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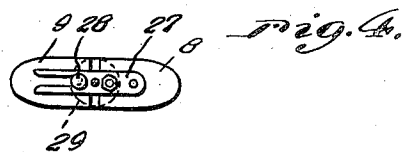
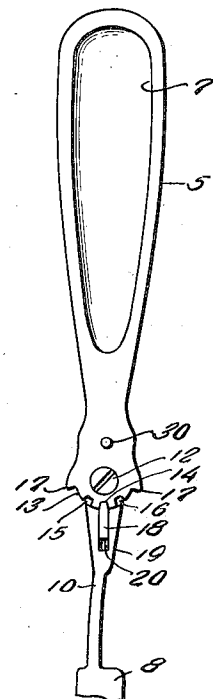
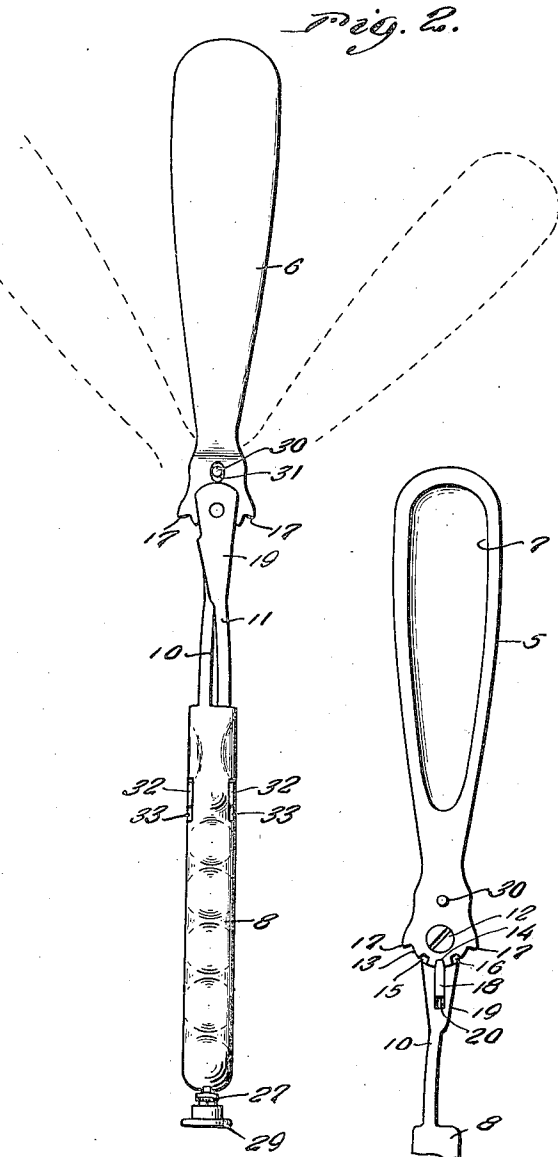
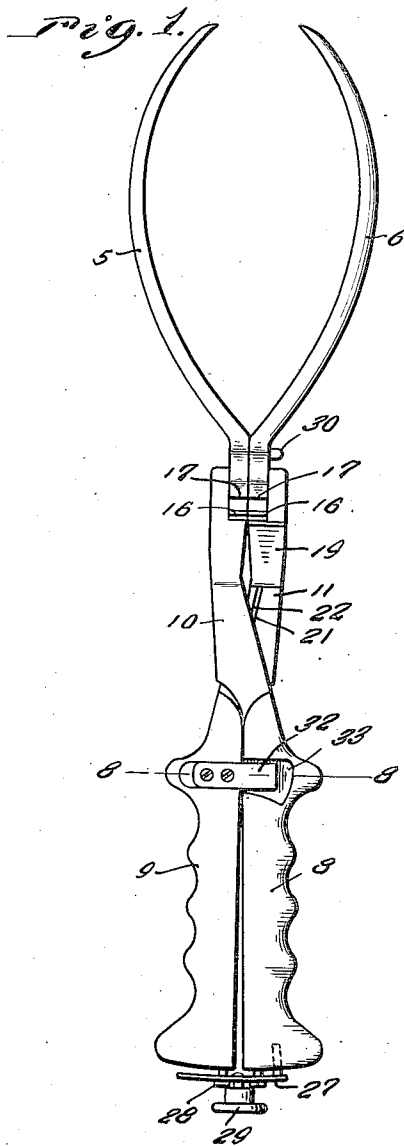
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2,034,299

