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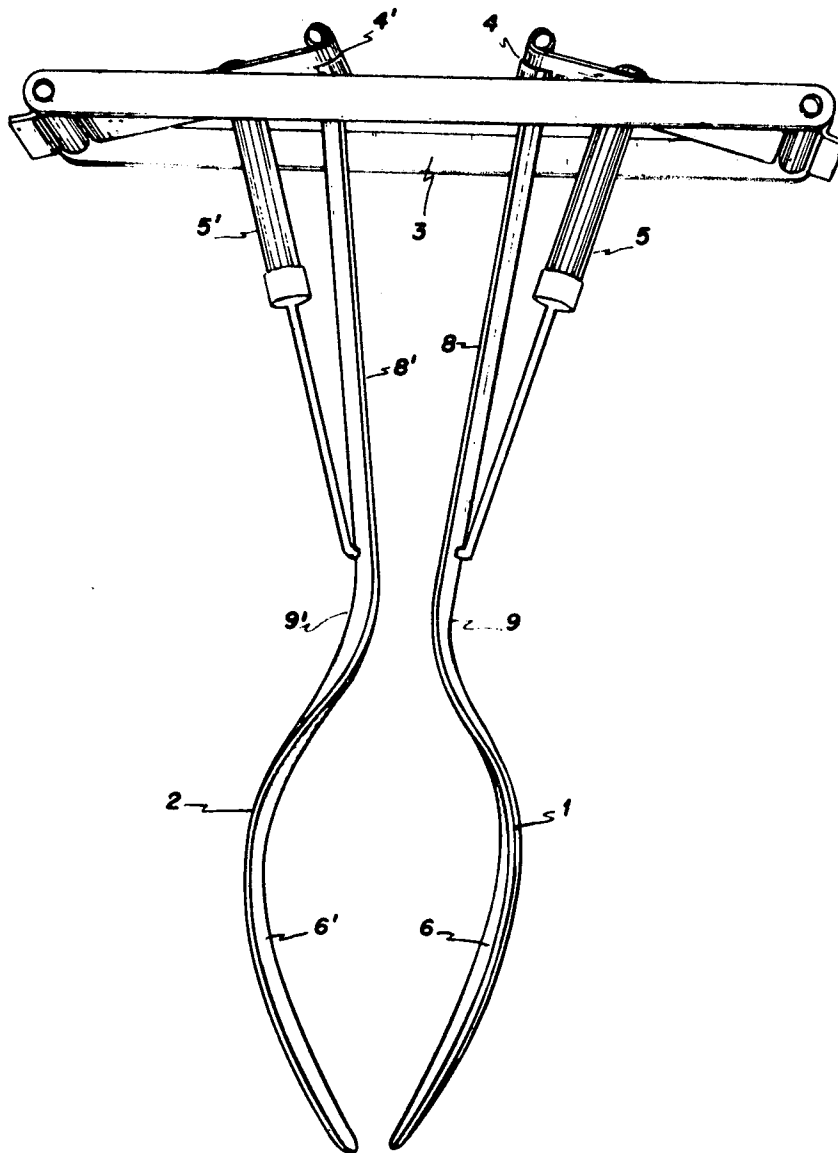
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3,605,748

