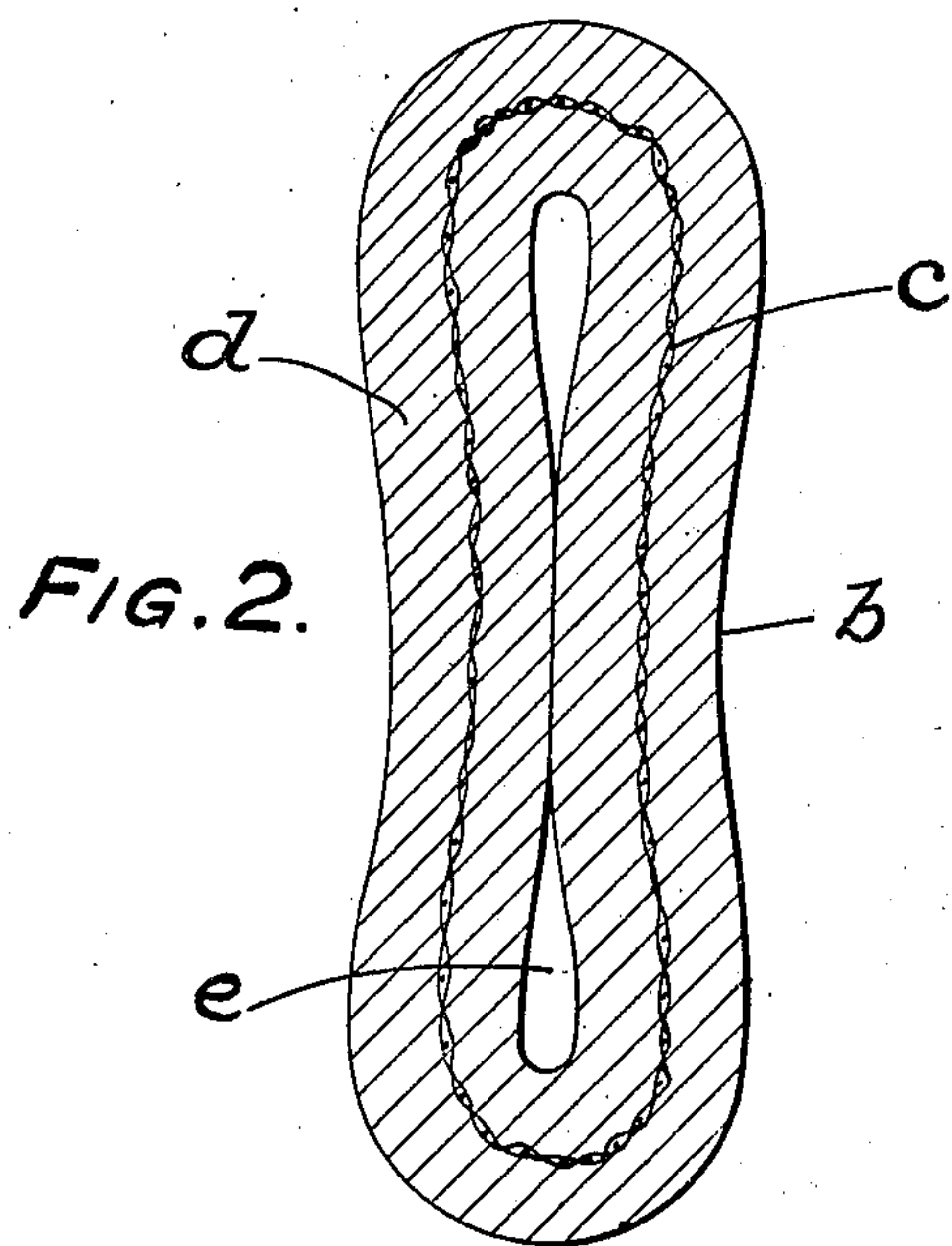
