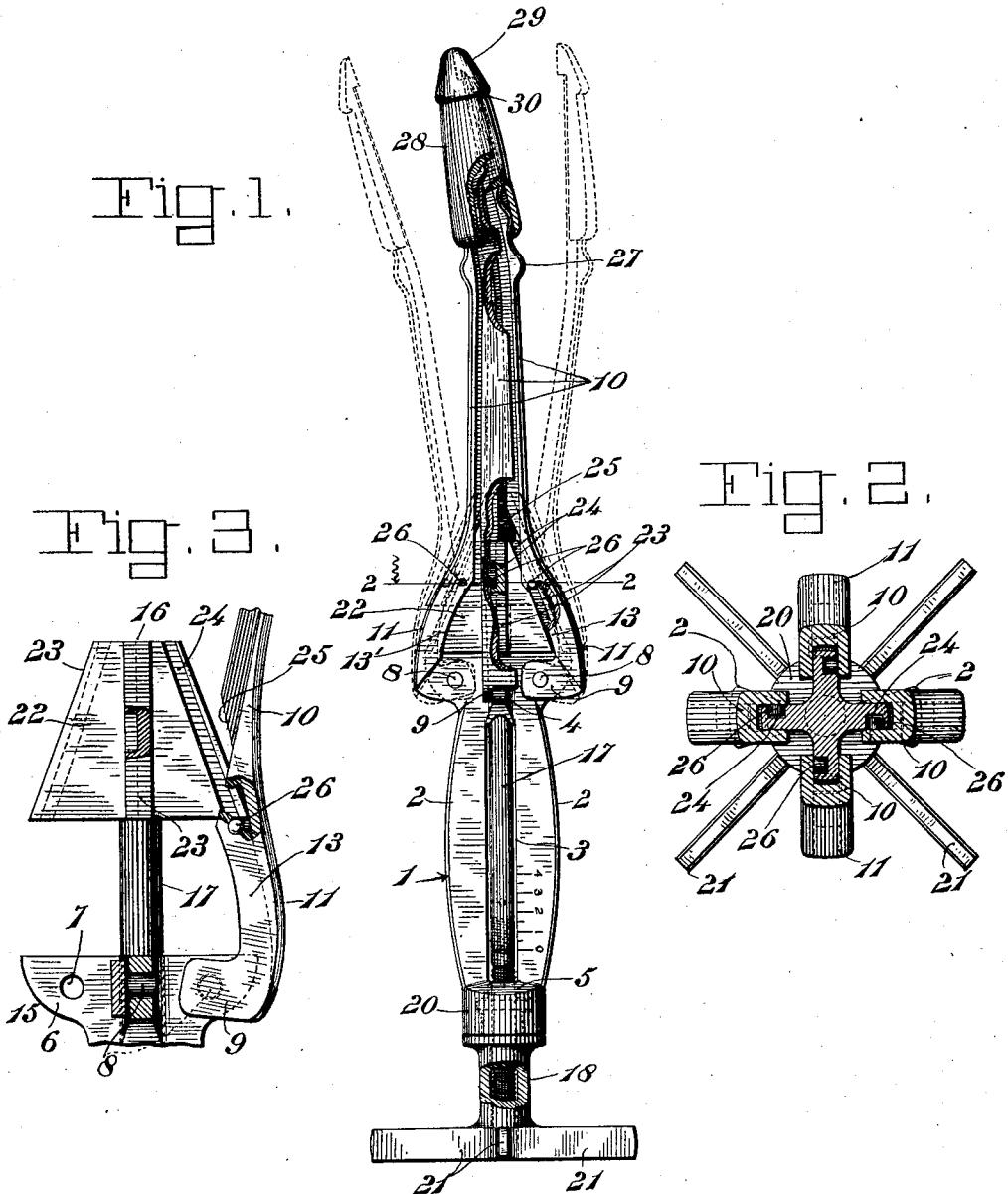


W. B. DEWEES.
DILATOR.
APPLICATION FILED MAR. 9, 1910.

997,907.

Patented July 11, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

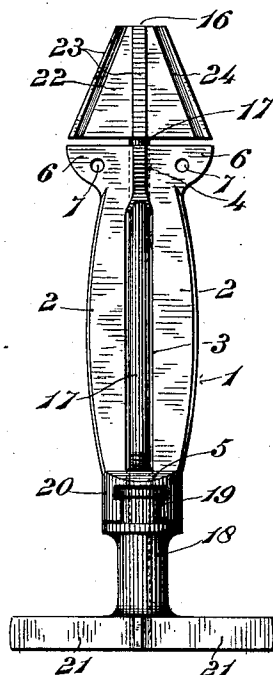


Fig. 5.