OBSTETRICAL FORCEPS

Filed Nov. 21, 1969

3 Sheets-Sheet 1



**Fig. 1**

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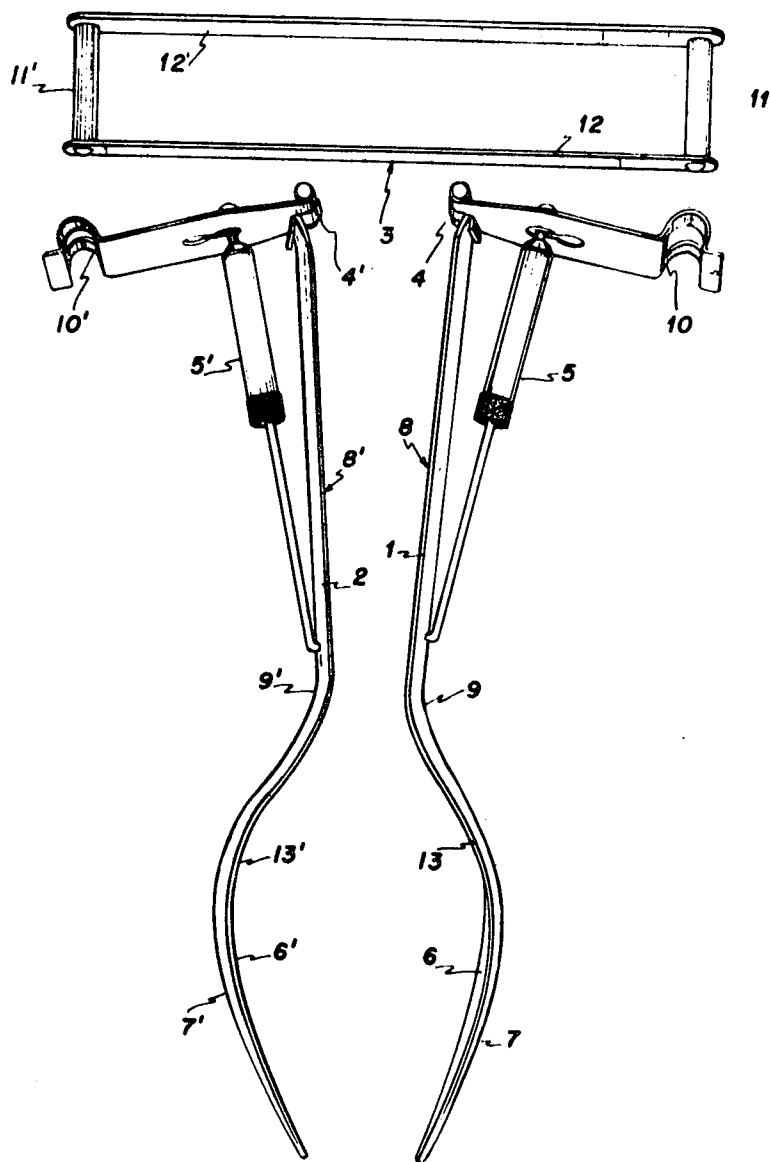


Fig. 2

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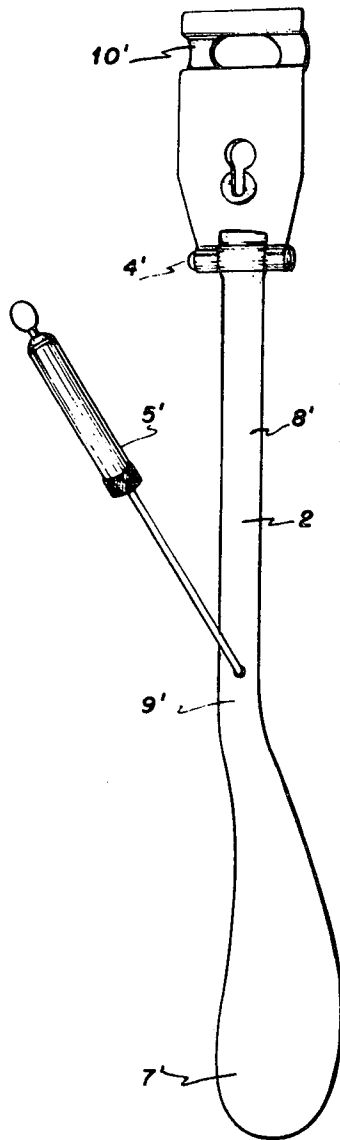
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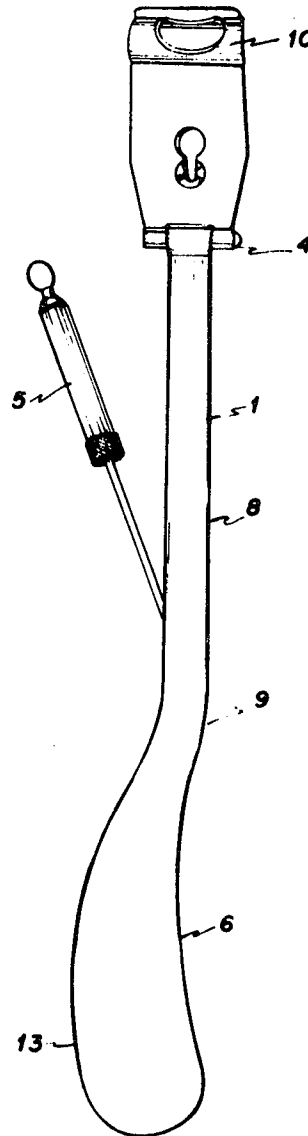
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**Fig. 3**



**Fig. 4**

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## OBSTETRICAL FORCEPS

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U.S. Cl. 128—323

9 Claims

## ABSTRACT OF THE DISCLOSURE

The specification discloses an improved obstetrical forceps in which a pair of limbs have scoops formed on one end and extend to a frame at the other end which joins the limbs together. The limbs are pivotally connected to the frame and each limb is formed of two parts hinged together and supported at about right angles to each other by a spring device which limits the force to be exerted on the forceps.

