Sept. 27, 1960 H. R. GRIESHABER 2,954,025

SPECULUM

Filed Sept. 4, 1956

Fig. 1.

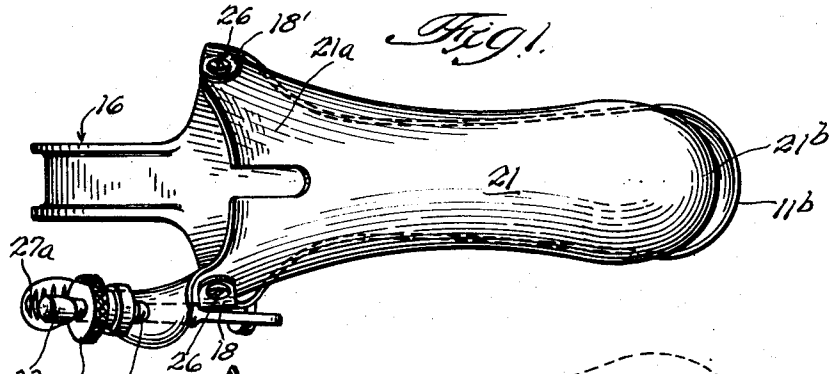


Fig. 2.

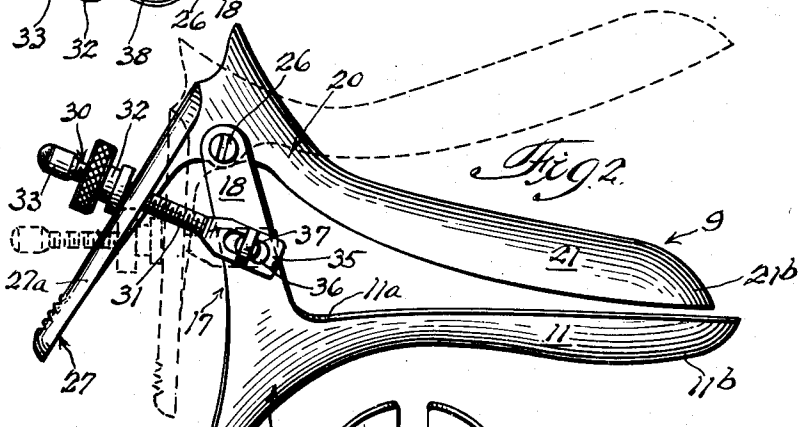


Fig. 3.

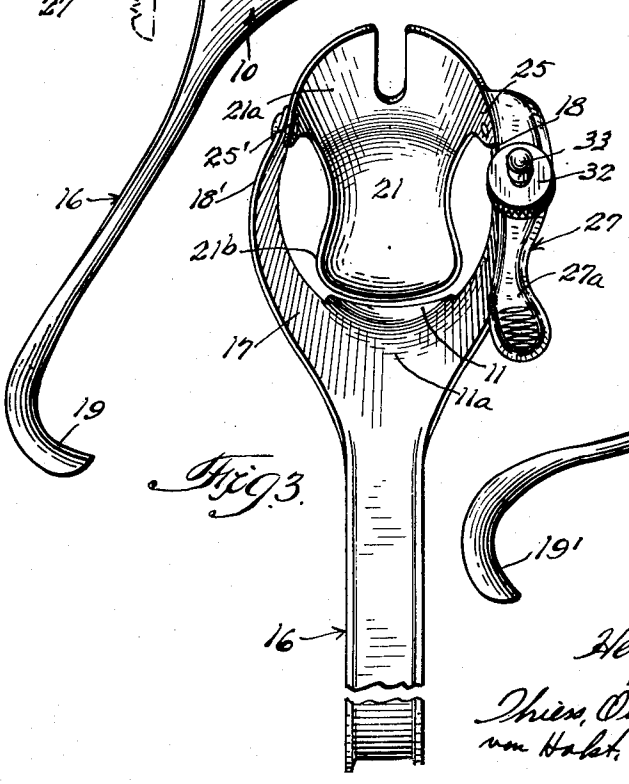
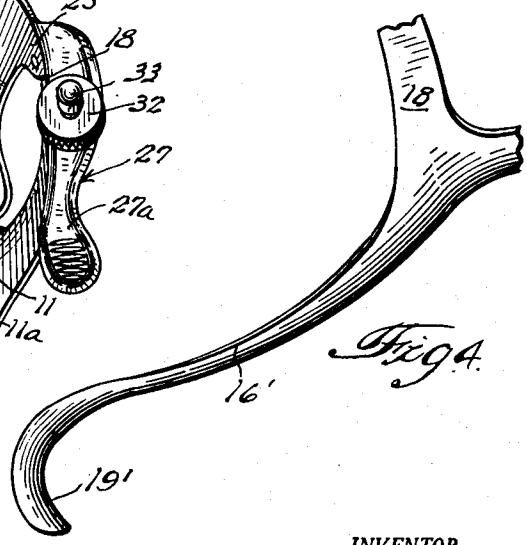