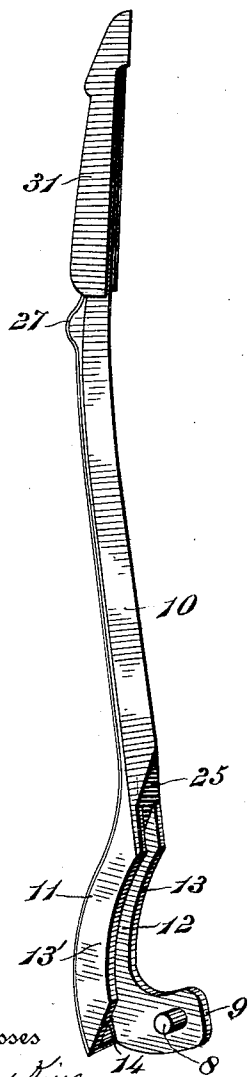
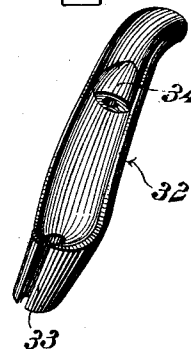


Fig. 6.



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UNITED STATES PATENT OFFICE.

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DILATOR.

997,907.

Specification of Letters Patent.

Patented July 11, 1911.

Application filed March 9, 1910. Serial No. 548,111.

To all whom it may concern:

Be it known that I, WILLIAM B. DEWEES, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Dilators, of which the following is a specification.

My invention relates to improvements in dilators.

One object of the invention is the provision of a dilator in the use of which a normal and even dilation of the cervix can be secured.

Another object of the invention is the provision of a dilator wherein the parts thereof may be readily and quickly disassociated to permit of a thorough cleansing and asepticizing of the dilator.

A still further object of the invention is the provision of a dilator which shall comprise comparatively few parts, which shall be strong durable and efficient, and which can be manufactured and sold at a comparatively low cost.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawing wherein:—

Figure 1 is a view in side elevation of a dilator constructed in accordance with my invention, parts of the dilator being in vertical section. Fig. 2 is a sectional view taken on the horizontal plane indicated by the line 2—2 of Fig. 1, looking in the direction indicated by the arrow. Fig. 3 is a view in side elevation. Fig. 4 is a view in side elevation of the body, blade operating member, stem, and adjusting nut of the dilator. Fig. 5 is a detail perspective view of one of the blades, and Fig. 6 is a detail perspective view of a modified tip.

1 designates the body of a dilator constructed in accordance with my invention. The body 1 is flat and elongated, and has longitudinally curved outer edges 2. The curved outer edges 2 permit the body 1 to be conveniently grasped in the hand. The body 1 is provided with a centrally located and longitudinally disposed opening 3 which communicates at its upper end with a bore 4 and at its lower end with a bore 5, said bores being shown in dotted lines in Figs. 1 and 4 of the drawings. The bore 4 extends through the upper end of the

body 1 and the bore 5 through the lower end of the body. At its upper end the body 1 is provided with a plurality of pivot lugs 6 which extend outwardly therefrom and which are equally spaced. The lugs 6 are provided with journal openings 7 for the reception of pins 8 which extend laterally from pivot extensions 9 formed upon the lower ends of blades 10. The lower ends 11 of the blades 10 are curved longitudinally and are provided on their inner sides with grooves 12. Each pivot extension 9 extends inwardly from the side wall 13 of each groove 12, and the other side walls 13' of the grooves terminate in upwardly and inwardly inclined lower edges 14. The openings 7 are arranged eccentrically with relation to the curved lower edges 15 of the lugs 6, and in view thereof the lugs are disposed in the grooves 12 when the blades 10 are in normal position; that is to say, the flanges 13 and 13' embrace the lugs 6 and prevent the withdrawal of the pins 8. In view of the eccentric relation between the openings 7 and the curved edges 15 of the lugs 6, and in view of the inclined edges 14 of the flanges 13', the lugs 6 are withdrawn from the grooves 12 when the blades 10 are thrown out of their normal positions; that is to say, the flanges 13 and 13' are thrown below the curved edges 15 of the lugs 6 permitting the withdrawal of the pins 8.

From the foregoing it should be apparent that while it is impossible for the blades to become casually detached from the body 1 they may be readily and quickly detached when it is desired to clean or asepticize the instrument.

The blades are under the control of a member 16 which is carried by the upper end of a rod 17. The rod 17 is slidably mounted in the bores 4 and 5 and extends below the lower end of the body 1. The lower portion of the rod 17 is screw-threaded for engagement with the screw threads of a nut 18 rotatably mounted upon the lower end of the body 1. The nut 18 is of pronounced elongated form and has its upper end reduced and formed to provide a swivel head 19. The lower end of the body 1 is enlarged and formed, as at 20, to receive the swivel head 19 of the nut 18. At its lower end the nut 18 is provided with a plurality of laterally projecting arms which form a hand wheel by which the nut may be rotated on the body 1. The rotation

of the nut 18 in one direction moves the controlling members 16 away from the upper end of the body 1, and the rotation of the nut in the reverse direction moves the member in the direction of the upper end of the body. The controlling member 16 is so constructed and connected to the blades 10 that its movement away from the upper end of the body 1 opens the blades and its movement in the direction of said upper end closes the blades. In its preferred embodiment, the controlling member 16 comprises a plurality of outwardly extending and equally spaced flanges 22 each of which is provided with an upwardly and inwardly inclined outer edge 23 and a groove 24. The grooves 24 are each located in one side of each flange 22 and are arranged in parallel relation to the inclined edges 23. The outer edges 23 of the flanges 22 are received by the grooves 12 and bear against the inclined bottom walls 25 of the grooves. The connection between the blades 10 and the operating member 16 is established by pins 26 which project from the inner sides of the flanges 13 and which enter the grooves 24.