This invention relates to an improved obstetrics forceps and more particularly to a guiding obstetrics forceps.

For more than 200 years, obstetrics forceps have been employed when necessary, during parturition, to guide the infant being born along the birth canal and to assist in the movement thereof along the birth canal. A great variety of forceps have been designed for the purpose referred to but, heretofore, such forceps, in addition to being complicated and difficult of manipulation have frequently marked the infant's head, producing bruises and contusions, sometimes to a harmful degree.

The forceps of the present invention are formed mainly by three parts: a right limb, a left limb and a framework. Each of the limbs comprises two portions joined to each other by means of a hinge and extending at about right angles to each other and having a measuring or limiting gauge or device interposed therebetween. The first portion constitutes a relatively wide scoop free of openings and with a cephalic curvature adapted to the head shape, and also with a low-accentuated pelvic curvature, to suit the pelvic channel of the mother. The scoop has an almost straight shank or pedicle extending therefrom and joined to the scoop portion by a small perineal curvature region, adapted to suit the perineum of a woman. The second portion of the limb is joined at one end to the end of the shank, or pedicle, at the end thereof opposite the scoop by means of a hinge. At the outer end of the second portion is a link for connection of the outer end of the hinge to a framework.

The pressure measuring or limiting gauge, or device, is interposed between the first and second portions of each limb and effects the measurement and control of the stress employed during use of the forceps, and can be designed and constructed in several different manners. This pressure gauge, as employed in the present disclosure, comprises a coil spring inside a stainless steel tube, capable of measuring tractions of from about 5 kilograms up to about 30 kilograms.

The framework referred to is formed by two spaced parallel tubes, preferably, made from stainless steel or any other suitable strong, corrosion resistant, easily sanitized material. Each tube is about 1.27 centimeters in diameter, about 5.0 centimeters long and the tubes are joined to each other by strips of stainless steel, or other suitable material. The strips are about 25 centimeters long and about 1.5 centimeters wide. The entire forceps are preferably constructed of stainless steel, but it will be obvious that, as above stated, other materials are also suitable for the manufacture of the forceps.

An object of the present invention is to provide an

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obstetrics forceps of the guiding type which is easy to manipulate, inexpensive to manufacture and which avoids the drawbacks of such forceps as heretofore manufactured.

5 A further object of the present invention is the provision of an obstetrics forceps of the guiding type, having limb portions joined to each other by means of a hinge, and which limb portions are articulated to each other by means of a metal framework.

10 An additional object of the present invention is the provision of a forceps of the type referred to, wherein both limb portions are almost straight and are not provided with individual handles for pulling on the forceps.

15 Still another object of the present invention is to provide a forceps referred to above, wherein the limb portions are made of stainless steel and are cold trimmed and coined.

20 Another object of the present invention is to provide a forceps provided with a pressure measuring or limiting gauge device on each limb portion, and wherein each limb portion terminates in wide scoops free of windows or apertures.

Still a further object of the present invention is the provision of an obstetrics forceps so constructed as to eliminate special mechanism or devices for catching the infant when it emerges from the birth canal.

25 A further object of the invention is the provision of an obstetrical forceps which permits freedom of the infant's head inside the mother's pelvis to expedite the descent.

30 Yet another object of the invention is the provision of an obstetrical forceps so designed that the points of maximum pressure thereof on the infant bear on large areas of the face, and having substantially straight limb portions which allow for the traction at the axis of the pelvic channel.

35 Still another object of the invention is the provision of an obstetrical forceps having wide and windowless scoops so as to distribute the traction stress onto a greater surface and prevent harmful compression on the head of the infant.

40 Still another object of the invention is the provision of a forceps that will allow for a control of the stress employed during use of the forceps.

45 These and other objects and advantages of the present invention will become more apparent upon reference to the following detailed description, taken together with the accompanying drawings, in which:

50 FIG. 1 is a front perspective view of the forceps of this invention, in an assembled condition;

FIG. 2 is a front perspective view of the forceps of FIG. 1, in an exploded condition;

FIG. 3 is a side perspective view of the outer face of a limb of the said forceps; and

55 FIG. 4 is a side perspective view of the inner face of a limb of a forceps according to the present invention.

Referring now to the drawings and more particularly to FIGS. 1 and 2, it will be observed that the device of the present invention is constituted by three main portions: a right-hand limb 1, a left-hand limb 2 and a framework 3, to which said limbs are adapted for pivotal connection. Each limb has a longer part and a shorter part pivotally interconnected by means of hinges 4, 4', respectively.