OBSTETRICAL FORCEPS

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2 Sheets-Sheet 1



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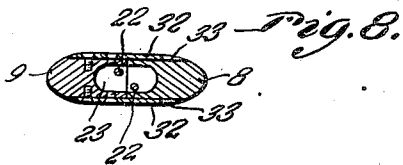
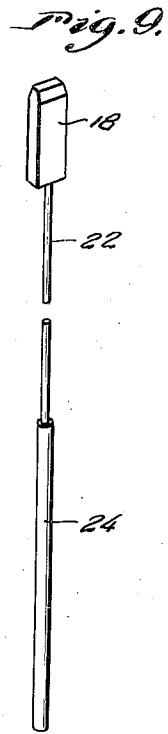
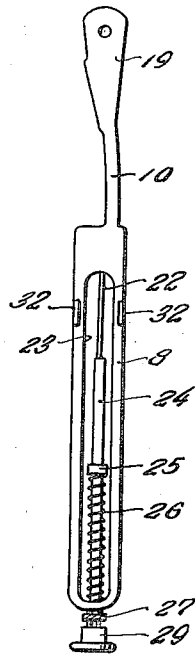
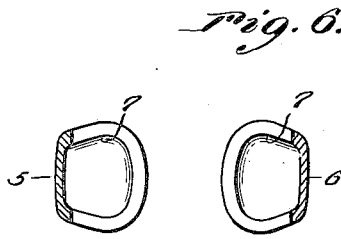
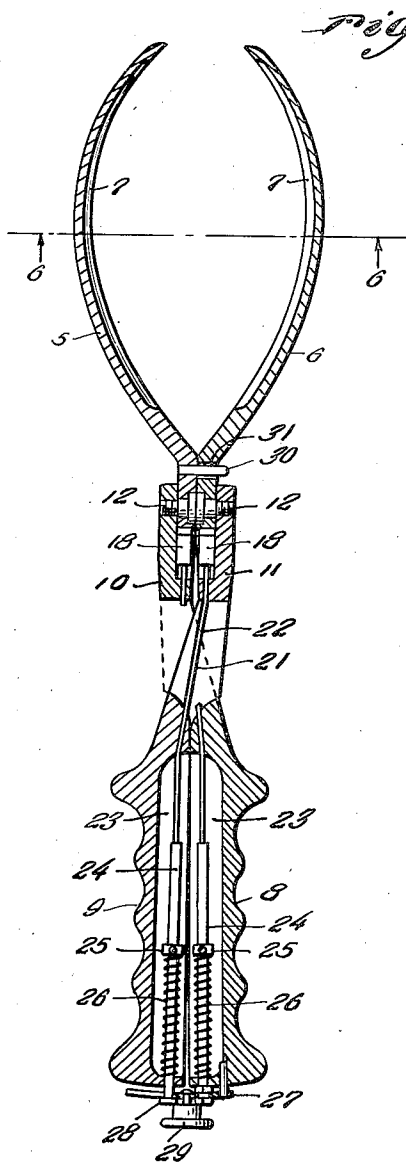
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OBSTETRICAL FORCEPS

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# UNITED STATES PATENT OFFICE

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## OBSTETRICAL FORCEPS

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Application April 26, 1935, Serial No. 18,446

8 Claims. (Cl. 128—323)

This invention relates to new and useful improvements in forceps such as are employed in the practice of obstetrics. At present obstetricians have available for their use, forceps of the classical curved type (having blades curved in conformity with the pelvic tract); the Kielland forceps which can be used only by the most highly skilled practitioners, and thirdly various forms of traction devices for use with both types of instruments to facilitate extraction of the head during a delivering operation. The traction devices are intended to facilitate movement of the blades in a direction following the natural curvature of the pelvic tract.

However, traction devices have been found in the profession to be very unwieldy in use, and are only used in isolated cases, and in no cases by some obstetricians, when it is their belief that their personal skill offsets any beneficial attributes of such an appliance in their work.

The Kielland forceps are of the type having blades substantially on the same plane as their handles. In other words, there is no classical curvature to the blades of this type of instrument. While the cephalic curve is present in the blades of the Kielland type, said curvature does not assist in any way in the insertion of the blade with the same facility as blades having the classical curves, and for this reason great care must be exercised in effecting the proper insertion of the blade to prevent perforation or injury to the uterus.

The conventional instrument with blades of the classical curve, and the Kielland forceps have merit in certain independent steps required incident to positioning of the birth object's head with its occiput frontally posed.