Fig. 4.



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SPECULUM

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5 Claims. (Cl. 128—17)

This invention relates to surgical instruments and more particularly to an improved speculum for use in the examination of certain passages of the body.

Previous specula have heretofore been proposed which, because of their complex design, are beset with numerous shortcomings; for example, they are difficult to manipulate, permit only limited visual inspection of the body passage and utilize a plurality of parts which are oftentimes difficult to properly clean.

Thus, it is one of the objects of this invention to provide a speculum which is void of the aforementioned shortcomings and is of a simple, inexpensive, yet sturdy construction.

It is a further object of this invention to provide a speculum which has the various parts thereof in such a relative position as to permit greater freedom of manipulation of the instrument by the doctor, subsequent to the instrument being disposed in the body passage.

Other objects may be seen and a fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawings.

In accordance with one embodiment of this invention, a speculum is provided which comprises two oppositely disposed blades, one of which is relatively fixed and the other of which is pivotally connected thereto for relative movement to open and closed positions. Lever means is provided on said relatively movable blade to facilitate adjustment thereof. Cooperating with said lever means is an adjustable locking unit for retaining said blades in relatively fixed positions of adjustment. The relatively fixed blade has extending, at an obtuse angle from the end thereof, to which the other blade is pivotally connected, a handle to facilitate manipulation of the instrument.

For a more complete understanding of this invention, reference should be made to the accompanying drawings in which:

Figure 1 is a top plan view of applicant's improved speculum;

Fig. 2 is a side elevational view of applicant's improved speculum showing, in dotted lines, the movable blade in adjusted position;

Fig. 3 is an end elevational view of applicant's improved speculum; and

Fig. 4 is a partial side elevational view of applicant's improved speculum, showing the modified handle portion of the fixed blade member.

Referring now to the drawings, applicant's improved speculum 9 is shown which is composed, in this instance, of but three basic parts: a fixed blade member 10, a movable second blade member 20, pivotally connected thereto, and an adjustable locking assembly 30 cooperating with both blade members to retain the second blade member in relatively fixed positions of adjustment.

The fixed blade member 10 includes an elongated bill-like portion 11, which is adapted to be inserted into the body passage, a handle portion 16 integrally connected to the exposed end 11*a* of portion 11 and extending obtusely therefrom in a downward direction, and a bifurcated portion 17, protruding angularly upwardly from the juncture of portions 11 and 16. Fixed blade member 10 preferably has a convex polished outer surface and a rounded or spoon-shaped forward end 11*b* to facilitate insertion of the blade portion 11 into the body passage without causing discomfort to the patient. The arcuate cross-sectional shape of the insertable portion of member 10 permits ready drainage of fluid from the body passage while the instrument is disposed therein. Exposed end 11*a* of member 10 is relatively large in size and has extending angularly upwardly from opposite sides thereof a pair of lugs 18 which form the bifurcated portion 17. Blade portion 11*a*, lugs 18, and the exposed end 21*a* of movable blade portion 21 form an enlarged unobstructed opening (see Fig. 3) which enables the doctor to readily observe the body passage, as well as permit ither instruments to be passed through said opening. The handle portion 16 is arcuate in cross-section and provides a trough which communicates with the trough formed in blade portion 11, to facilitate drainage of fluid from the body passage when the speculum is disposed in the body passage. As heretofore mentioned, handle portion 16 is disposed relative to blade portion 11 at an obtuse angle which is considerably more than 90°. The extremity of the handle portion is curved forwardly forming a finger loop 19 which facilitates manipulation of the instrument. Handle portion 16 (shown in Fig. 2) has a center portion which is substantially linear in silhouette. In Fig. 4, however, a modified handle portion 16′ is shown, wherein the center portion thereof is bowed, so that the end 19′ is spaced further from the round forward end 11*b* of blade portion 11.

