

## **Improvements in teats / [Martin Dunphy Armstrong].**

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PROVISIONAL SPECIFICATION.

Improvements in Teats.

I, MARTIN DUNPHY ARMSTRONG, of 24, Christie Road, South Hackney  
Manager of India Rubber Works, do hereby declare the nature of this invention  
to be as follows :—

My invention relates to the manufacture of india rubber teats for feeding bottles,  
5 babies toys, veterinary purposes and some other uses, and refers to an arrangement  
of ribs or prominences on the internal surface of the teat by which several material  
and important advantages are obtained.

10 Instead of making the teat, as is usual, of equal or nearly equal thickness  
throughout, I make the internal surface of the teat with a series of papillæ,  
prominences, points, corrugations, ribs, or ridges arranged either longitudinally,  
obliquely, annularly or otherwise, but I prefer the longitudinal arrangement,  
thereby producing between such papillæ ribs, or ridges, a series of hollows or  
channels.

15 And I make such prominences and hollows extend from the thickened annular  
part which usually forms the base of the teat to, or nearly to, the apex or I may  
make them extend only part of length of the teat, *viz.* to commence a short  
distance from the basal ring and terminate a short distance before reaching  
the apex.

20 These internal prominences give the teat a degree of resiliance which those of  
ordinary construction do not possess and which makes it seem to the touch to  
resemble the human nipple more nearly than do the teats now in common use,  
and further this construction prevents the flow of milk being entirely stopped by  
the pressure of the child's gums, for the channels or depressions between the said  
25 prominences are not easily entirely closed and thus a constant flow of the milk or  
other fluid is secured, and the internal surfaces are not likely to stick together as  
those now in use so often do and are thereby rendered useless.

30 With my improved teats there is much less liability of air obtaining admission,  
for in the ordinary teat the passage becomes entirely closed when the child nips  
the teat, and it is then necessary for the child to let go its hold more or less  
completely before the teat can open to again allow the milk to pass, and it is at  
this moment that the teat usually becomes filled with air, which enters more quickly  
than the milk, and which air has afterwards to be sucked out by the child, to its  
manifest disadvantage, whereas with my improved teat the milk passage is never  
entirely closed, the flow is almost constant, and no such entry of air is likely to  
35 take place, or not to the same extent.

My invention is also specially advantageous for teats for feeding lambs, calves,  
and the like.

40 This teat also affords great facilities for cleansing, as it may be very perfectly  
and easily washed by being rolled a few times between the thumb and finger in  
warm water, thus avoiding the necessity for brushes or other cleansing devices.

It will be obvious that my improved teats may be made with any desired  
perforations as for instance one or more leech-bite perforations or simple  
perforations or, for suction purposes, without perforation.

Dated the Fourteenth day of July 1892.

*Armstrong's Improvements in Teats.*

## COMPLETE SPECIFICATION.

## Improvements in Teats.

I, MARTIN DUMPHY ARMSTRONG, of 24 Christie Road, South Hackney, Manager of India Rubber Works, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to the manufacture of india rubber teats for feeding bottles, 5 babies' toys, veterinary purposes and some other uses, and refers to an arrangement of ribs or prominences on the internal surface of the teat, by which important advantages are obtained which are hereinafter described.

According to my invention instead of making the teat of equal, or nearly equal thickness throughout, I make the internal surface of the teat with a series of 10 papillæ, prominences, points, corrugations, ribs, or ridges arranged either longitudinally, obliquely, annularly or otherwise, but I prefer the longitudinal arrangement, thereby producing between such papillæ, ribs or ridges, a series of hollows or channels.

I make such prominences and hollows extend from the thickened annular part 15 or roll which usually forms the base of the teat, to or nearly to the apex, or I may make them extend only part of the length of the teat, *viz.* to commence a short distance from the basal ring and terminate a short distance from the apex as is shown in the annexed drawings in which I have represented the preferable arrangements, but it will be obvious that the arrangement of the prominences 20 may be varied indefinitely.

In the drawings

Fig. 1, represents an external view of one of my improved teat which external view does not differ in any respect from a like view of an ordinary teat.

Figs. 2, 3 and 4 are longitudinal sections, showing different arrangements of the 25 internal surface.

Fig. 5, is a transverse section of the teat represented in Fig. 2.

Fig. 6 is an elevation of the mould on which this teat is made and Fig. 7 is a transverse section of the same.

Of the different arrangements shown I prefer that represented in Fig. 2 and 5 in 30 which a series of ribs or ridges *a, a* are formed longitudinally in the teat. In the drawing five such ribs are shown but the teat may be made with more or less, four, five or six are the most convenient numbers.

