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R. D. DAVIS

2,661,735

SPECULUM

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Fig. 1

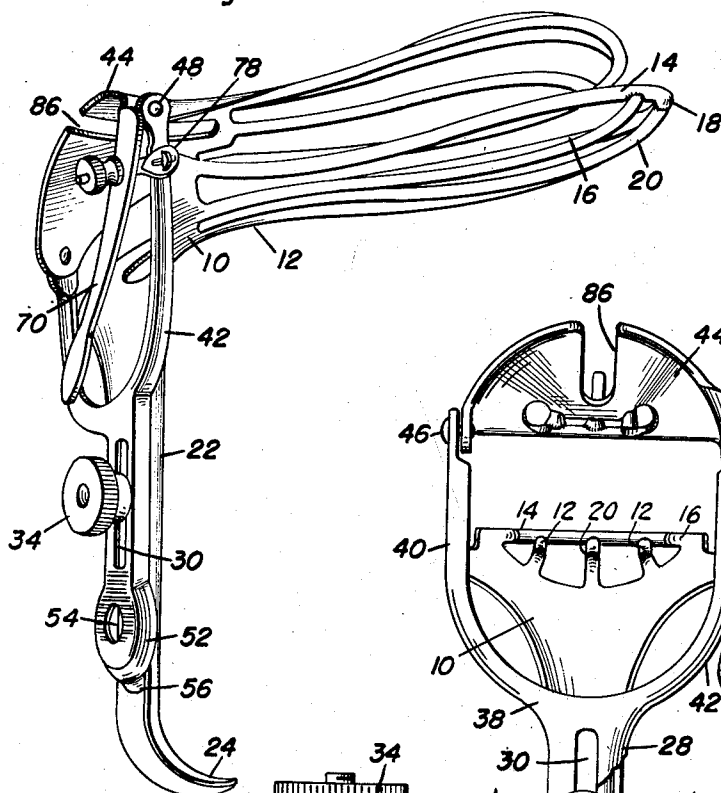


Fig. 2

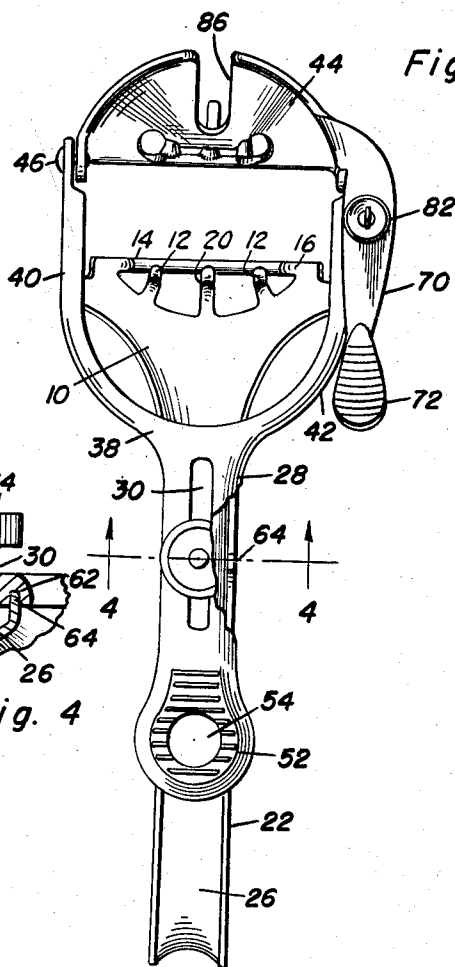


Fig. 3

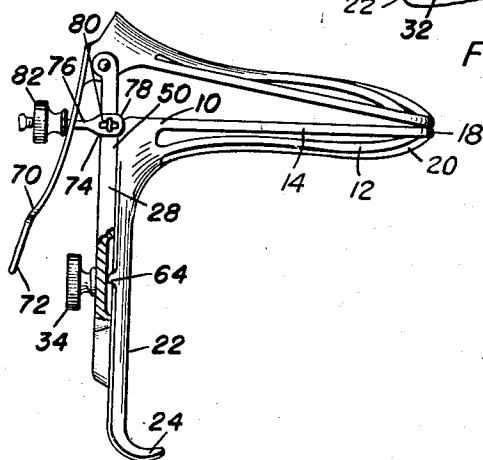
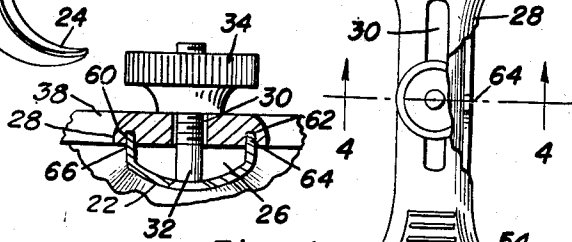


Fig. 4



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SPECULUM

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1 Claim. (Cl. 128—17)

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This invention relates to a speculum and particularly to an improved skeleton blade speculum with means for readily adjusting and maintaining the skeleton blades in proper relation while illuminating devices and other instruments are projected through the speculum into operating position therein.

In the utilization of speculums for providing inspection or operating room in the vagina, difficulty has heretofore been had because of the obscuring of the parts operated on by the speculum itself. Further difficulty has been had because of the difficulty of projecting light inside the speculum and avoiding the glare into the eyes of the operator. Further difficulty has been had because the adjustment of the speculum is liable to be erratic and wobbly so that the blades may not be maintained in proper alignment during operation.

A speculum according to the present invention avoids this difficulty by providing skeleton blades having substantially wire-like ribs forming the blades and having an improved handle and slide arrangement for adjusting the width of the mouth of the speculum and maintaining the slide and the handle in proper aligned position.

The speculum further provides a means for mounting an illuminating device in one of the blades of the speculum and provides sufficient room so that a reflector or shield may be mounted over the illuminating device to protect the eyes of the operator.

It is accordingly an object of the invention to provide an improved speculum.

It is a further object of the invention to provide a speculum having skeleton blades.

It is a further object of the invention to provide a speculum blade having means for mounting a light therein.

