

D. T. SHARPLES.

TEAT CUP.

APPLICATION FILED FEB. 5, 1910.

974,834.

Patented Nov. 8, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

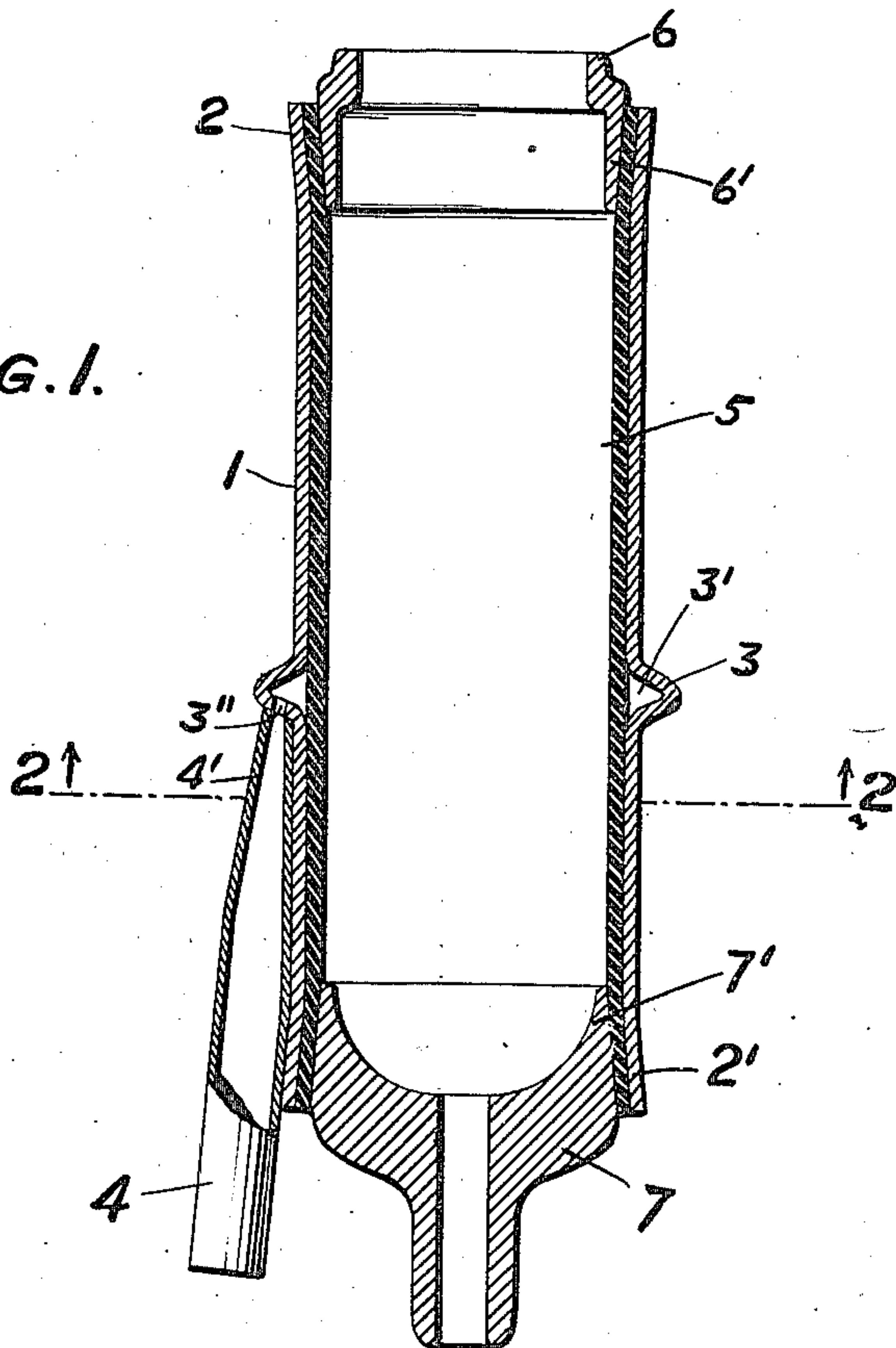
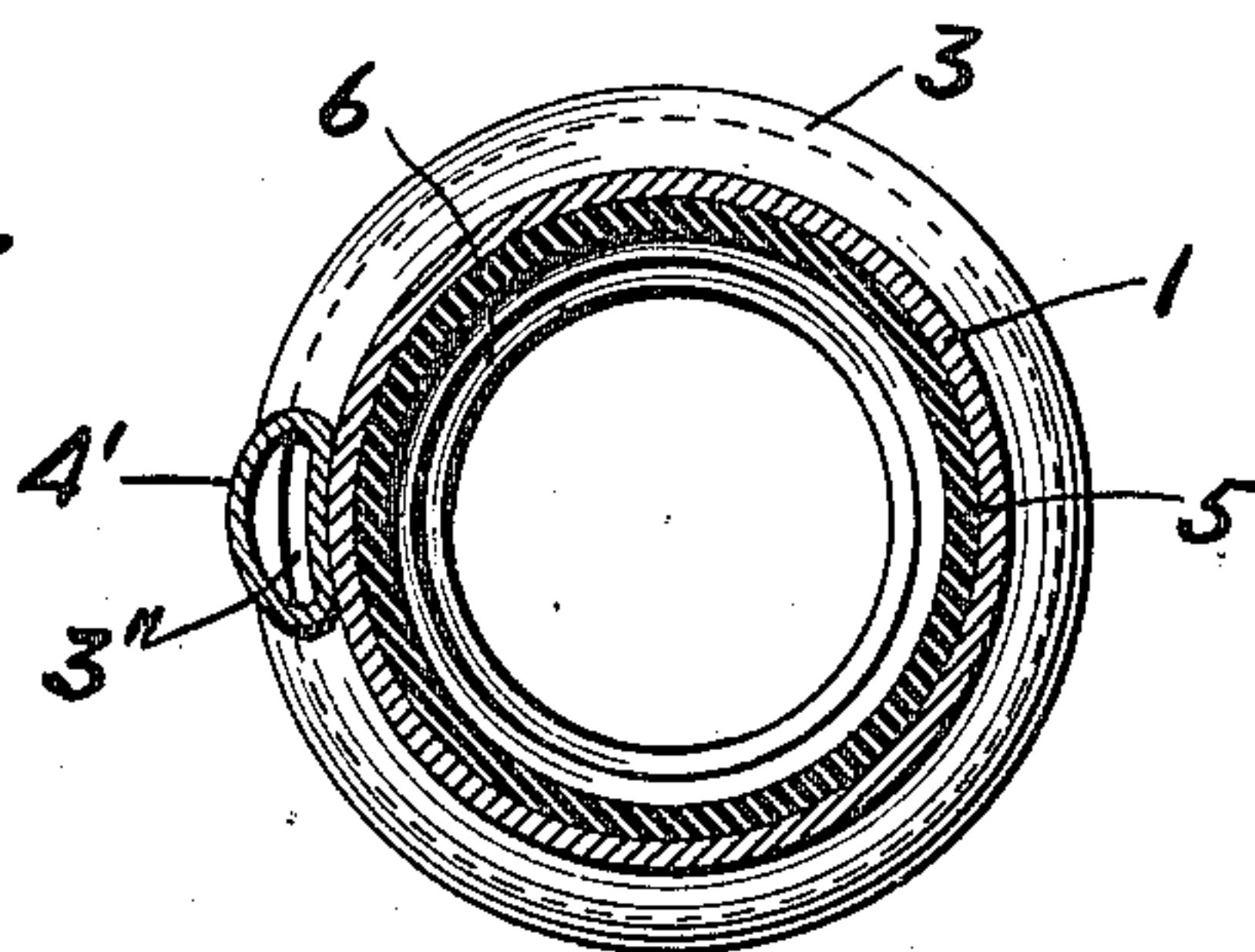


