J. S. BRIDGES.

TEETHING DEVICE.

APPLICATION FILED AUG. 14, 1911.

1,095,264.

Patented May 5, 1914.

Fig. 1.

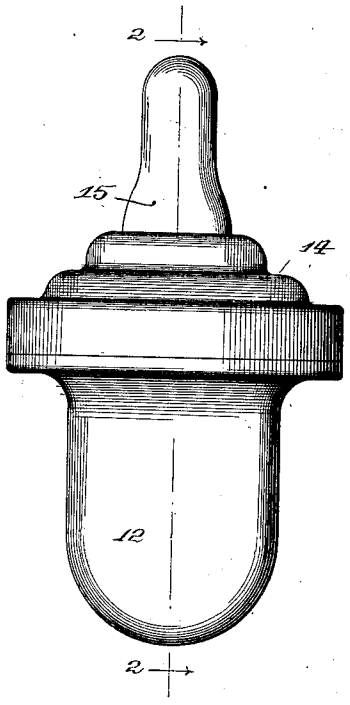


Fig. 2.

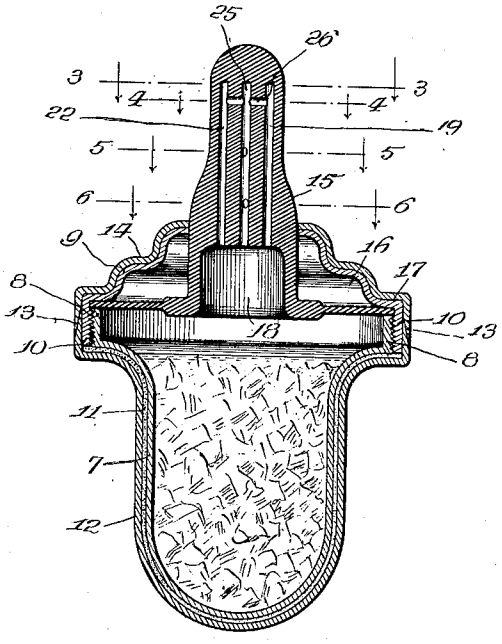


Fig. 3.

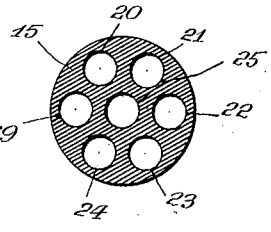


Fig. 4.

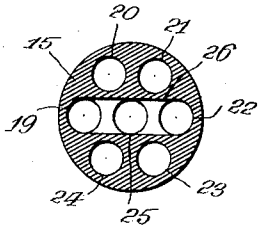


Fig. 5.

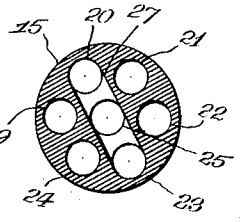
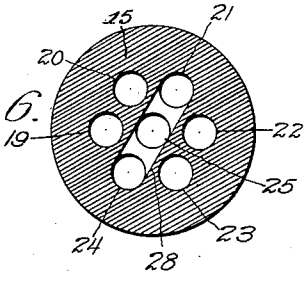


Fig. 6.



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TEETHING DEVICE.

1,095,264. Specification of Letters Patent. Patented May 5, 1914.

Application filed August 14, 1911. Serial No. 643,849.

To all whom it may concern:

Be it known that I, JOSIAH S. BRIDGES, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Teething Devices, of which the following is a full, clear, and exact specification.

This invention relates to improvements in teething devices for infants to bite upon during the cutting of their teeth, and, at the same time cooling their feverish gums without a liability to chill their hands when holding the device in its operative position, and particularly in which there is but a single column of water in the yielding nipple bitten upon and the nipple must be distended by internal metal springs for preventing objectionable collapsing, and yet secure the necessary resiliency of the nipple.

The primary object of this invention is a teething device in which a plurality of streams of cooling liquid may be circulated lengthwise thereof, and the construction of the nipple, as a whole, be of such a character that any necessity for metal springs for distending it and adjusting its resiliency is entirely obviated.

A further object of this invention is a teething device, the construction of which, as a whole, is such that a continuation of the rubber, of which the nipple is necessarily composed, may be utilized as a gasket to seal the joint between the nipple and the cap or cover for the cooling liquid receptacle, and incidentally the construction of a nipple for the purposes of a nursing bottle, which nipple is so constructed as to be adapted for sealing the joint between the cap or cover and body of a nursing bottle.

With these ends in view, my invention finds embodiment in certain features of novelty in the construction, combination and arrangement of parts by which the said objects and certain other objects are hereinafter attained, all as fully described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In said drawings:—Figure 1 is a side elevation of a teething device in which my invention finds embodiment. Fig. 2 is a longitudinal section thereof on the line 2—2 of Fig. 1. Fig. 3 is a transverse section through the nipple on the line 3—3 of Fig. 2. Fig. 4 is a similar view on the line 4—4 of Fig. 2. Fig. 5 is a similar section on the line 5—5 of Fig. 2; and, Fig. 6 is a similar section on the line 6—6 of Fig. 2.

Similar characters of reference indicate the same parts in the several figures of the drawing.

7 is a receptacle for holding a cooling liquid, such for example as water, provided at its upper and open end with a screw-threaded flange 8 to which a cap 9 is secured by means of a screw-threaded flange 10, the body of the receptacle and the cap being preferably composed of sheet metal, but may be of other material, and the body surrounded by felt extending to contact with the edge of the flange 10 of the cap. Inclosing the felt 11 is the body of a shell 12, or, in other words, for insulating purposes hereinafter described the felt 11 fills an annular space between the receptacle 7 and the shell 12, insulating the latter from being cooled by the contents of the receptacle.