The movable or second blade member 20 includes a bill-like portion 21 and a finger lever portion 27 integral with the exposed end 21*a* of portion 21. The pivotal blade membere 21 preferably has a convex polished outer surface and a forward end 21*b* which is substantially an inverted spoon shape. Blade portions 11 and 21 are similarly shaped and cooperate with one another to effect dilating of the body passage. The rear or exposed end 21*a* of blade portion 21 is slightly distended and expanded and forms a furcation having extremities 25 and 25′ thereof pivotally connected (by pivot screws 26) to the distal ends of lugs 18 and 18′ of bifurcated portion 17. The pivotally connected portions 11*a* and 21*a* of the fixed and pivotal blades are of such shape and configuration as to permit the most unobstructed vision possible with this type of instrument. No additional structural parts such as found in prior specula are required which would tend to obstruct observation through the opening between the blade portions.

Finger lever 27 (as shown in Fig. 3) is integral with extremity 25 and extends first angularly outwardly and then downwardly. The exposed surface of the downwardly extending portion 27*a* of the lever 27 is roughened to facilitate manipulation of the lever (without slipping) by the finger of the doctor.

The adjustable locking assembly 30 includes a spindle 31, on which is threadably mounted a nut 32. One end 35 of spindle 31 is flattened and provided with an elongated slot or eye 36, which is adapted to accommodate a stub 37 protruding outwardly from the adjacent lug 18 of bifurcated portion 17 and permit the spindle 31 to pivot thereabout. Spindle 31 projects through an opening 38 formed in lever portion 27*a*. The nut 32 threadably engages the free end of spindle 31 and contacts the exposed surface of lever portion 27*a* due to the unbalanced

mounting of blade member 20. The relative position of nut 32 on spindle 31 determines the extent to which the forward or inserted ends 11*b* and 21*b* of the blade portions 11 and 21 are spread relative to one another. A stop 33 is affixed to the free end of spindle 31 to prevent accidental separation of the spindle and nut.

In utilizing the improved speculum 9, the blade portions 11 and 21 thereof are initially inserted into the body cavity or passage while the blade portions are in the relative position shown in full lines in Fig. 2. Subsequent to inserting the forward ends of the blade portions 11 and 21 into the body passage, the doctor depresses lever portion 27*a* with his finger, causing blade portion 21 to be moved away from blade portion 11. The nut 32 is then drawn up tight against the lever so as to retain blade member 20 in its open position. The angular disposition of handle portion 16 or 16' is such that the doctor may readily manipulate the speculum while it is in the body passage and, thus, facilitate his examination of the passage.

Thus, from the foregoing it may be seen that an improved speculum has been provided which is of simplified construction and reduces materially the number of parts required in prior specula for their efficient operation. The elimination of these parts permits the speculum to be more easily cleaned and maintained in a surgically sterile condition. In addition, the relatively few parts permit the speculum to be manufactured at a minimum cost without impairing effective operation of the instrument. The enlarged exposed end of the improved speculum affords a wide unobstructed area of vision of the body passage when the speculum is disposed within such passage and permits the use of other instruments in combination therewith.

Although I have described my invention with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

I claim:

1. In a speculum having two oppositely disposed blades, one of said blades being relatively fixed and the second blade adapted to be pivotally opened and closed with respect to the fixed blade, a lever means for permitting the blades to be opened, and an adjustable locking means for retaining the blades in various positions of pivotal adjustment; the improvement comprising a handle portion integral with the fixed blade and extending outwardly and rearwardly from the fixed blade at an obtuse angle, and a bifurcated portion integral with the fixed blade and handle portion and disposed toward the second blade at an obtuse angle from the handle portion, said second blade being operatively and pivotally connected to the extremities of said bifurcated portion, said lever means including an apertured finger-engaging portion integral with the second blade and extending outwardly and rearwardly from one side of said second blade at an obtuse angle, said adjustable locking means including a removable spindle pivotally connected at one end to one side of the bifurcated portion of said fixed blade and extending through an aperture in said finger-engaging portion, and an element threadably connected to the free end of said spindle and contacting said finger-engaging portion to retain said movable blades in various positions of pivotal adjustment.

