

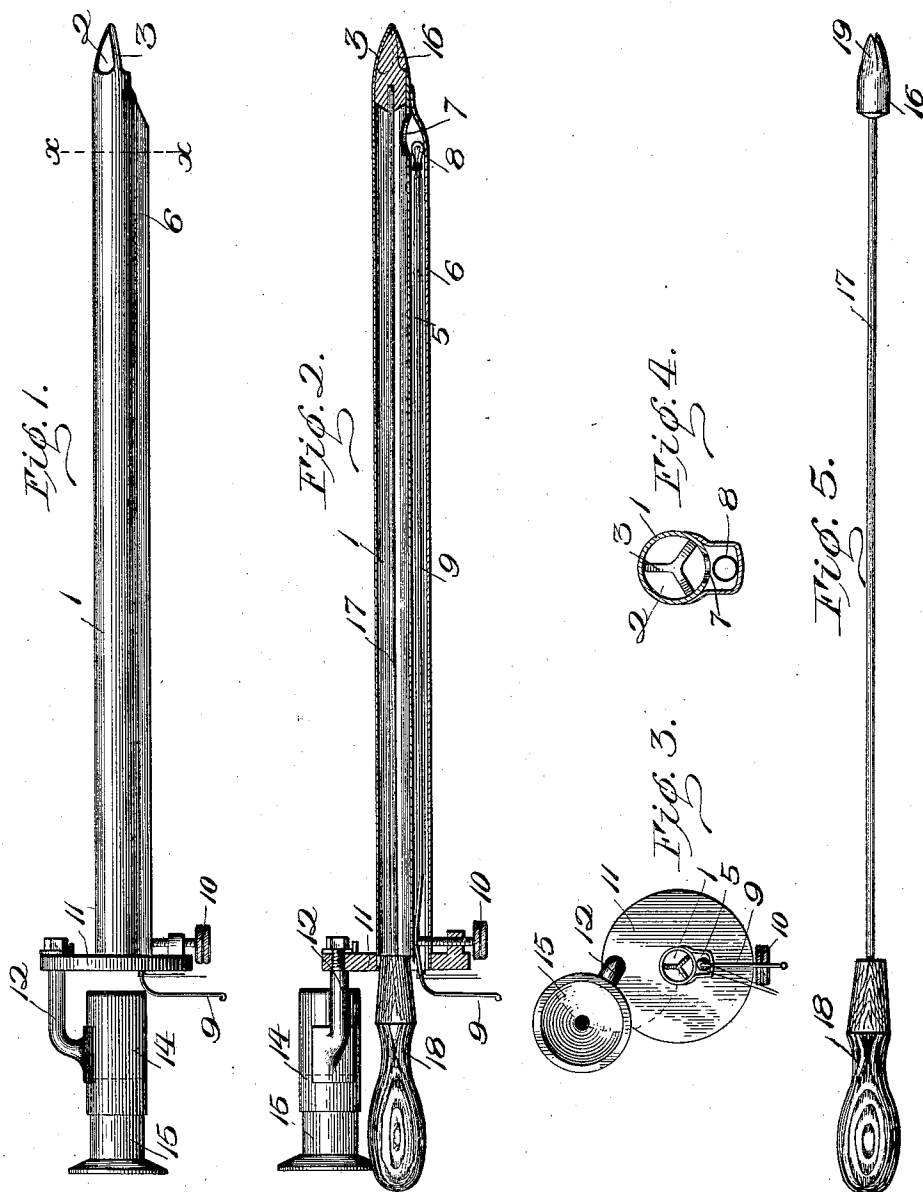
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W. C. PRESTON.  
SPECULUM.

(Application filed Feb. 21, 1899.)

(No Model.)



Witnesses.

*Halter B. Payne*  
*Willard Rich.*

Inventor.

*William C. Preston*  
*by Charles Church*  
*his Attorneys.*

# UNITED STATES PATENT OFFICE.

WILLIAM C. PRESTON, OF ROCHESTER, NEW YORK.

## SPECULUM.

SPECIFICATION forming part of Letters Patent No. 636,213, dated October 31, 1899.

Application filed February 21, 1899. Serial No. 706,435. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. PRESTON, of Rochester, in the county of Monroe and State of New York, have invented certain  
5 new and useful Improvements in Speculums; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide an improved speculum adapted particularly for making examinations of cavities  
15 or passages of the body and for treatment by local application to a diseased tissue, and has for its further object to provide a means of lighting the inner or working end of the instrument.

To these ends my invention consists in certain improvements and combinations of parts, all as will be hereinafter fully described, and the novel features pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a side elevation of my improved instrument; Fig. 2, a longitudinal sectional view; Fig. 3, an end elevation; Fig. 4, a sectional view on the line *x x* of Fig. 1; Fig. 5, a side elevation of the  
30 plug.