Telescoping upon the shell 12, as indicated at 13, is a cap 14 forming a continuation of the body portion of the shell, which closely fits against the cap 9 of the receptacle, but if found desirable or necessary may be insulated therefrom by interposing between the caps 9 and 14 a layer of felt, although in practice this need not be necessary, for the reason that the infant may hold the teething device in its operative position by grasping the shell 12 in its hand or hands.

Projecting through suitable openings in the caps 9 and 14 is a nipple 15 from which projects a flange 16 across the top edge of the receptacle 7 against the flange of the cap 14 and between the horizontal base 17 of the cap, with the result that when the flange 10 of the cap is tightened upon the flange 8 of the receptacle 7, the flange acts as a gasket, tightening the joint between the receptacle and its cap, and at the same time serving to sustain the nipple in its operative position and yieldingly against an end thrust, painful to the mouth of the infant producing such a thrust in efforts to introduce the nipple into its mouth.

The nipple 15 and the flange 16 are composed entirely of vulcanized rubber, and as shown preferably of a single piece, of such

resiliency as best adapt them for use when constructed as they are shown to be in the drawing, and that when provided with longitudinal perforations hereinafter described, their separating wall will sustain the nipple against collapsing.

For the purposes of economy and convenience of construction, the nipple 15 is provided with a chamber 18 adjacent its base, which chamber communicates with a number of passages 19, 20, 21, 22, 23 and 24, surrounding a central passage 25, all of which are closed at their upper end, but at intervals of their length are connected by a number of cross passages 26, 27 and 28, each of which cross passages is in a different plane from the other, and so arranged that each longitudinal passage is connected by these cross passages with every longitudinal passage, notwithstanding the different planes of these several passages, for, as will be seen by references to Figs. 3, 4, 5 and 6, the cross passage 26, toward the upper end of the nipple, connects the longitudinal passages 19, 22 and 25, the cross passage 27 connects the longitudinal passages 20, 23 and 25, and the cross passage 28 connects the longitudinal passages 21, 24 and 25^m so that all the longitudinal passages are indirectly connected by the cross passages. The purpose and result of this cross passage connection with the longitudinal passages is to produce a circulation of the cooling liquid in and out of the nipple by the compression and expansion of the nipple through repeated biting of the infant, operating, as it does, to force out the cooling liquid, warmed between bites by the feverish gums and mouth of the infant, and by the expansion of the nipple the inflow of a fresh supply of cooling liquid on releasing that bite.

At this point it should be observed that the vulcanized rubber, of which the nipple is and must be composed, is of a resiliency sufficient to normally keep the several passages fully distended, and at the same time to yield to the bite of the infant sufficiently to collapse the longitudinal passages to a degree producing the continuous circulation of the cooling liquid in and out of the nipple by repeated biting thereon, and, in short, that the nipple is of such resiliency as is best adapted for teething purposes either with or without passages for the circulation of a cooling liquid or other cavities therein.

My invention, however, is not limited to the details of construction hereinbefore described, as, for example, to the use of a felt as an outside covering of the cooling liquid receptacle, for other material adapted for the same purpose may be used with efficiency, and so also may the shell be omitted, and the surface of the insulating material serve the same purpose so far as the transmission of cold therethrough to the hands of the infant is substantially prevented. Furthermore, while I regard it desirable to have the chamber 18 in the nipple, the omission thereof would be no substantial departure from my invention, nor would be a different form and arrangement of the passages therein, so long as a plurality of passages are in sufficient number to produce a circulation of the cooling liquid therein, as before described, and in this connection it is proper to state that any means, other than the gasket 16 integral with the nipple, might be used for tightening either the joint of the nipple or the filling orifice of the liquid receptacle.

In conclusion, it should be observed that it would be no substantial departure from the spirit of my invention to connect all of the longitudinal passages, toward their upper inclosed ends, by cross passages in the same plane, but in practice it is found that the best possible circulation of the liquid through the passages is obtained by connecting them by cross passages in different planes, for the reason that an infant bites the nipple at different points and that in any event the pumping action of the nipple is increased as compared with what it is when the connections of all the longitudinal passages are in the same plane.

Having described my invention, what I claim and desire to secure by Letters Patent is:—

1. A teething device comprising in combination a receptacle for a cooling liquid, and a resilient mouth nipple provided with a series of parallel longitudinal passages closed at one end and at their other end opening into said receptacle, the surrounding wall of which passages are adapted to sustain the nipple against collapsing.

2. A teething device comprising in combination a receptacle for a cooling liquid, and a nipple provided with a chamber, and with a series of longitudinal passages therein, closed at one end and opening at their opposite end into said chamber.

3. A teething device comprising in combination a receptacle for a cooling liquid, and a resilient mouth nipple provided with longitudinal passages and connecting cross passages in open communication with the contents of the receptacle, whereby there may be a circulation of cooling liquid from the receptacle into and out of the nipple.

4. A teething device comprising in combination a receptacle for a cooling liquid, a resilient mouth nipple, a plurality of passages extending longitudinally of said nipple, and a plurality of cross passages connecting said longitudinal passages in different planes.

5. A teething device comprising in combination a receptacle for a cooling liquid, a detachable cap for said receptacle, a yielding

nipple, and a gasket projecting therefrom into and sealing the joint between the receptacle and its cap, substantially as described.

6. A teething device comprising in combination a receptacle, a detachable cap therefor, a gasket for sealing the joint between said cap and receptacle, a yielding nipple provided with a plurality of passages in open communication at one end with the receptacle and closed at the other end, and means for connecting the passages one with the other, substantially as described.

In witness whereof, I have hereunto set my hand and affixed my seal, this 12th day of August A. D. 1911.

JOSIAH S. BRIDGES. [L. S.]

Witnesses:
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JNO. G. ELLIOTT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."