60 Pressure gauge limiting or controlling devices 5, 5', respectively, are interposed therebetween between the parts of the limbs and support the limb parts at substantially a right angle. The limbs 1 and 2, when connected to framework 3, converge in an outward direction and are almost straight. The limbs are constructed from stainless steel, and are cold trimmed and coined.

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A first part of the said limb, remote from framework 3, form scoops 13, 13', said scoops being of wide dimensions and free of apertures or windows, and having a cephalic curvature 6, 6', adapted to suit the head shape of an infant. Each scoop at the outer end is formed with a pelvic curve 7, 7' of a small curvature to suit the pelvic channel of the mother, and at the other end is joined to an almost straight pedicle, or shank, 8, 8', respectively. Extending between the shanks and the respective scoops, there are the small regions 9, 9', with perineal curvature adapted to suit the perineum of a woman. The second parts of the limbs are joined to the respective first parts, one by means of the above recited hinges 4, 4', and at the outer ends, the second parts thereof carry links 10, 10' for engagement with the framework 3.

The devices 5, 5' are interposed between the first and second parts of the respective limbs and serve for the measurement and control of the stress employed during use of the forceps, and can be designed and constructed in several different forms.

The said framework 3 is formed by two tubes, 11, 11', made of stainless steel, or any other suitable material, each about 1.72 centimeters in diameter and about 5.0 centimeters long, and joined to each other by means of strips of stainless steel 12, 12', about 25 centimeters long and about 1.5 centimeters wide. Although approximate sizes have been stated for the parts of the forceps, it will be apparent that the same can be otherwise dimensioned, as desired and according to the convenience.

The independence of limbs 1 and 2 allows freedom of movement for an infant's head inside the mother's pelvis, thus permitting lateral movement facilitating the descent of the infant along the birth canal.

The scoops of the limbs of the forceps are so formed as to insure that the points of maximum pressure or stress be on large areas of the infant's face and head, while the straight shanks allow for the traction at the axis of the pelvic channel. Further, since there is no mechanism for tightening the limbs on each other, there is no compression stress bearing on the infant's head above that allowed by the devices 5, 5'.

It will be apparent that the forceps limbs can be inserted into and removed from the birth canal separately and, after insertion, can be connected to the framework. During manipulation of the forceps, the ends of framework 3, at the tubes 11, 11', are grasped by the hands and the thumbs can bear on the tubes via the apertures shown in link portions 10, 10' to prevent disengagement of the limbs from the framework.

Although a preferred embodiment of the instant invention has been disclosed, it will be clearly apparent to those skilled in the art, that variations and modifications thereof could be made without departing from the scope of the appended claims.

What is claimed is:

1. An obstetrical forceps for use during parturition and comprising: first and second limb portions and a framework, each limb portion comprising an elongated first part having a wide and aperture-free scoop region at one end and a substantially straight shank extending from the scoop region toward the other end of the said

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part, each limb portion also comprising a second part pivotally connected to said other end of the respective first part, a device connecting each first part to the respective second part and supporting said parts substantially at right angles to each other and including spring means resisting movement of said parts relative to each other about the pivotal connection therebetween, said second parts extending away from each other when said first parts are disposed in adjacent relation and with the said scoop portions facing each other to define a head receiving region, said framework extending transversely to said elongated parts at said other end thereof, and means pivotally connecting said frame to the outer ends of said second parts of said limbs.

2. An obstetrical forceps according to claim 1, in which each said scoop portion is formed substantially to a cephalic curvature so as to engage a large area of the head with the regions thereof nearest said one end of the respective first part being formed to a pelvic curve having a smaller curvature than said cephalic curvature.

3. An obstetrical forceps according to claim 2, in which each scoop portion is joined to the respective shank by a region having a small curvature adapted to the perineum.

4. An obstetrical forceps according to claim 1, in which said framework comprises spaced parallel tubes located at opposite ends of the framework and rail means extending between and connected to the tubes.

5. An obstetrical forceps according to claim 1, in which said first parts are adapted to converge toward the said one ends thereof when said second parts are connected to said framework.

6. An obstetrical forceps according to claim 5, in which the outer ends of said second parts are formed with arcuate recesses therein facing said one ends of said first parts and said framework comprises bar-like end parts detachably receivable in said recesses.

7. An obstetrical forceps according to claim 6, in which at least said first parts are stainless steel and are cold trimmed and coined.

8. An obstetrical forceps according to claim 1, in which said device is detachable from at least one of said first and second parts.

9. An obstetrical forceps according to claim 1, in which each said first part is curved in cross section from end to end and is concave on the side facing away from the side toward which said second part extends.

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U.S. Cl. X.R.

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