2. In a speculum having two oppositely disposed blades, one of said blades being relatively fixed and the second blade being relatively movable and adapted to be pivotally opened and closed with respect to the fixed blade, a lever for permitting the blades to be opened, and an adjustable locking means for locking the blades open in the desired position; the improvement comprising a substantially channel-shaped handle portion integral with the fixed blade and extending outwardly therefrom at an obtuse angle, and an arcuate-shaped bifurcated portion integral with the fixed blade and handle portion and disposed toward the second blade at an obtuse angle from both the handle portion and the blade portion of the fixed blade, said second blade having its rear portion distended and furcellated and pivotally connected to the bifurcated portion of the fixed blade, said lever means including an apertured finger-engaging flange portion which is integral with the second blade and extends outwardly and rearwardly from one side of the second blade at an obtuse angle, said adjustable locking means including a spindle removably connected at one end to one side of the bifurcated portion of the fixed blade and projecting through an aperture in said flange portion, and a nut threadably engaging the free end portion of said spindle and contacting said flange portion to retain said second blade in various positions of pivotal adjustment.

3. In a speculum having two oppositely disposed blades, one of said blades being relatively fixed and the second blade adapted to be pivotally opened and closed with respect to the fixed blade, a lever means for permitting the blades to be opened, and an adjustable locking means for retaining the blades in various positions of pivotal adjustment; the improvement comprising a handle portion integral with the fixed blade and extending outwardly and rearwardly from the fixed blade at an obtuse angle, and a bifurcated portion integral with the fixed blade and handle portion and disposed toward the second blade at an obtuse angle from the handle portion, said second blade being operatively and pivotally connected to the extremities of said bifurcated portion, said lever means including a finger-engaging portion integral with the second blade and extending outwardly and rearwardly from one side thereof at an obtuse angle, said adjustable locking means including an element selectively engageable with said lever means to retain the second blade in various positions of pivotal adjustment.

4. In a speculum having two oppositely disposed blades, one of said blades being relatively fixed and the second blade adapted to be pivotally opened and closed with respect to the fixed blade, a lever means for permitting the blades to be opened, and an adjustable locking means for retaining the blades in various positions of pivotal adjustment; the improvement comprising a handle portion integral with the fixed blade and extending outwardly and rearwardly from the fixed blade at an obtuse angle, and a bifurcated portion integral with the fixed blade and handle portion and disposed toward the second blade at an obtuse angle from both the handle portion and the fixed blade, said second blade being operatively and pivotally connected to the extremities of said bifurcated portion, said lever means including a finger-engaging portion integral with the second blade and extending rearwardly from one side thereof at an obtuse angle, said adjustable locking means including an elongated element one end of which is operatively connected to one side of the bifurcated portion of the fixed blade, and means carried by said element for engaging said lever to thereby retain said movable blade in various positions of pivotal adjustment.

5. In a speculum having two oppositely disposed blades, one of said blades being relatively fixed and the second blade adapted to be pivotally opened and closed with respect to the fixed blade, a lever means for permitting the blades to be opened, and an adjustable locking means for retaining the blades in various positions of pivotal adjustment; the improvement comprising a handle portion integral with the fixed blade and extending outwardly and rearwardly from the fixed blade at an obtuse angle, and a bifurcated portion integral with the fixed blade and handle portion and disposed toward the second blade at an obtuse angle from both the handle portion and the fixed blade, said second blade being operatively and pivotally connected to the extremities of said bifurcated

portion, said lever means being apertured and including a finger-engaging portion integral with the second blade and extending outwardly and rearwardly from one side thereof at an obtuse angle, said adjustable locking means including an elongated element operatively connected to one side of the bifurcated portion of the fixed blade and extending through the aperture in said lever and means carried by said element for engaging said lever to thereby retain said movable blade in various positions of pivotal adjustment.

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