It is a further object of the invention to provide a speculum having an adjustable handle with means for maintaining the adjustments in alignment.

Other objects and many of the attendant advantages of the following invention will be apparent from the following detailed description taken in conjunction with the accompanying drawing in which:

Figure 1 is a perspective of a speculum according to the invention;

Figure 2 is a top plan view of the speculum in open position;

Figure 3 is a side elevation of the speculum in closed position; and

Figure 4 is a cross-section taken substantially

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on the plane indicated by the line 4—4 of Figure 2 and showing the improved guide structure for the speculum.

In the exemplary embodiment of the invention, the speculum blade comprises a base 10 formed of relatively thin sheet metal material and having the major portion of the blades cut into fingers or ribs 12 which are formed or worked into rod or wire-like shape so that the speculum is substantially skeleton bladed. The outside ribs of each of the blades is provided by means of ribs 14 and 16 which are joined into substantially loop-like formation having a tip such as 18. Preferably each of the blades is formed of an odd number of ribs so that a central rib such as 20 may extend down and be directly connected to the tip 18 of the loop formed by the two outside ribs 14 and 16. The remaining ribs 12 may be connected to the outside ribs 14 and 16 at a point removed from the tip 18 but preferably all of the ribs will be of arcuate formation so that the entire blade is concave in construction. One of the blades, such as the blade having the base 10, has rigidly connected thereto a laterally extending handle 22 which is concave in cross section as shown in Figure 4 and terminates in a downturned gripping end 24. The concave handle 24 provides a longitudinally extending slot or guide channel 26 for a purpose presently to be described. A slide member 28 is provided for sliding engagement with the handle 22 and has a longitudinally extending slot 30 through which extends locking screw 32 which is rigidly secured in the handle 22 by any suitable means. The locking nut 34 is mounted on the screw 32 for locking the slide 28 in substantially fixed relation with respect to the handle 22.