Now as before stated, the Kielland instrument being substantially straight in elongation, requires considerable skill to be exercised in inserting the blades thereof, and when the head of the birth object has been rotated to the proper position so that the occiput is at the front of the pelvis, the handles of the forceps are depending in only a slightly better position than when the classical type of forceps are employed and have become inverted as a result of this act of rotating the head. In this connection, it is the purpose of the Kielland type forceps to eliminate the step of removing the blades and reinserting and resetting the same on the baby's head, as must be done with the classical type of forceps to conform with the natural curvature of the vaginal tract when extraction is taking place.

Therefore, it can be seen that the manipula-

tion of the straight Kielland instrument in the curved passageway of the pelvis has a certain degree of adversity which if not guarded carefully is apt to result in serious injury to the patient, while on the other hand the necessity of removing the curved type forceps after properly positioning the baby's head, frequently results in a slippage or shifting of the head in the uterus before the classical blades can be righted and reinserted, this putting the patient to considerable discomfort and requiring the obstetrician to exert extreme care and diligence to re-locate and retrieve the head, which may be in an entirely different posture.

Consolidation of the various steps in the complete instrument delivery operation, in one continuous transaction, without removal of the forceps from the birth object's head is the paramount object of the present invention.

Another important object of the invention is to provide an obstetric instrument with means whereby instruments of the classical curvature type can be adjusted from inverted to righted position without disengaging the blades from the birth object's head.

Still another object of importance is to provide obstetrical forceps with adjusting means wherein the blades can be adjusted with respect to the handles thereof to afford an instrument having the well known classical curve, or to a position extending on the same plane as the handle to permit use in accordance with the adaptability of the Kielland forceps, and furthermore permitting adjustment when the occiput is properly positioned, between the blades and the handles, as when the curvature of the instrument is adverse to the curvature of the pelvic passageway, so as to restore the instrument to an inverse curvature conforming with the curvature of the said pelvic passageway.

A further object of the invention is to provide obstetrical forceps with blades having concavities on the inner sides thereof instead of fenestrations which frequently cause trouble in delivery because of insufficient contact surface, or else they catch over the ischial spines and result in injury.

Still a further object of the invention is to afford an obstetrical instrument which will facilitate cases of occiput posterior and deep transverse arrest.

These and various other important objects of the invention will become apparent to the reader of the following specification.

In the drawings:

55

Figure 1 represents a top plan view of the instrument.

Figure 2 represents a side elevational view of the instrument.

5 Figure 3 represents a fragmentary inside elevational view of one of the blades with the shank thereof.

Figure 4 represents an end elevational view of the butt end of the instrument.

10 Figure 5 represents a longitudinal sectional view through the forceps.

Figure 6 represents a transverse sectional view through the blades taken substantially on line 6-6 of Figure 5.

15 Figure 7 represents an inside elevational view of one of the handles with the shank thereof.

Figure 8 represents a cross sectional view taken substantially on line 8-8 of Figure 1.

20 Figure 9 represents a perspective view of one of the pawls and the operating line therefor.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numerals 5-6 represent the obstetrical blades of the forcep, which are provided on their opposed sides with depressions or concavities 7. These 25 depressions or concavities may simply be indentations in the blades extending longitudinally thereof, either in the form of a single pocket, or any arrangement of corrugations or rib formations.

30 The object here is to eliminate recesses through the blades which sometimes cause trouble in use.

Numerals 8-9 represent the handles for the blades 5-6 respectively. These handles 8-9 35 are provided with shanks 10-11, each of which is provided at its outer end with a threaded opening for receiving the corresponding screw 12 which pivotally connects the blades 5 or 6 thereto.

40 The pivotal end of each of the blades 5-6 is provided with a semi-circular curved portion 13 having a recess 14 at its mid-point and recesses 15-16 at opposite sides of this recess 14, that is about forty-five degrees removed at each side of the recess 14. Beyond the recesses 13-15 are 45 shoulders 17 against which the shanks 10-11 can abut when the pawls 18 are engaged in one of the lateral notches 15 or 16.

50 It will be observed that the blade ends of the shanks 10-11 are slightly enlarged as at 19 and recessed as at 20 to receive the corresponding pawls 18.

55 As is clearly shown in Figures 1 and 5, each of the shanks 10-11 is grooved as at 21, and said grooves merge with bores which lead in the corresponding hollow handle 8 or 9 and also into the corresponding pocket 20 of the shank. In each of these grooves 21 extends a flexible wire member 22 which at its blade end connects to the corresponding pawl 18 and at its handle end, 60 tends into the cavity 23 of the handle where it attaches to a rod 24 on which an adjustable set screw retained collar 25 is carried.

