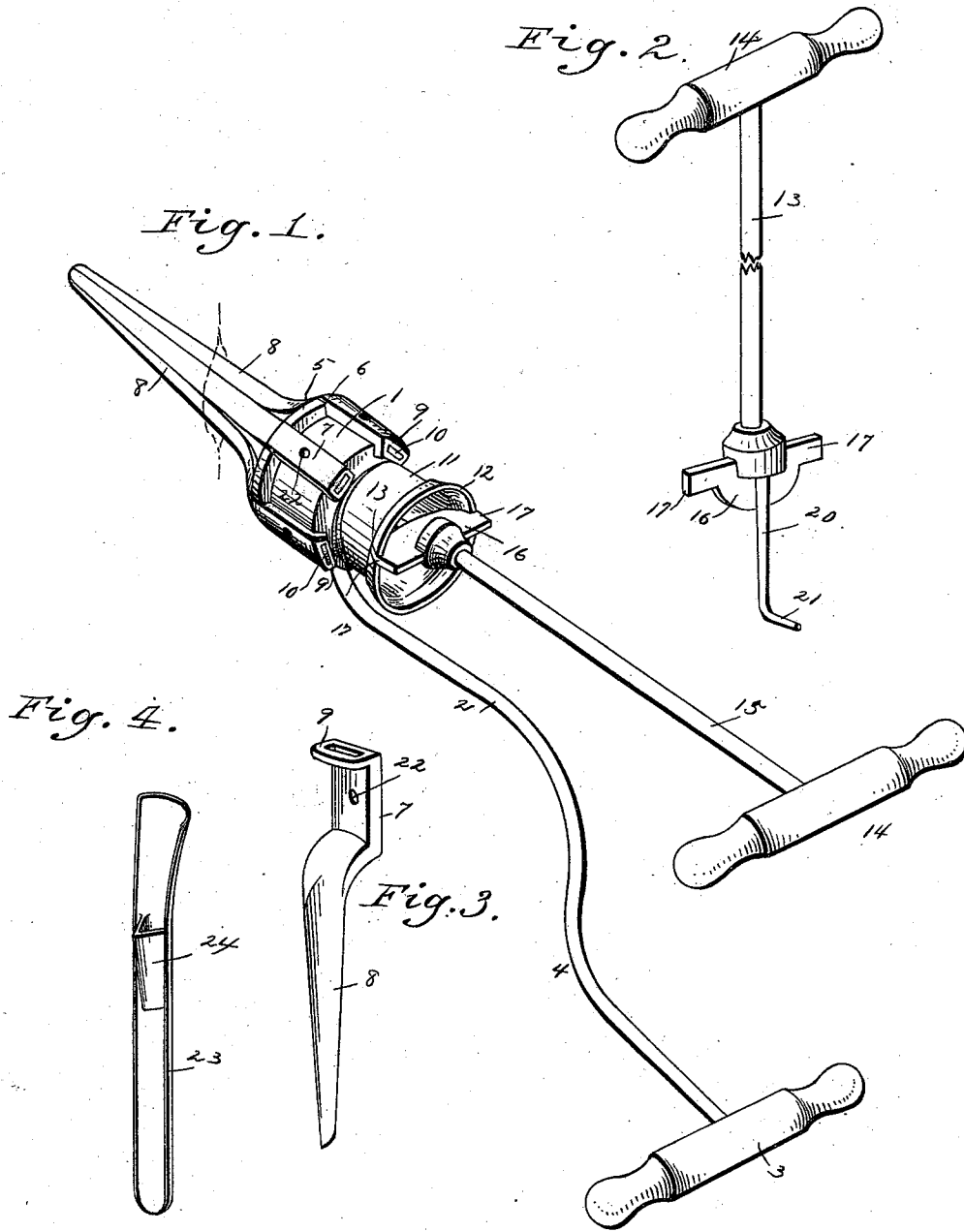


W. MOLESWORTH.
SPECULUM.

No. 400,589.

