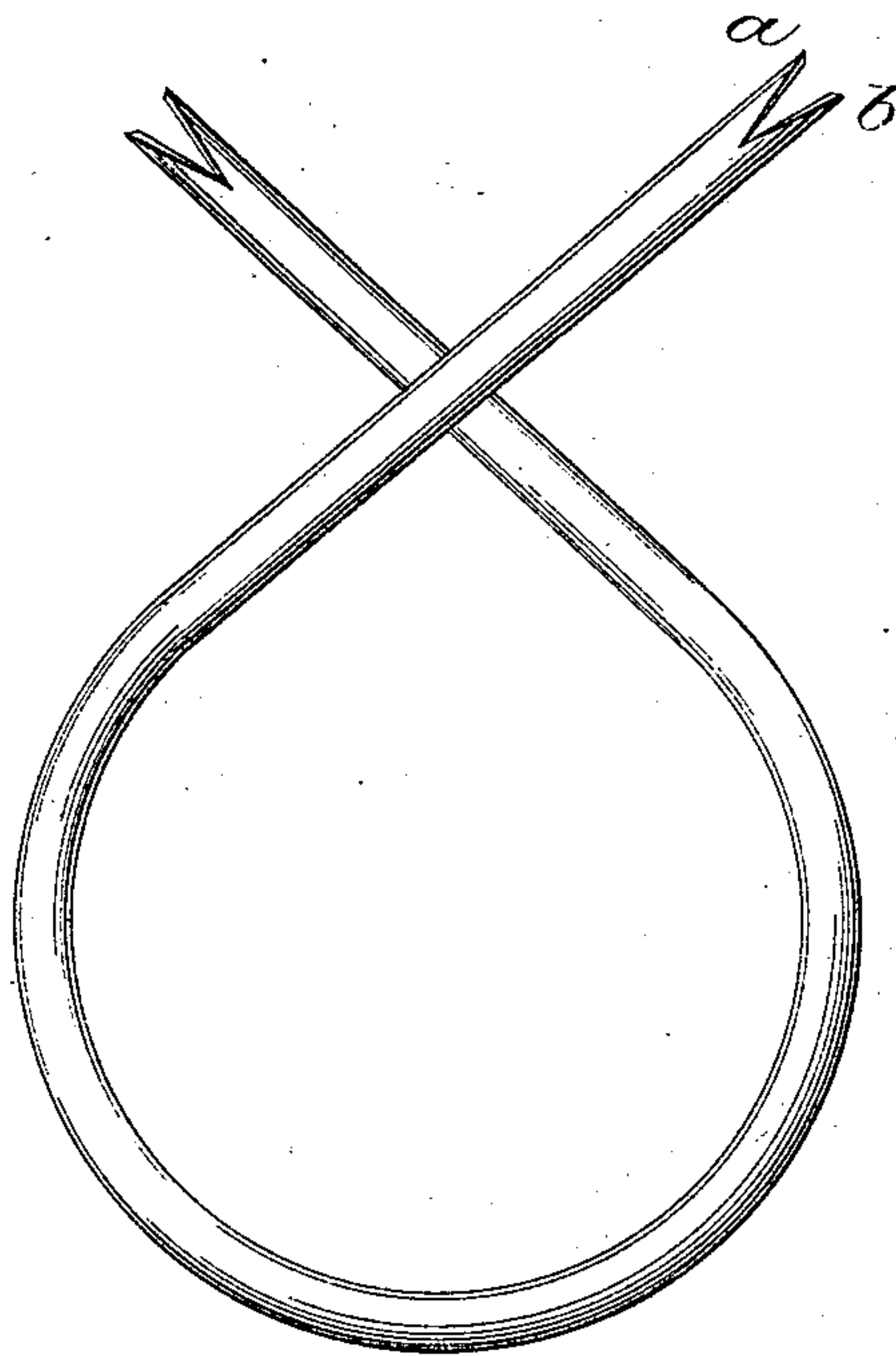


A. SHILAND.  
Catheter.

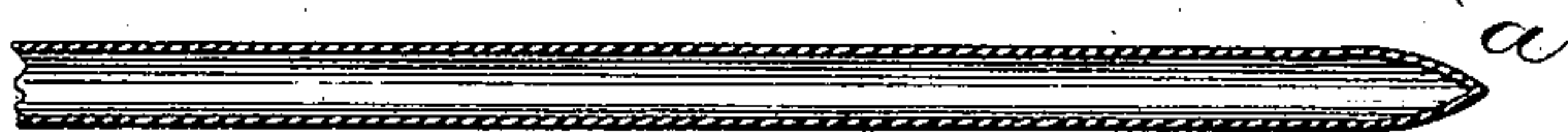
No. 217,711.

Patented July 22, 1879

*Fig. 1.*



*Fig. 2.*



Witnesses:

R. P. Hinnard  
Eugene Van Buren

Inventor

Alexander Shiland.

# UNITED STATES PATENT OFFICE.

ALEXANDER SHILAND, OF WEST TROY, NEW YORK.

## IMPROVEMENT IN CATHETERS.

Specification forming part of Letters Patent No. **217,711**, dated July 22, 1879; application filed March 26, 1879.

*To all whom it may concern:*

Be it known that I, ALEXANDER SHILAND, of West Troy, in the county of Albany and State of New York, have invented a new and useful Improvement in Catheters, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view; Fig. 2, a longitudinal section.

Letters *a* and *b* indicate the conical or duck-bill shaped branches, forming the terminal part of the catheter.

My invention may be denominated the "duck-bill" or "open-mouth" catheter, and is composed of soft elastic rubber, or similar material, and terminates with branches formed by a V-shaped section of the tube forming the catheter. A diagonal section from each side to the center of the tube forms the duck-bill branches, and gives an opening corresponding to the channel or inner caliber of the catheter. The elastic branches are compressed to a wedge shape or form best adapted to enter and follow the canal of the urethra, and the elastic branches open as soon as beyond the pressure of the walls of the urethra, and give free passage to the fluids of the bladder.

The construction and the manner of opening and closing of the branches forming the end of this catheter differ from all others. The hollow of the tube is continuous with the open mouth, making the channel full size throughout.

The duck-bill branches *a* and *b* are closed by compression when introduced, and this conical or wedge shape facilitates the passage of the catheter, and when past the urethra the branches expand, forming the open mouth. Any number of branches, oval or pointed, may be made, as desired.

In the usual form of catheter the channel is closed at the end which is introduced into the urethra, and small perforations which are made permit the fluids to pass, while the end is solid, and admits of no compression or expansion.

I claim—

In a soft elastic catheter, the combination of the elastic branches forming the duck-bill or open-mouth catheter, substantially as set forth.

ALEXANDER SHILAND.

Witnesses:

R. P. TUNNARD,  
ANDREW VAN BUREN.