65 Each of these rods 24 extends through the butt end of the corresponding handle 8-9 and between this butt end of each of the handles and the collar 25 on the rod 24 is a spring 26 of the compression type. The spring 26 normally serves to maintain the pawls 18 urged into projected position into one of the notches 14, 15 or 16.

70 As is clearly shown in Figures 1 and 4, the handle 8 at its butt end has its rod 24 extending therethrough and at the outer end of this rod is attached a fork 27, which fork projects to the direction of the extending end of the complementary rod 24 and engages behind the head 28 75

thereof, so that when the fork 27 is pulled by its knob 29, bolt rods 24-24 are pulled simultaneously, thus retracting both pawls 18 at the same time.

To cause both blades 5-6 to act coordinately, 5 the blade 5 is provided with a pin 30 which loosely projects through an opening 31 in the shank end of the blade 6, as is very clearly shown in Figure 5.

The handle 9 is provided with a pair of laterally extending guide members 32-32 which engage into the transverse depressions 33 on the handle 8. These members 32 serve as guides for the handle.

15 In the use of this improved instrument, the blades 5-6 are adjusted either to the right or the left in Figure 2 to obtain a simulation of the classical curve found in most types of obstetrical forceps, with the exception of the Kielland type.

20 The two sections of the forceps are now disconnected and properly inserted to engage the head of the birth object, whether it be with the occiput posterior, or the occiput in deep transverse arrest, or in other positions, as the curved blade is most suitable in the majority of cases. 25 When the blades have been engaged and the sections of the instrument locked together as shown in Figure 1, the head can be moved to proper position and when rotation of the head is necessary, a pull on the knob 29 will permit the handle 30 to be adjusted with respect to the blades 5-6 so that they will be in substantial alignment as shown in Figure 2, in which position the instrument can be used in the capacity of the Kielland 35 forceps.

35 When the occiput of the birth object has been placed in the proper frontal position with respect to the pelvis and extraction is about to be performed, the handles 8-9 can be moved upwardly by pulling out on the knob 29 so as to restore the instrument to the classical curve type. 40 These operations all take place without removing the blades of the forceps from the head of the birth object.

45 While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed. 50

Having described the invention, what is claimed as new is:

1. In combination, an obstetrical instrument comprising a pair of blades, a handle for each of the blades and an adjustable connection between each of the blades and its corresponding handle, each of the adjustable means consisting of a pawl and ratchet connection between each of the blades and its corresponding handle, each of the said handles being provided with control means for actuating the pawl of its corresponding blade.

2. In combination, an obstetrical instrument comprising a pair of blades, a handle for each of the blades and an adjustable connection between each of the blades and its corresponding handle, each of the adjustable means consisting of a pawl and ratchet connection between each of the blades and its corresponding handle, spring means for projecting the said pawls and pull members extending to the butt end of the said handle, said pull members being provided with a single actuating member at the butt ends of the handle.

3. In combination, an obstetrical instrument 75

comprising a pair of blades, a handle for each of the blades and an adjustable connection between each of the blades and its corresponding handle, each of the adjustable means consisting of a pawl and ratchet connection between each of the blades and its corresponding handle, each of the said handles being provided with control means for actuating the pawl of its corresponding blade, said handles being hollow to receive the spring of the pawls.

4. In an obstetrical instrument including blades and handles therefor, an adjustable connection between the blades and the handle, said connection including means whereby the blades can be retained in substantial alinement with respect to the handles and further adjusted to extend obliquely in one direction or the other from said alined position to the classical divergence found in conventional classical curve type forceps.

5. In obstetrical forceps including blades and handles therefor, pin and recess adjusting means interposed between the blades and the handles thereof whereby the pin can be disposed into one of the recesses to hold the blades and handles adjusted with respect to each other to restore the instruments to a righted classical curvature when the instrument is actually in a substantially inverted position after certain steps in a

delivery operation, without removing the blades from operating position.

6. Forceps of the character described including blades and handles, adjustable joints between the blades and handles whereby the blades can be retained in substantially alined position with respect to the handles or swung to an oblique position, said joints including bolt and recess means for positively retaining said blades in alined or oblique position with respect to the handles.

7. Forceps of the character described including blades and handles, adjustable joints between the blades and handles whereby the blades can be retained in substantially alined position with respect to the handles or swung to an oblique position and positively retained in the latter position, and single operating means supported by the handles for controlling both joints simultaneously.

8. Forceps of the character described including blades and handles, adjustable joints between the blades and handles whereby the blades can be retained in substantially alined position with respect to the handles or swung to an oblique position and a detent for positively retaining the blades in the latter position, and means whereby the blades are caused to move together when the joints are broken.

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