FIG. 2.



WITNESSES:

Robt. Mitchell
Joe G. Ramsey

INVENTOR

David J. Sharples
BY *Chas. W. Butler*

ATTORNEY.

D. T. SHARPLES.

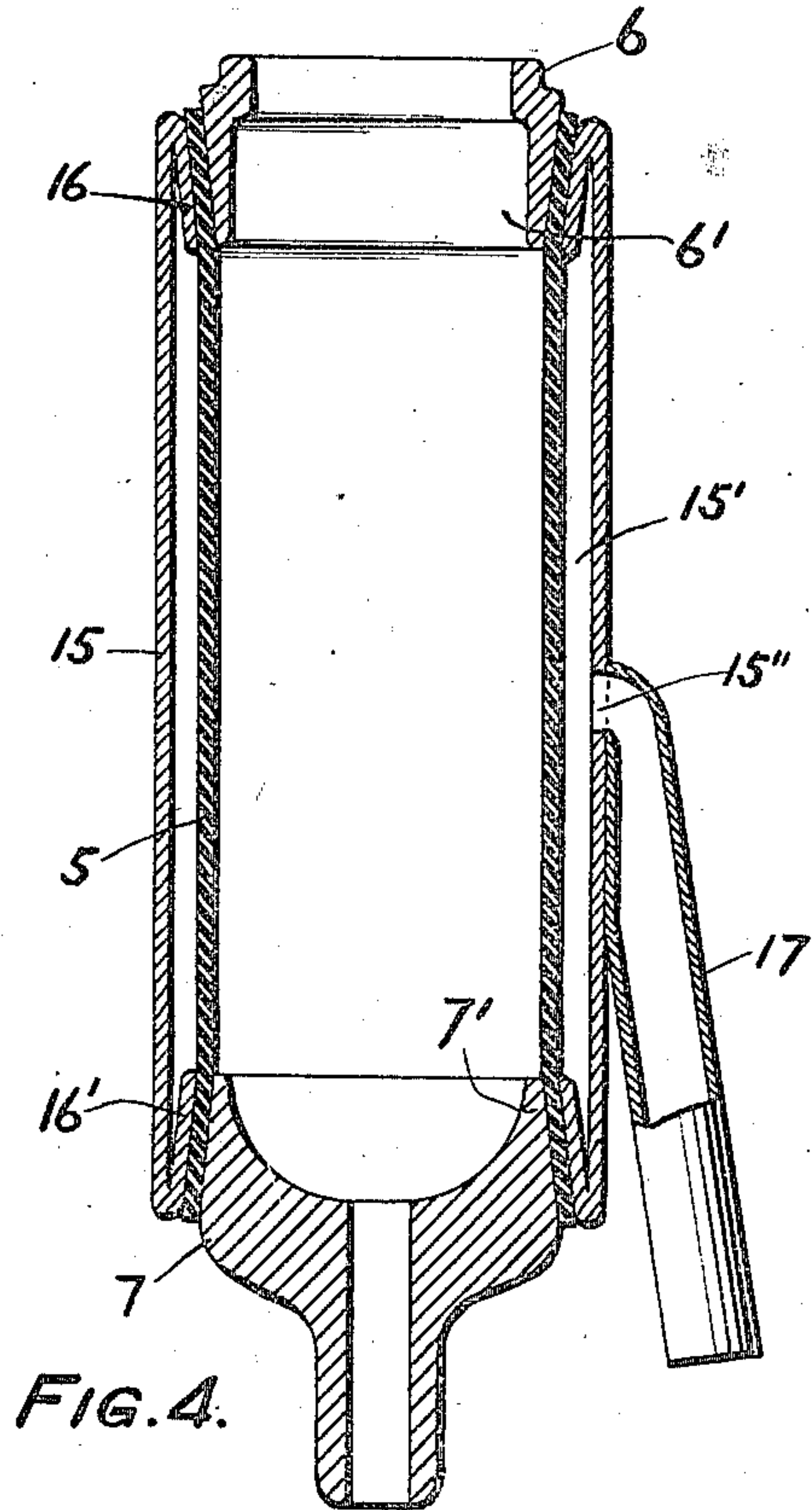
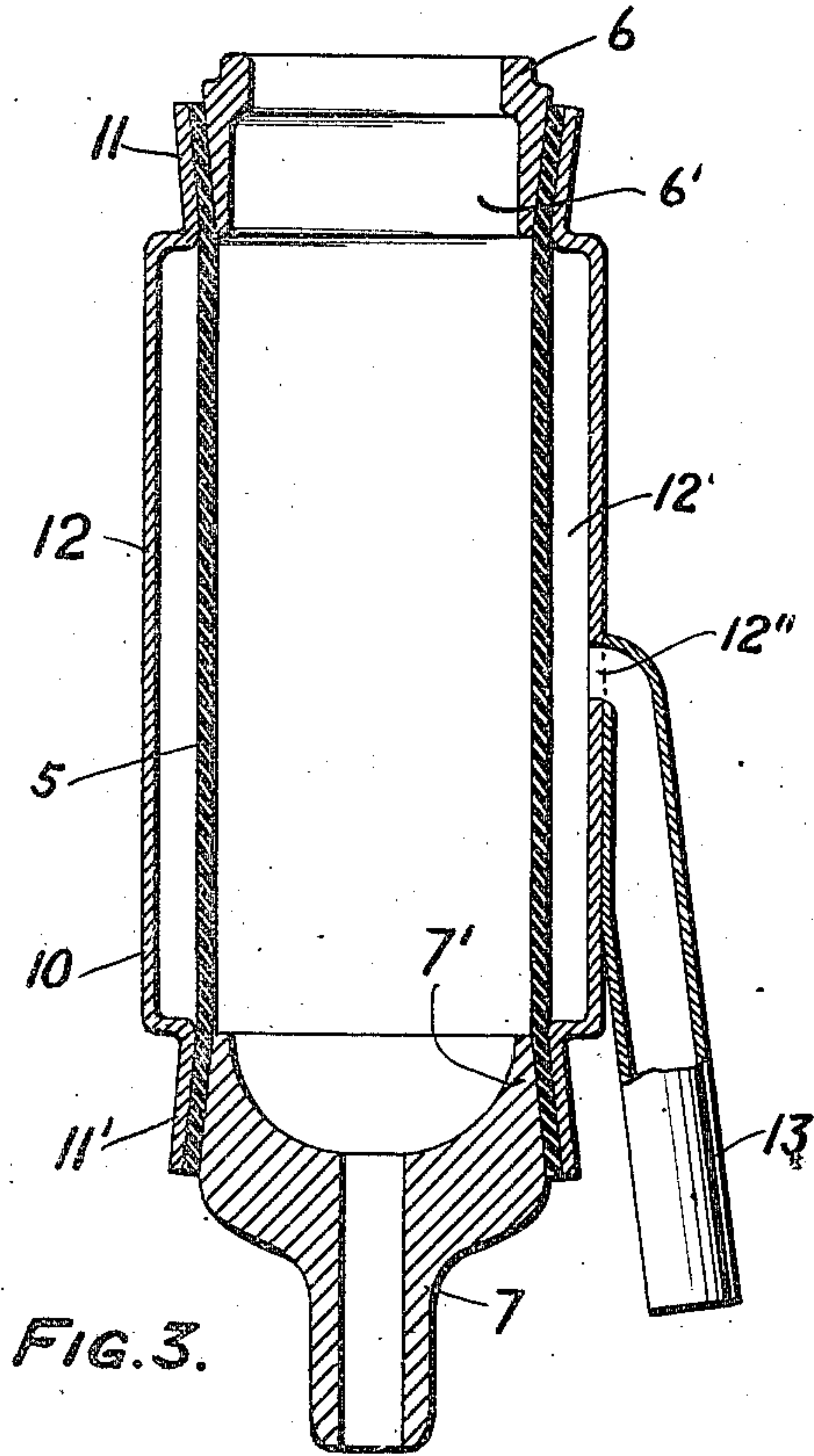
TEAT CUP.