When it is desired to remove the blades 10 from the body 1, the operating member 16 is moved away from the upper end of the body 1 a distance sufficient to remove the pins 26 from the grooves 24. After the pins 26 have been removed from the grooves 24, the blades 10 are swung downwardly upon the pins 8 until the flanges 13 and 13' clear the lugs 6, after which the blades are moved laterally with relation to the lugs.

The blades 10 have the proper longitudinal curvature, and the upper portions of their outer sides are serrated as at 27. Either that form of tip disclosed in Figs. 1 and 5 or that disclosed in Fig. 6, of the drawing, may be mounted upon the blades 10. The tip disclosed in Figs. 1 and 5 of the drawing, comprises an outwardly and inwardly inclined body 28 and a substantially cone-shaped head 29. The diameter of the base of the head 29 is greater than that of the outer end of the body 28 whereby to provide a shoulder 30 which prevents the accidental withdrawal of the tip from the cervix. Owing to the fact that the body 28 of the tip increases in diameter in the direction of its lower end, the cervix is gradually dilated during the insertion of the tip. By reference to Fig. 5 of the drawings it will be seen that the tip comprises a plurality of members 31 which are formed to provide the body 28 and head 29 when the blades 10 are closed. The tip members 31 are grooved longitudinally for the reception of the outer ends of the blades 10. In Fig. 6 of the drawing I have illustrated a member 32 which provides a tip having an upwardly and inwardly inclined body and an enlarged flaring head. The tip members 32

are provided with perforated lugs 33 and 34 for the reception of the outer ends of the blades 10.

Changes in the form, proportions and minor details of construction may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described the invention, what I claim as new is:—

1. A dilator comprising a body provided with lugs having curved under sides and openings arranged eccentrically with relation to the said curved sides, blades provided with pins entering the openings and with flanges embracing the lugs to prevent the accidental withdrawal of the pins, said flanges clearing the lugs when the blades are moved out of normal position, a blade controlling member having detachable engagement with the blades, and means by which the blade controlling member may be operated to open and close the blades.

2. A dilator comprising a body, blades pivotally and detachably secured to the body, means on the blades for engagement with the body when the blades are in normal position, said means preventing the accidental detachment of the blades from the body, and means by which the blades may be operated.

3. A dilator comprising a body provided with lugs, blades pivotally and detachably secured to the lugs, means on the blades engaging the lugs when the blades are in normal position, said means preventing the accidental detachment of the blades from the lugs, and means by which the blades may be operated.

4. A dilator comprising a body provided with lugs, blades pivotally and detachably secured to the lugs, said blades being provided on their inner sides with grooves adapted to receive the lugs when the blades are in normal position, when the lugs are in the grooves the blades being held from becoming accidentally detached from the lugs, and means by which the blades may be operated.

5. A dilator comprising a body, blades pivotally mounted upon the body, a blade controlling member including flanges having grooves in their sides, pins carried by the blades and entering the grooves, and means by which the controlling member may be operated.

6. A dilator comprising a body, blades pivotally mounted upon the body and having grooves on their inner sides, a blade controlling member including flanges having grooves in their sides, the flanges being received by the grooves, pins carried by the blades and entering the grooves, and means by which the controlling member may be operated.

7. A dilator comprising a body, a blade
controlling member including flanges hav-
ing inclined outer edges, blades pivotally
mounted upon the body and having in-
clined inner sides engaging the outer edges
of the flanges, a connection between each
blade and each flange, and means by which
the controlling member may be operated.

8. A dilator comprising a body, blades
pivotally mounted upon the body, a blade
controlling member including flanges hav-
ing inclined outer edges and grooves in their
sides, blades pivotally mounted upon the
body and having grooves receiving the
flanges, the bottom walls of the grooves be-
ing inclined and engaging the inclined edges
of the flanges, pins carried by the blades and

entering the grooves, and means by which
the controlling member may be operated.

9. A dilator comprising a body provided
with apertured lugs, blades provided at
their lower ends with inturned pivot exten-
sions, pins carried by the pivot extensions
and entering the apertures of the lugs,
means adapted to prevent the accidental
withdrawal of the pins from the apertures
of the lugs and means by which the blades
may be operated.

In testimony whereof I affix my signature
in presence of two witnesses.

WILLIAM B. DEWEES.

Witnesses:

LEON FEIST,

SYLVESTER V. FRANKLIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."