In the construction of my device I employ a hollow cylindrical tube 1, pointed upon its forward end and provided with the apertures 2, preferably triangular, having the webs 3  
35 between them converging toward the point 4 and serving to support the tissue or membrane, and by preventing the latter from collapsing a much larger surface is presented for examination or treatment without moving the instrument longitudinally in the passage.  
40 The webs 3 may be very light and narrow, so as not to obstruct the view materially, and the instrument may be revolved slightly to expose any part hidden or covered thereby.

Upon the under side of the body is a chamber 5, formed by the casing 6, extending from near the point to the rear end of the instrument and communicating with the interior of the body through an aperture 7, located at  
50 the forward end of the chamber. A small low-voltage incandescent lamp 8 is mounted upon a wire or handle 9 and adapted to be

inserted into the chamber and to lie beneath the aperture 7 for the purpose of lighting the parts exposed through the apertures in the forward or operating end of the instrument.  
55 A thumb-screw 10, arranged at the rear end of the instrument, projects into the chamber and is adapted to engage the handle 9 and prevent the accidental displacement of the lamp.

11 indicates a disk or plate mounted upon the body and forming the rear or outer end of the instrument, making a convenient means for handling or manipulating the same,  
65 and also serves as a support, upon which a magnifying attachment may be secured.

12 indicates an arm pivoted in the plate 13, carrying a sleeve 14, provided with the adjustable sliding eyepiece 15, carrying a suitable lens and adapted to be held in line with the body of the instrument for purposes of examination, as shown in Fig. 1, but capable  
70 of being turned to the side by reason of the pivotal connection between the arm and support when it is desired to operate through the interior of the instrument.

To permit the easy insertion of the device and to prevent the apertures from tearing or otherwise injuring a delicate membrane, I  
80 provide a plug 16, connected by a rod 17 to a handle 18 and adapted to be removed or withdrawn through the inside of the tube 1. Raised portions 19 are provided upon the face of the plug, raised sufficiently to correspond  
85 to the thickness of the material composing the sides of the body and are adapted to fit between the webs 3 and to fill out the spaces formed by the apertures, making a perfectly round and smooth point, as shown in Fig. 2.  
90

With this construction I am enabled to examine a large area of membrane and to have the same properly illuminated. By providing a separate chamber upon the body of the instrument it is possible to have the light in  
95 proximity to the working end of the instrument without obstructing the interior of the instrument by a reflector or mirror, as is the case where the light is arranged at the rear of the instrument. The difficulty of overheating the instrument by the heat radiated from the lamp, making it impossible to use the device for examination upon sensitive tissues, is  
100 entirely overcome by the arrangement of the

parts in my construction. The lamp being located beneath the aperture 7 at the inner end of the chamber 5, which latter is smaller in area than the body of the instrument and located upon the under side thereof, causes a slight current of air to circulate through the chamber into the body of the instrument and out at the rear, preventing the temperature of the latter being raised above that of surrounding membrane or tissue.

While this instrument is particularly adapted by reason of its small size to examination and treatment of the urethra, it may be made of large size and used for other orificial examinations and treatment, as will be understood.

I claim as my invention—

1. In a speculum, the combination with the hollow body, of a chamber extending upon the side of the latter, and connected thereto by an aperture arranged near their forward ends, and a lamp adapted to be introduced into the chamber and in proximity to the aperture.

2. In a speculum, the combination with a hollow body open upon its rear end, having a perforated point upon its opposite extremity, of a plug adapted to close the apertures in the point and form a smooth joint with the edges thereof, and a chamber arranged upon the under side of the body and connected thereto, and a lamp located in the chamber beneath the aperture.

3. In a speculum, the combination with a hollow body open upon its rear end and having a perforated point upon its opposite extrem-

ity, of a plug having raised portions upon its surface corresponding to the apertures in the point and adapted to fill the same to conform with the contour of the latter, and a chamber upon the under side of the body, and an aperture in the side thereof communicating with the chamber, and the lamp in the chamber beneath the aperture.

4. In a speculum, the combination with a hollow body open upon its rear end, and having a plate or disk mounted thereon, and a perforated point upon its opposite extremity, of a plug mounted upon a handle and adapted to close the apertures in the point, and capable of removal through the body of the instrument, and a chamber formed upon the under side of the body, the aperture between the body and chamber, and a lamp adapted to be inserted within the latter and arranged below the aperture.

5. In a speculum, the combination with a hollow body having a plate or disk mounted upon its rear end, of a pivotally-connected magnifying attachment arranged in line with the center of the body and capable of being turned to the side, said body having a perforated pointed end, of the plug closing the apertures in the point, the chamber formed upon the under side of the body, the aperture connecting the former with the latter, and the lamp located in the chamber.

WILLIAM C. PRESTON.

Witnesses:

F. F. CHURCH,

G. A. RODA.