Patented Apr. 2, 1889.



WITNESSES:
John W. Deemer
G. Bestwick

INVENTOR:
W. Molesworth
 BY *Munn & Co*
 ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

W. MOLESWORTH.
SPECULUM.

No. 400,589.

Patented Apr. 2, 1889.

Fig. 5.

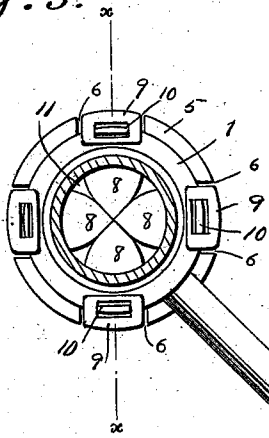


Fig. 6.

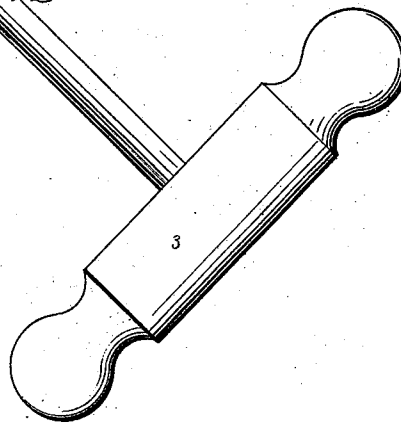
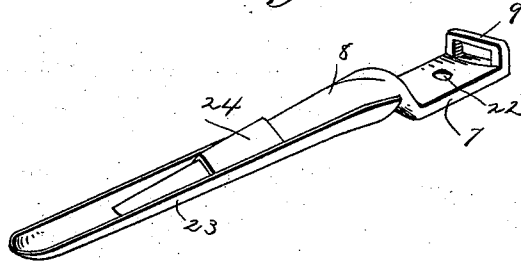
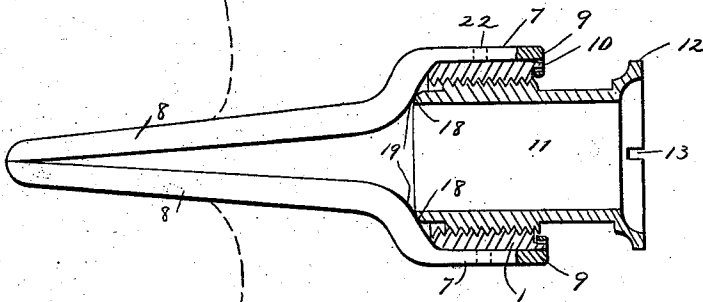


Fig. 7.



WITNESSES:

John M. Deemer
C. Bestwick

INVENTOR:

W. Molesworth
BY *Munn & Co.*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM MOLESWORTH, OF BROOKLYN, NEW YORK.

SPECULUM.

SPECIFICATION forming part of Letters Patent No. 400,589, dated April 2, 1889.

Application filed June 9, 1888. Serial No. 276,583. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MOLESWORTH, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Combined Intra-Uterine, Cystic, and Rectum Speculum, of which the following is a full, clear, and exact description.

This invention has for its object to provide a speculum by means of which the wall of a passage or cavity may be dilated and access had to any portion of the wall while the passage or cavity is held in dilated position.

The invention consists in a speculum constructed and arranged as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the invention. Fig. 2 is a detail thereof, showing dilating-handle detached. Fig. 3 illustrates one of the dilating-fingers detached. Fig. 4 is a shield therefor removed. Fig. 5 is a rear view of the speculum with dilating-handle detached. Fig. 6 represents the dilating-finger and shield connected together; and Fig. 7 is a longitudinal section thereof, on the line xx in Fig. 5, showing the construction for dilating the fingers.