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2 SHEETS—SHEET 2.



WITNESSES:

Robt. R. Kitchel.

Geo. G. Denny Jr.

INVENTOR

David J. Sharples

BY

Charles N. Butler

ATTORNEY.

UNITED STATES PATENT OFFICE.

DAVID TOWNSEND SHARPLES. OF WEST CHESTER, PENNSYLVANIA.

TEAT-CUP.

974,834.

Specification of Letters Patent.

Patented Nov. 8, 1910.

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To all whom it may concern:

Be it known that I, DAVID T. SHARPLES, a citizen of the United States, residing at West Chester, in the county of Chester and State of Pennsylvania, have invented certain Improvements in Teat-Cups, of which the following is a specification.

The teat cup forming the subject of my invention comprises, in its preferred form, a rigid outer shell having end seats tapering inwardly and a median chamber communicating with an exterior nipple, a flexible tube disposed within the shell, a ring having a tapered portion which is frictionally engaged within the upper end of the flexible tube in the tapered upper seat of the shell and a nipple having a tapered part which is frictionally engaged within the lower end of the flexible tube in the tapered lower part of the shell.

This teat cup is designed for milking operations where, with the ring slipped upon the teat, variable resultant pressures, due to pneumatic effects communicated through the nipples to the exterior and interior of the tube, cause the tube to collapse and expand intermittently. The chamber provides a constantly open space for free pneumatic action within the shell around the tube regardless of the position of the latter. The tapered seats of the shell with the devices having tapered parts telescoping therewith provide simple and efficient means for engaging and disengaging the flexible tube. The tube is of simple character so that substitutions can be readily made. The parts are simple, durable, inexpensive and readily cleaned.

The characteristic features of my invention are fully disclosed in the accompanying drawings and the following description thereof.

In the drawings, Figure 1 is a sectional elevation of a teat cup embodying my invention; Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1; Fig. 3 is a sectional elevation representing a modified form of the construction, and Fig. 4 is a sectional elevation representing a further modification.

