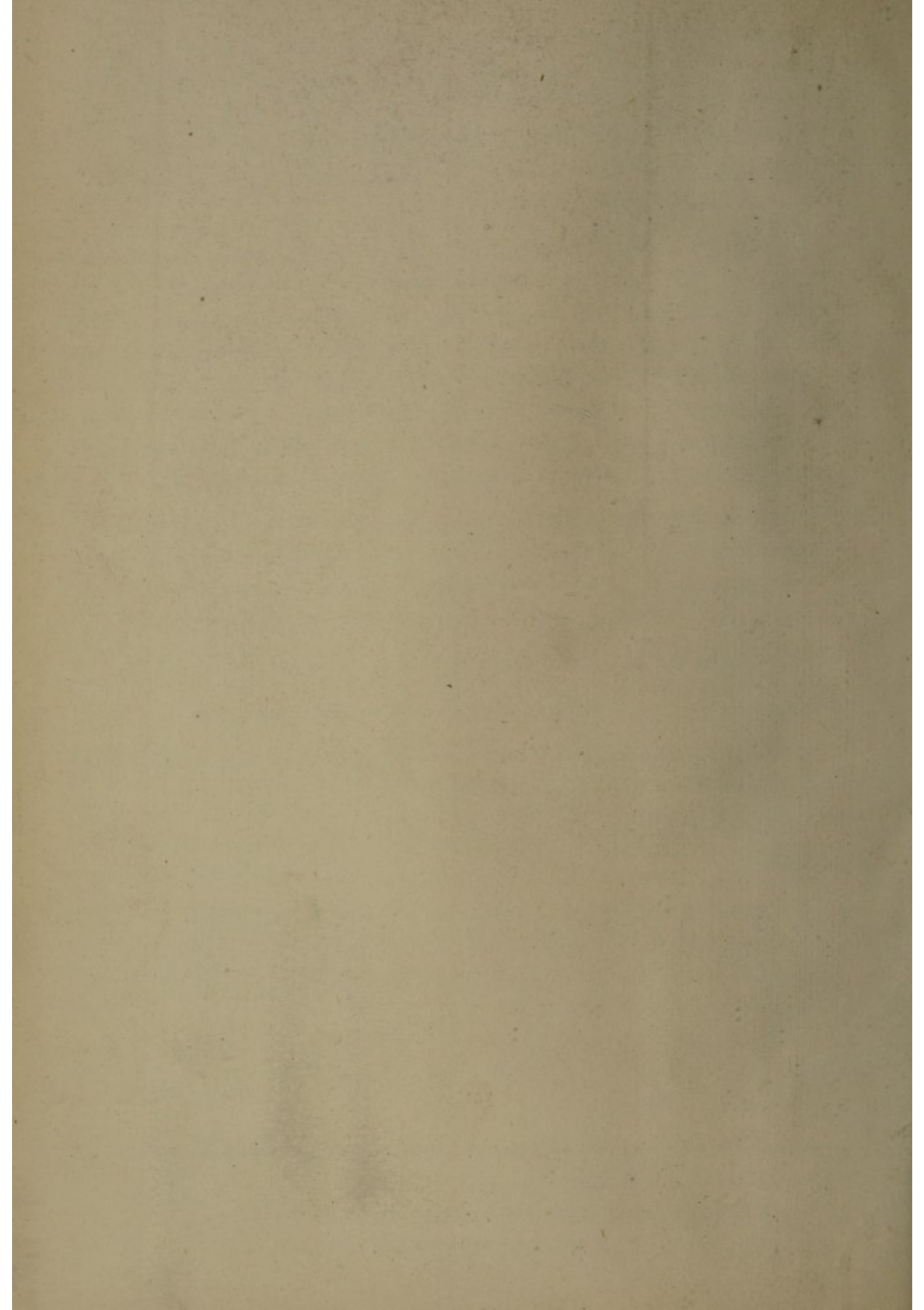
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A.D. 1875. MAY 24. N^o 1899.
LAKE'S PROVISIONAL SPECIFICATION.

SHEET 1

(2 SHEETS)
PL. 1.

FIG. 1.