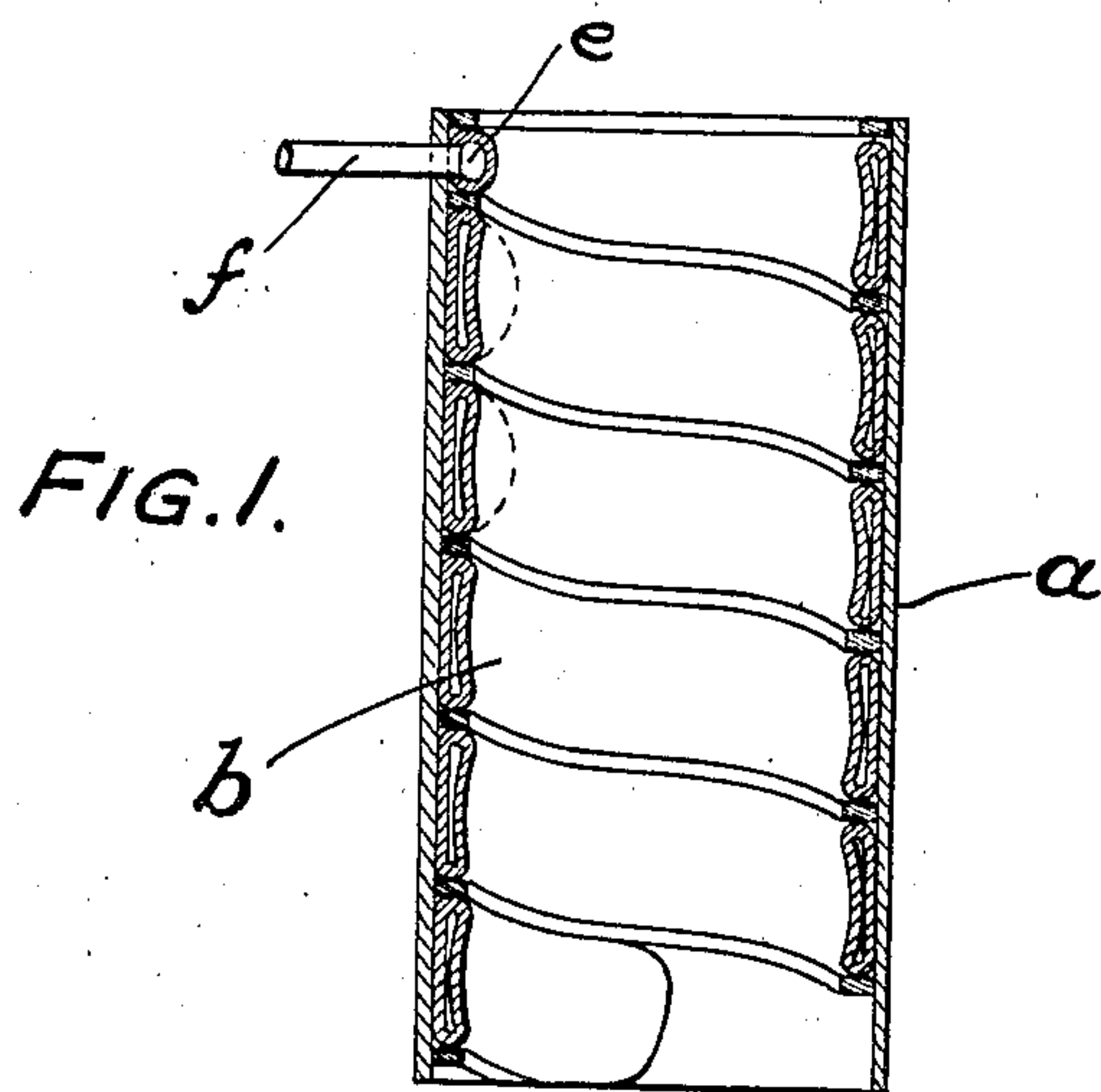