In the form of the invention illustrated in Figs. 1 and 2, the outer tubular shell 1, preferably made of steel, has the similar expanded ends 2, 2', providing inwardly tapering seats, and the expanded median portion 3 forming a chamber 3', the latter extending around the body of the shell and being

formed preferably by outwardly crimping or expanding the metal. A tubular nipple 4, adapted for engagement with the air pipe, has its flattened upper portion 4' connected with the bottom of the chamber 3' and communicates therewith through the elongated port 3'' in the chamber's bottom wall, the nipple being suitably of the same material as the shell and brazed to the wall thereof beneath the chamber to provide a substantial construction. The soft rubber tube 5, disposed within the shell 1, has its upper end tightly engaged to the seat in the upper end of the shell by the ring 6 having a tapered part 6', the latter being placed within the tube and pressed in to press the tube end against the tapered wall or seat of the shell. The ring is adapted to be slipped on the teat and bear against the udder. The lower end of the tube is fixed to the shell by the nipple 7 having the tapered portion 7' placed within the lower end of the tube and pressed in to effect a tight engagement with the lower tapered wall or seat of the shell. This nipple is adapted for engagement with the suction pipe. The ring 6 and the nipple 7 are readily withdrawn from their frictional engagements within the tube ends and the several parts thus quickly separated and separately cleaned without difficulty owing to their plain, simple and open characteristics.

In the form of the invention illustrated in Fig. 3, the tubular shell 10 has the inwardly tapered or outwardly expanded end walls or seats 11 and 11' and the intermediate wall 12 expanded or lying farther from the axis of the shell than the contracted ends of the seats. The soft rubber tube 5 has its upper end engaged within the seat 11 by the tapered portion 6' of the ring 6 wedged therein and the lower end of the tube is engaged within the seat 11' by the wedging action of the tapered portion 7' of the nipple 7. The nipple 13 is fixed to the shell and communicates by the port 12'', formed in the wall 12, with the air chamber 12' which is formed by this wall around the tube 5.

In the form of the invention illustrated in Fig. 4, the tubular shell 15 has the inwardly tapered end seats 16 and 16' suitably formed by turning in the ends of a metal tube. The rubber tube 5 has an end thereof engaged within the seat 16 by the tapered part 6' of the ring 6 and the lower end of

the tube is engaged within the seat 16' by the tapered part 7' of the nipple 7. A nipple 17 is fixed to the shell and communicates by the port 15'', formed in the wall of the shell, with the air chamber 15' which is formed by the wall around the tube 5.

In each of the foregoing constructions, the one piece shell, with its tapered end seats and its body portion expanded beyond them, combines with the flexible inner tube and the conical end members to form a cup having parts which can be engaged in assembled relation by merely pressing into position the end pieces and which can be dissociated by disengaging such pieces. In each of the forms an air chamber extends around the inner tube, in constantly open communication with the air nipple, whereby free pneumatic action upon the tube can be effected at all times.

As the rubber tube is the only part of the cup which deteriorates by use and time and as it is preferably a plain cylindrical section, which may be of commercial character, it can be renewed readily and at slight cost.

Having described my invention, I claim:

1. A teat cup comprising a shell having tapered end seats, a flexible tube disposed within said shell, devices having tapered parts for fixing the ends of said tube within the ends of said shell, and a passage communicating with the interior of said shell exterior to said tube.

2. A teat cup comprising a tubular shell having tapered end seats, a flexible tube disposed within said shell, a ring having a tapered part for holding an end of said tube within an end seat of said shell, and a nipple having a tapered part for holding an end of said tube within an end seat of said shell.

3. A teat cup comprising a shell having an expanded intermediate section, a duct communicating with said section, a flexible tube within said shell, and means for fixing the ends of said tube to the ends of said shell, said expanded portion forming a chamber around said tube and communicating with said duct.

4. A teat cup comprising a shell having end seats, a tube disposed within said shell, a ring having means for frictionally engaging an end of said tube to one of said end seats, a nipple having means for frictionally engaging an end of said tube to the other of said end seats, said shell having an intermediate portion thereof expanded and forming a chamber surrounding said tube, and a duct communicating with said chamber.

In witness whereof I have hereunto set my name this 3rd day of February, A. D. 1910, in the presence of the subscribing witnesses.

DAVID TOWNSEND SHARPLES.

Witnesses:

H. B. CARLISLE,
A. C. MACARTNEY.