The slide 28 is provided with a bifurcated head 38 having forwardly extending arms 40 and 42. The base 44 of the outside blade is pivoted to the arms 40 and 42 by means of suitable rivets 46 and 48. The arms 40 and 42 are roughly channel-shaped in formation and the base 10 is provided with upstanding lugs 50 that slide in the arms 40 and 42 and stabilize the head with respect to the base 10.

The outside end of the slide 28 is provided with an enlarged end 52 on which is provided a gripping aperture 54. The enlarged head 52 is likewise provided with an intumed downwardly extending guide lug 56 adapted to slide in the longitudinal concave portion 26. To further stabilize the operation of the slide on the handle 22 a pair of grooves 60 and 62 is provided on the un-

derside of the slide 28 and upstanding ridges 64 and 66 on the edges of the concave handle 22 extend into the grooves 60 and 62 for further preventing lateral movement of the slide on the handle.

A lever 70 is rigidly mounted on the base 44 and has a thumb engaging portion 72 which extends in proximity to the handle 22 so that it may be operated by the thumb of the hand holding the handle 22. A laterally projecting pin is mounted in the arm 42 and has a relatively flat head 74 with the head lying in the plane of the head 38. An adjusting screw 76 has a head 78 in which is a longitudinally extending slot 80. The slot 80 is of sufficient width that the flat head 74 may readily pass through the slot 80 when the screw 76 is in substantial parallel relation to the arm 42. The lever 70 is provided with an aperture through which the screw 76 extends and a thumb nut 82 is mounted on the screw 76 and is operative to lock the lever 70 in adjusted position when desired.

The base 44 of the outer blade is provided with a longitudinally extending slot 86 which extends relatively to the bottom of the base 44 and preferably is in line with the central rib of the outer blade. The slot 86 is adapted to permit the location of a light fixture within the speculum and to adjust it as may be desired. If desired the base 44 may be flared outwardly sufficiently so that a reflector or shield may be mounted in the speculum to prevent light from the light fixture from shining into the eyes of the operator.

In the operation of the speculum, the nut 82 will be loosened so that the tips of the blades will come together as shown in Figure 3 and the nut 34 is loosened so that the mouth of the speculum may be adjusted to any desired width after which it will be rigidly locked in position by tightening the nut 34 so that the slide 28 will be rigidly maintained in longitudinal relation to the handle 22. The lever 70 will then be depressed to open the blades of the speculum to dilate the portion being inspected and if desired the locking nut 82 may be run down to maintain the blades in

open relation. Because of the skeleton nature of the blades substantially the entire inner surface of the expanded opening may be readily observed and almost nothing will be obscured by means of the wire-like ribs forming the blades of the speculum.

For purposes of description a particular embodiment of the invention has been shown, and described according to the best present understanding thereof. However, it will be apparent to those skilled in the art that many changes and modifications can be made herein without departing from the true spirit of the invention.

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

1. A speculum comprising a pair of skeleton blades, each of said blades including an arcuate plate metal base, a plurality of wire-like ribs formed on said base, said ribs being secured together to provide a blade tip, a laterally extending handle on one of said blades, a bifurcated slide mounted for longitudinal motion on said handle, the other of said blades being pivotally mounted on said bifurcated slide, a longitudinal slot in said slide, a locking screw extending through said slot, a pair of parallel longitudinally extending grooves in said slide, a pair of upstanding ridges on said handle, said ridges being engaged in said grooves, said handle being concave, a depending guide on said slide, said guide being received in said concave handle.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
624,537	Provins	May 9, 1899
662,830	Sklar	Nov. 27, 1900
2,545,201	Gilbert	Mar. 13, 1951

OTHER REFERENCES

1893 Catalog of Chas. Truax-Green Co., Chicago, Ill., p. 1470. (Copy in Div. 55.)