T. E. WAWRINSKY & H. F. ALBIHN.
MILKING MACHINE.

APPLICATION FILED MAR. 20, 1909.

948,360.

Patented Feb. 8, 1910.



WITNESSES:

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MILKING-MACHINE.

948,360.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed March 20, 1909. Serial No. 484,640½.

To all whom it may concern:

Be it known that we, THURE ERNFRID WAWRINSKY and HARRY FREDRIK ALBIHN, subjects of the King of Sweden, residing at
5 Stockholm, Sweden, have invented a new and useful Improvement in Milking-Machines; and we hereby declare the following to be a full, clear, and exact description of the same, due reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improved tube used in withdrawing the milk from the milking organs. In such milking organs, the
15 teats are operated by means of the intermittent conducting of a pressure medium (compressed air) into one or several tubes or pipes surrounding the teat. These are preferably made in the form of a ribbon
20 which by the introduction of the air under pressure are blown up to circular or elliptical sections in order to contract again to the shape of a ribbon at the evacuation.

It is important that the material of which
25 the tubes are made be at the same time thin and strong. The material should be such as not to permit any, or at least a very slight, expansion beyond the natural circular section of the tubes or in other words,
30 that no expansion of the material itself of the tubes may ensue, no matter how much the inner pressure may be raised within certain limits determined by the strength of the material. A tube of caoutchouc only
35 cannot serve this purpose, because it expands irregularly owing to varying thickness of the material and unequalness in the same, as soon as the inner pressure has grown so much that the tube expands beyond its normal dimensions. At those
40 points, where the material is thinnest, there will easily be blisters and the material loses quickly its elasticity in these places and breaks.

Our improved pipe or tube is made either
45 of a textile material; for instance hemp, linen, cotton, silk or the like, which in a suitable manner has been made air-tight, for instance by impregnation with varnish,
50 liquid caoutchouc or another suitable material, or it may substantially consist of caoutchouc with an insertion of a textile material.

We have found that silk, especially of that
55 kind which is used in balloons, and which is

made air-tight by impregnation or by coating one or both sides with a suitable material, is especially suitable for the manufacture of the inflatable tubes or pipes in question. In order to render this material
60 stronger and closer against the inner pressure, it may be redoubled or multiplied.

This improved tube will well answer the requirement.

The best manner of forming this tube is
65 as follows: A piece of balloon-silk corresponding to the dimensions of the desired tube is coated with a suitable binding substance, for instance a solution of caoutchouc, and rolled up in two or several layers, for
70 instance on a wooden roller. After having been pulled off the wooden roller and dried, the stiff tube, composed in this manner, is flattened and is then ready to be inserted in the milking organ, the ends of the stiff tube
75 having been joined together and the necessary air-pipe having been connected thereto.

We will now describe the embodiment of our invention illustrated in the accompanying drawings, in which—
80

Figure 1 is a longitudinal section of a milking organ with an embodiment of our improved tube applied thereto. Fig. 2 is a magnified cross section of an embodiment of our improved tube.
85

a is the milking organ, *b* the tube having silk portion *c* coated with the caoutchouc *d*.
e is the orifice of the tube.

f is the pipe leading to operating apparatus not shown.
90

Having now fully described our invention, what we claim and desire to protect by Letters Patent is:

1. Tubes or pipes for the milking-organ of a milking machine working with pressure
95 air, comprising a ribbon of an inelastic textile material, which is impregnated with a relatively thin and tight layer of a substance rendering it air-tight.

2. Tubes or pipes for the milking-organ of
100 a milking machine working with pressure air, comprising a ribbon of silk fabric, which is impregnated with a substance rendering it air-tight and coated with a suitable tightening and binding substance, said ribbon
105 being rolled up into a plurality of layers and flattened to the shape of a ribbon closed at its ends.

3. Tubes or pipes for the milking-organ of
110 a milking machine working with pressure

air, comprising a ribbon of an inelastic textile material, which is impregnated with a relatively thin and tight layer of a substance rendering it air-tight, and provided with a
5 relatively thick layer of caoutchouc, said caoutchouc forming the principal material of the tube, while the textile material constitutes the lining thereof.

4. Tubes or pipes for the milking-organ of
10 a milking machine working with pressure air, comprising a ribbon of silk fabric, which

is impregnated with a substance rendering it air-tight and coated with a suitable tightening and binding substance.

In testimony, that we claim the foregoing 15
as our invention, we have signed our names in presence of two subscribing witnesses.

THURE ERNFRID WAWRINSKY.

HARRY FREDRIK ALBIHN.

Witnesses:

CARL FRIBERG,

GUST. A. ALSON.