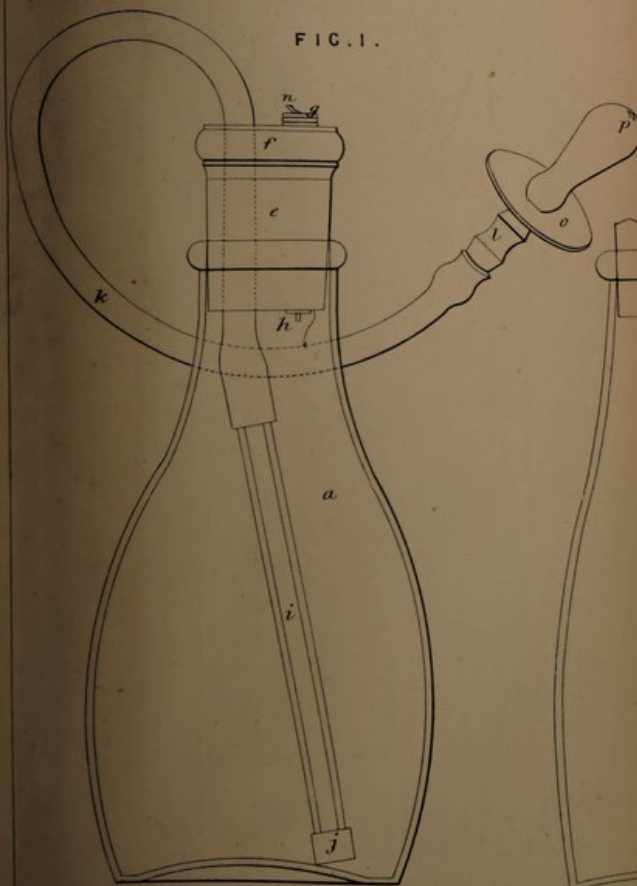


FIG. 3.



FIG. 2.

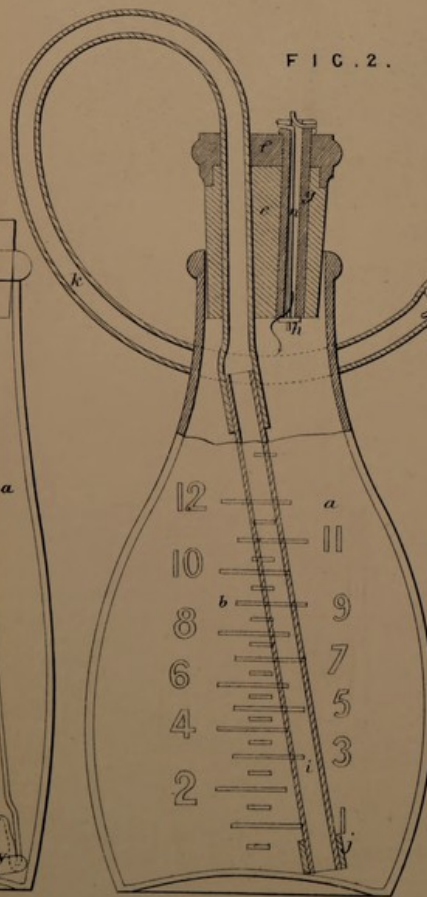
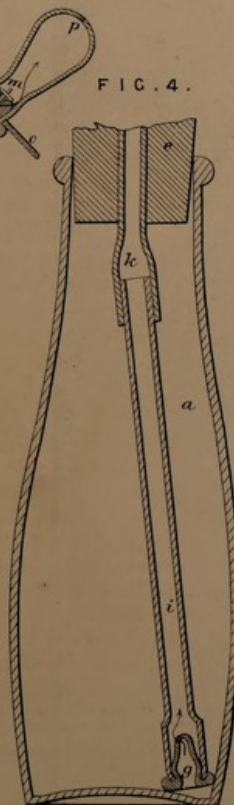


FIG. 4.