In the construction of this invention I provide an internally screw-threaded ring, 1, mounted on an arm, 2, extending rearward from the ring 1 for a suitable distance, and having a handle, 3. The arm 2 is curved outward, as at 4, to bring the outer end of arm 2 and handle 3 in proper position for handling the speculum, as will be hereinafter set forth.

The ring 1 is formed on its outer end with a lateral circumferential flange, 5, having a series of slots, 6, in which rest the shanks 7 of a number of dilating-fingers, 8, the shanks 7 extending across the side of the ring 1 and connected thereto by slotted lips 9 engaging projections 10 on the inner end of the ring.

Within the ring 1 is mounted a screw-threaded tube, 11, engaging the screw-thread of ring 1 and having a flange, 12, with notches 13. The tube 11 is moved backward or for-

ward in the ring 1 by means of a handle, 14, and rod 15, provided at its end with a plate, 16, having lugs 17, which fit into the notches 13. The outer end of the tube 11 is formed with a rounded edge, 18, which bears against the curved inner portions, 19, of the fingers 8 adjacent to their shanks 7.

It will be seen that upon advancing the tube 11 its outer end will press against the curved portions 19 of the fingers 8 and dilate the latter.

In employing the speculum the fingers 8, in closed position, as shown in Fig. 1, are introduced into the passage or cavity, the speculum being held in position by the handle 3, which, owing to the shape of arm 2, gives room for observation through tube 11 and operation of the latter. The fingers 7 may be then dilated by engaging the lugs 17 with notches 13 of tube 11 and operating the handle 14 to advance the tube 11. Observation of the passage or cavity thus dilated may be had through the tube 11, the interior of the passage or cavity being illuminated by means of electric light introduced through tube 11.

In order to see and have access to any portion of the wall of the passage or cavity, one or more, as may be necessary, of the fingers 8 are detached. This is effected by means of a projection, 20, on the end of rod 15, having a bent end, 21, which engages a hole, 22, in the shank 7 of a finger 8. By drawing on the handle 14 the finger 8 is released from engagement with projection 20 and removed. In this way a tumor resting on one or more of the fingers will drop down and be suspended in the cavity upon the removal of those fingers.

To prevent the angles of the fingers 8 from injuring the walls of certain passages or cavities, they are provided with shields 23, rounded on their outer portion and at their outer end and easily attached to and detached from the fingers 8 by means of a sleeve, 24, within the shield 23. It will thus be seen that by means of a speculum constructed as herein set forth the female urethra, cervix uteri, the rectum, a sinus, or a cyst may be easily dilated, and any cavity or passage can be thoroughly explored

and the walls thereof held in dilated position while a portion thereof is exposed for examination, operation, or treatment.

By means of the fingers being detachable the invention may be used as a bivalve speculum.

The fingers may be used with or without the shields, as desired.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the dilatable fingers of a speculum, of removable shields, substantially as described.

2. A speculum consisting of a ring and supporting-handle, and a series of dilatable and removable fingers detachably engaging the ring, in combination with a tube having a screw-threaded connection with the ring and movable therein to operate the fingers, and a handle for screwing and unscrewing the tube and detaching and withdrawing the fingers, substantially as shown and described.

3. A speculum consisting of an internally-

screw-threaded ring, 1, having rear projections, 10, lateral flange 5, with slots 6, and a handle for supporting ring 1, and a series of dilatable and detachable fingers, 8, with shanks 7, having holes 22, and slotted lips 9 engaging projections 10, in combination with tube 11, engaging screw-thread of ring 1, and having flange 12 with slots 13, and the detachable handle 14, with rod 13, having at its end a plate, 16, with lugs 17, and a projection, 20, with bent arm 21, substantially as shown and described.

4. In a speculum substantially as herein described, a dilatable and detachable finger, 8, in combination with shield 23, having a rounded surface and outer end, and a sleeve, 24, with which finger 8 is held in engagement, substantially as shown and described.

WILLIAM MOLESWORTH.

Witnesses:

EDWARD W. CADY,
C. SEDGWICK.