This invention relates to certain novel improvements in releasing apparatuses for childbirths.

The main object of the invention is to provide a device in the shape of a suction cup to be placed on the forehead of the suction cup during birth, and effectively adhere to the head to be subjected to a drawing force.

Another object of the invention is to provide a device of the said kind which is possible to adhere to the scalp of the head in spite of the sliding mucous fluid on the scalp during birth.

Other objects will appear hereinafter.

The invention consists in a suction cup with a draw grip and a suction mouth with a ring-shaped foot of elastic material, the mouth opening of the cup being provided with a perforated strainerlike cover as a support and suction distributor for the sliding scalp of the head.

In the accompanying drawings:

Figure 1 is a vertical sectional view of the suction cup in one embodiment, and

Figures 2 to 5 vertical sectional views of the foot of the suction cup in four modifications.

Figure 6 is a vertical section view of the top of the suction cup in another embodiment, and

Figure 7 a similar sectional view in a further embodiment of the suction cup.

The suction cup is of stiff material such as metal, hard rubber, plastics or such like and of preferably half-spherical shape has a foot 2 of elastic material as soft rubber or the like surrounding the suction mouth 3. This foot may belong to a rubber cup 4 and consists of the outer surface of the suction cup 1 and in this way securing the rubber foot to the suction cup.

The ring edge 5 of the suction cup around the mouth is resting on the rubber foot in the corner between the foot and the rubber cup wall therethrough transmitting the atmospheric pressure acting upon the suction cup to the corresponding ring surface in said corner of the foot. The foot has in this embodiment the shape of a ring flange 6 extending inwards and narrowing the mouth in reference to the cup edge 8. Above the mouth there is freely inserted a perforated strainerlike cover 7 lying like a more shallow cup within the suction cup 1 and being prevented by the foot from falling out.

At the top of the suction cup there is a tube stud 8 for a vacuum pump to be inserted, and a vacuum pump not shown. A chain 10 is drawn through the hose serving as a draw grip.

In use the suction cup is applied to the protruding forehead of the child's head during the birth. When the vacuum pump sucks the air out of the cup the atmospheric pressure on the suction cup will press the foot of the head against the head and the loose scalp 11 will slide into the suction cup and press against the strainer. On account of the narrowed suction mouth the scalp will increase somewhat in width within the cuplike strainer and add to the secure holding of the scalp. The air pressure on the outer ring surface of the flange in combination with the scalp to the suction cup will securely hold the foot against the head, when the suction cup is drawn forwards by means of the draw grip to release the child, as the pressing of the bulbous scalp portion against the strainer is of eminent help to prevent the cup from sliding off its place.

The elastic foot of the suction cup may be modified in several ways provided that the air pressure is concentrated on the said ring portion surface of the foot with enough force to hold on in spite of the mucous fluid. In Fig. 2 the foot 13 is widened outwards, and if the cup of the rubber 4. The execution of the foot 15 in Fig. 3 is a development thereof as the foot here is widened also outwards. Fig. 4 shows a foot 15 in a sectional view and is by channels 17 in communication with the suction room of the cup so that the foot also serves as a sucker. The foot 18 in Fig. 5 is a development of the foot in Fig. 1 as being provided with an inwards as well as outwards extending flange. In the embodiments of the Figures 3, 4 and 5 the foot narrows the mouth of the suction cup in the same way as in Fig. 1, so that the scalps having entered the strainer is able to widen the air-tight seal which itself is of importance for preventing the slipping off of the scalp.

In the embodiment of Fig. 6 the suction cup 18 differs from the suction cup of Fig. 1 only in reference to the connection construction at the top of the cup. A tube 19 of stiff material as metal, hard rubber or such like is used instead of the previous brass, and the said tube itself is able to serve as a draw grip. As it is necessary to permit the suction cup different inclinations a ball bearing is used for the tube connection. The tube is screwed into a thoroughly bored hole in the ball 20, and a flanged-out portion 21 of the cup wall in a top opening serves as a bearing. A disk 22 secured by a nut 23 maintains the ball in position, and a rubber ring 24 between the disk and the bearing serves as a gas tightness.

As shown in Fig. 7 it is not necessary to combine the draw grip with the suction hose or suction tube. In this embodiment the draw grip 25, preferably consisting of a line or wire, and the suction hose 26 are separately attached to the suction cup.

The strainer 7 may if desired be attached to the suction cup, but the free insertion of the strainer described above will facilitate the cleaning and disinfection within the suction cup.

The foot of soft rubber prevents the scalp from being injured which scalp when entering the strainer will slide along the lithely yielding inner foot surface.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

Having thus described our invention what we claim as new and desire to protect by Letters Patent is:

1. A releasing apparatus for childbirth consisting of a suction cup with connection means for an air discharger and provided with a draw grip and a suction mouth with a ring-shaped foot of elastic material, the mouth opening being provided with a perforated strainerlike cover as a support and a suction distributor for the scalp of the child's head.

2. A releasing apparatus for childbirth consisting of a suction cup with connection means for an air discharger and provided with a draw grip and a suction mouth with a ring-shaped foot of elastic material, the mouth opening being provided with a perforated strainerlike cover as a support and a suction distributor for the scalp of the child's head.

3. A releasing apparatus for childbirth consisting of a suction cup with connection means for an air discharger and provided with a draw grip and a suction mouth with a ring-shaped foot of elastic material, the mouth opening being provided with a perforated strainerlike cover as a support and a suction distributor for the scalp of the child's head, the strainerlike cover having the shape
of a more shallow cup within the suction cup, the suction mouth being narrowed in reference to the width of the strainerlike cover permitting a widening of the scalp inside of the mouth, the suction cup resting with a ring edge on a corresponding ring surface portion of the elastic foot, the foot being extended inwards from this ring surface portion to constitute the narrowed mouth opening.

4. A releasing apparatus for childbirth consisting of a suction cup with connection means for an air discharger and provided with a draw grip and a suction mouth with a ringshaped foot of elastic material, the mouth opening being provided with a perforated strainerlike cover as a support and a suction distributor for the scalp of the child’s head, the strainerlike cover having the shape of a more shallow cup within the suction cup, the suction mouth being narrowed in reference to the width of the strainerlike cover permitting a widening of the scalp inside of the mouth, the suction cup resting with a ring edge on a corresponding ring surface portion of the elastic foot, the foot being extended inwards from this ring surface portion to constitute the narrowed mouth opening, the connection means consisting of a tube of bendable preferably elastic material, the draw grip in the shape of a bendable string being drawn through the tube.

5. A releasing apparatus for childbirth consisting of a suction cup with connection means for an air discharger and provided with a draw grip and a suction mouth with a ringshaped foot of elastic material, the mouth opening being provided with a perforated strainerlike cover as a support and a suction distributor for the scalp of the child’s head, a tube constituting both the connection means and the draw grip.

6. A releasing apparatus for childbirth consisting of a suction cup with connection means for an air discharger and provided with a draw grip and a suction mouth with a ringshaped foot of elastic material, the mouth opening being provided with a perforated strainerlike cover as a support and a suction distributor for the scalp of the child’s head, the perforated strainerlike cover being freely inserted in the suction cup.

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