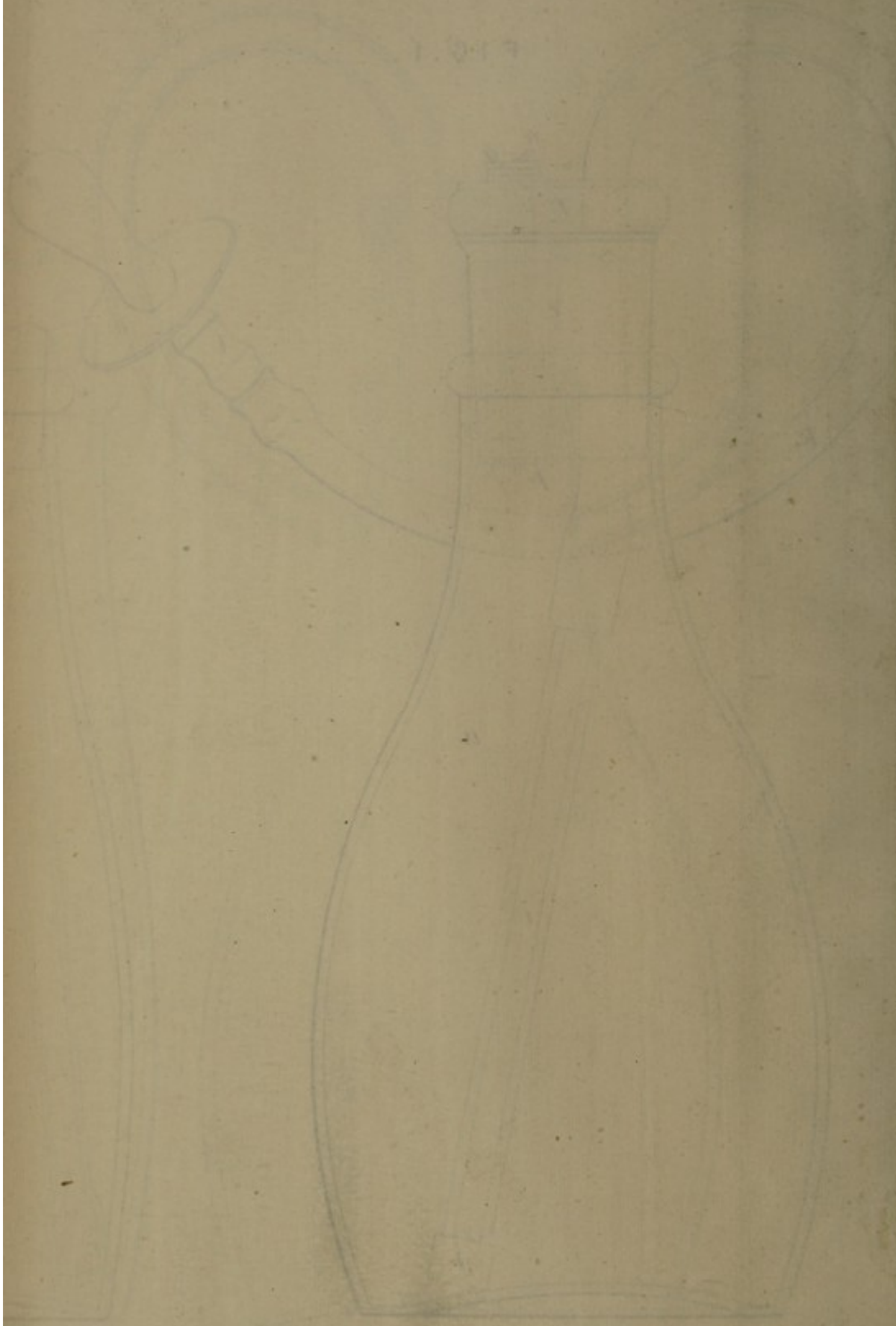
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LAKE'S PROVISIONAL SPECIFICATION.

(2 SHEETS)
PL. 2.

FIG. 5.

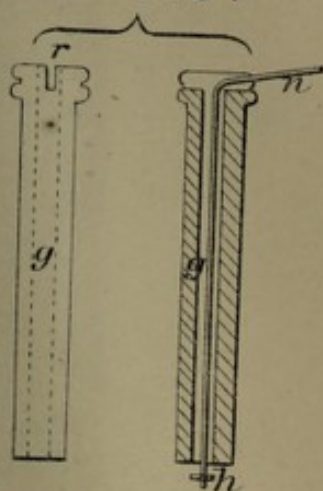


FIG. 6.

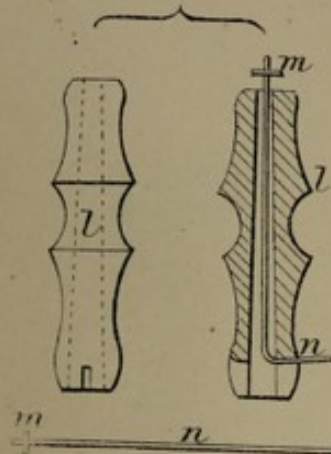


FIG. 7.

FIG. 8.

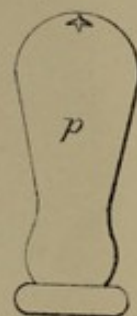
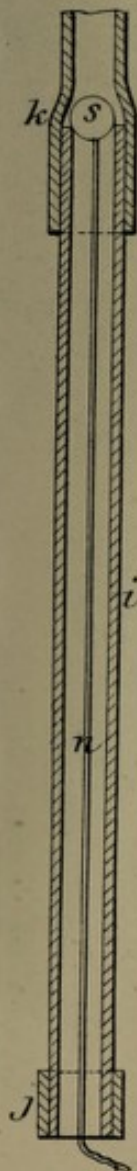


FIG. 9.



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