Fig. 3, is a section of a teat with annular ribs or corrugations *b, b*, and Fig. 4 35 is a similar section of a teat with papillæ, or prominences *c, c*.

It will be observed that whatever form the ribs or papillæ may be given they should be carefully rounded at the base so as to merge gradually into the adjacent surface, so as not to offer angular recesses from which it may be difficult to dislodge the milk when cleaning the teat. Fig. 6 is an elevation and Fig. 7 a section of a 40 mould on which I produce seamless teats such as that shown in Figs. 2 and 5 by the ordinary and well known process of repeated dipping in a solution of rubber (preferably in naphtha) and afterwards curing; and such mould differs from those in ordinary use only in being formed with longitudinal hollows, or flutes *a'* corresponding with the ribs *a* to be produced; or if intended to produce teats of other internal pattern, such for instance as those shown in either Fig. 3 or Fig. 4, the 45 mould is made with corresponding surface.

Seamed teats may be made in the usual manner from two pieces of sheet rubber cemented together, such sheet rubber having previously had impressed on one side of it, by means of steel or other plates of appropriate pattern, or the like means, the desired ribs or papillæ. 50

Such teats are then placed on a mould to be cured, which may be done by any of the well known processes, such as by steam, or carbon or sulphur bath.

*Armstrong's Improvements in Teats.*

Teats made as above described present the advantage that the internal prominences give the teat a degree of resilience which those of the usual construction do not possess and which makes it seem to the touch to resemble the human nipple more nearly than do the teats in common use; and further this

5 construction prevents the flow of milk being entirely stopped by the pressure of the child's gums, for the channels or depressions between the said prominences are not easily entirely closed and thus a constant flow of the milk or other fluid is secured and the internal surfaces are not likely to stick together as those now in use so often do and are thereby rendered useless.

10 With my improved teats there is much less liability of air obtaining admission, for in the ordinary teat the passage becomes entirely closed when the child nips the teat, and it is then necessary for the child to let go its hold, more or less completely, before the teat can open again to allow the milk to pass, and it is at this moment that the teat usually becomes filled with air which enters more

15 quickly than the milk, and which air has afterwards to be sucked out by the child to its manifest disadvantage, whereas with my improved teat the flow is almost constant, and no such entry of air is likely to take place, or not to the same extent.

My invention is also specially advantageous for teats for feeding lambs, calves

20 and the like.

This teat also affords great facilities for cleansing, as it may be very perfectly and easily washed by being rolled a few times between the thumb and finger in warm water thus avoiding the necessity for brushes or other cleansing devices.

It will be obvious that my improved teat may be made with any desired

25 perforations, as for instance, one or more leech-bite perforations, or simple perforations, or for other purposes without perforations.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is:—

30 (1.) Making teats with a series of papillæ, prominences, points, corrugations, ribs or ridges, arranged either longitudinally, obliquely, annularly or otherwise, substantially as described and shewn.

(2.) Teats with internal papillæ, prominences, ribs or the like, as and for the purpose described.

35 (3.) Teats for infants' use, also for veterinary purposes, and for other purposes for which teats are used, having on the inner surface thereof a series of papillæ, prominences or points such as *c. c.* in Fig. 4 or corrugations, ribs or ridges, such as *a, a,* in Figs. 2 and 5 or *b, b,* in Fig. 3 substantially as shewn in the drawings and as described.

40 Dated the 13th day of April 1893.

M. D. ARMSTRONG.





Fig 1



Fig 2



Fig 3

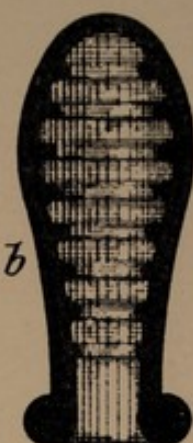


Fig 4



Fig 6

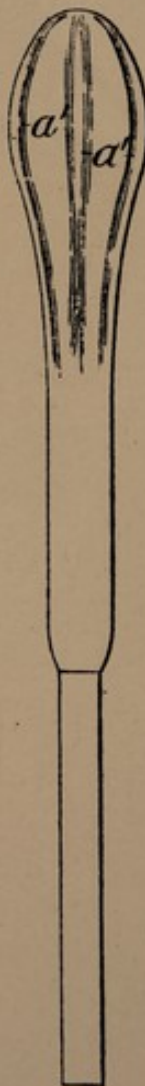


Fig 5



Fig 7



[This Drawing is a reproduction of the Original on a reduced scale.]

