

No. 654,763.

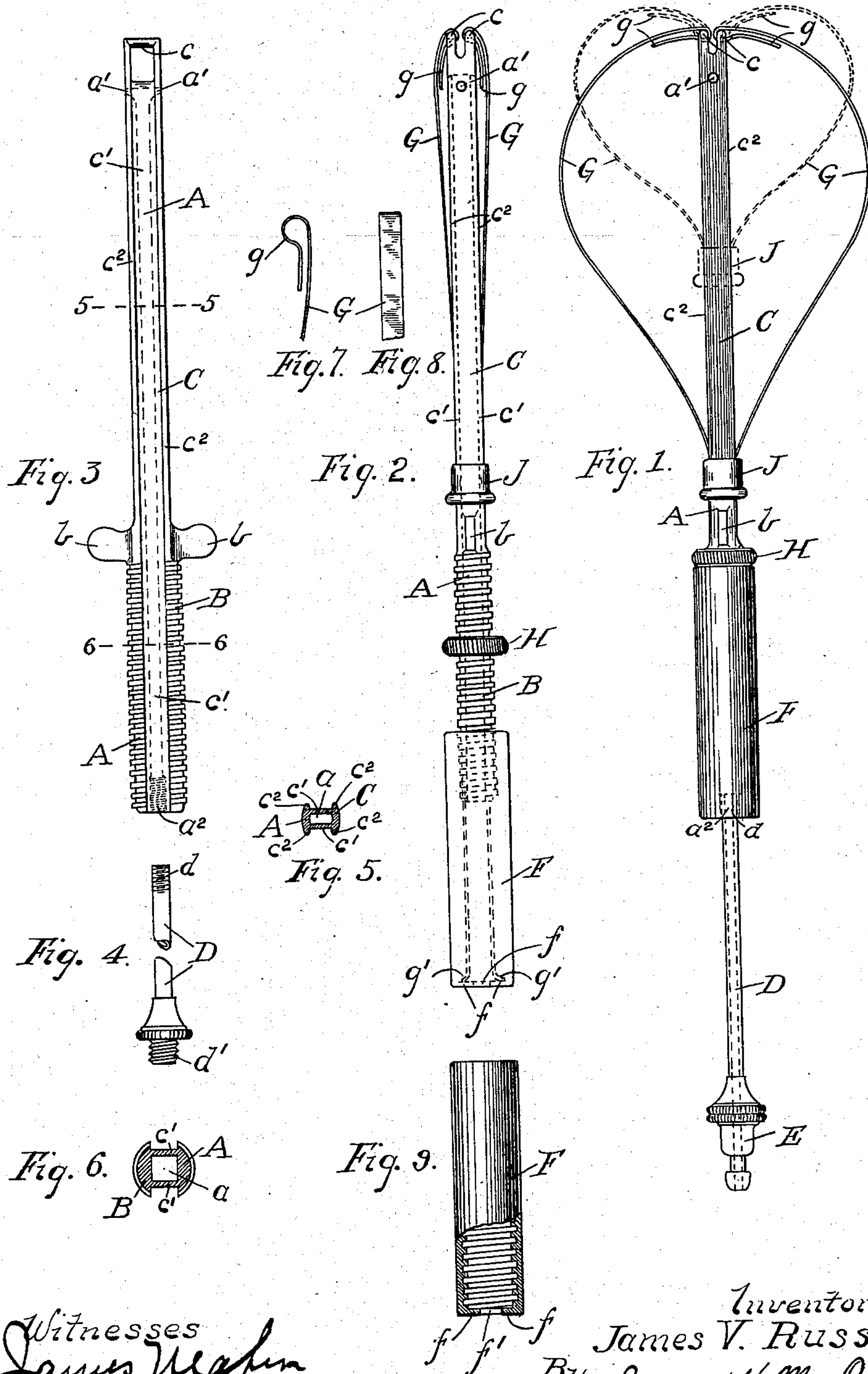
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J. V. RUSSELL.

CURETTE.

(Application filed Oct. 9, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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CURETTE.

SPECIFICATION forming part of Letters Patent No. 654,763, dated July 31, 1900.

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To all whom it may concern:

Be it known that I, JAMES V. RUSSELL, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Curettes, of which the following is a specification.

My invention relates to curettes, more especially for removing substances from the walls of the uterus by the rotary motion of said instrument.

The objects of my invention are to provide a curette consisting of but few detachable parts, so that the instrument may be readily taken apart for thorough cleansing and so that it will not be expensive to make, as also to provide an instrument of such construction that it will be convenient in use, will not accidentally get out of adjustment, and will readily adapt itself to varying conditions, so that injury to the patient will be avoided. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the assembled curette, showing the douche connection and showing the blades expanded. The dotted lines in the upper portion of said figure illustrate the effect produced upon the blades when the adjusting-collar is moved to a position near the central portion of the shank of the instrument. Fig. 2 is a side view of the curette, showing the blades in a contracted position. Fig. 3 is a face view of the main frame or stock of the instrument, showing the shank and the threaded butt thereof and the channel for receiving the blades of the instrument. At the lower extremity of said figure is indicated in dotted lines the interior thread for receiving the douche connection. Fig. 4 is a side view of a portion of the pipe which forms the exterior douche connection. Fig. 5 is a transverse sectional view of the shank of said instrument, taken on the line 5 5, Fig. 3. Fig. 6 is a transverse sectional view, slightly enlarged, of the threaded butt, taken on the line 6 6, Fig. 3. Fig. 7 is a view of a portion of the cutting edge of a blade. Said figure is on a scale somewhat enlarged and shows the offset bearing whereby said blade is attached to one of the terminal pins of the stock. Fig. 8 is a face view of a por-

tion of the cutting-blade, as shown in Fig. 7. Fig. 9 is a side view of the interiorly-threaded sleeve which forms the handle of the curette. A portion of said handle is shown in longitudinal section, thereby revealing a portion of said interior thread and also the aperture at the lower extremity of said handle for receiving the douche-pipe.

Similar letters refer to similar parts throughout the several views.

The stock A consists of a hollow rod or shaft, preferably of metal, having a central duct *a* extending from the outer extremity of the threaded butt B of said stock to a point near the outer extremity of the shank C thereof, where said duct has the lateral openings *a' a'*. Connecting with said duct *a* at the extremity thereof and lying within the butt B is the threaded portion *a²* of said stock for receiving the threaded extremity *d* of the exterior douche-pipe D. The opposite extremity *d'* of said pipe D is also threaded to engage the nipple E, whereby said pipe may be connected to a hose or other vessel. The ducts within said nipple E, pipe D, and stock A thus form a continuous passage-way for conveying the liquid which is to be sprayed or douched upon the walls of the cavity operated upon. The thread upon the butt B extends throughout the greater portion of the length thereof and has a preferably steep pitch in order to effect a quick longitudinal motion of the handle F when said handle is rotated upon the stock A.

At the extremity of the butt B, which lies nearer the central portion of the stock A, are the ears *b b*, which extend laterally from said stock and furnish means whereby the operator may grasp the instrument and prevent the rotation thereof when said handle F is being screwed in either direction upon the said stock A. The terminal pins *c c* are set in said stock at the outer extremity of the shank C thereof and serve as means of attachment for the cutting or scraping blades G G. A portion of the said shank C, near said pins *c c*, is cut away to allow free play for said blades upon said pins. The channels *c' c'* lie in opposite faces of the stock A and extend from a point near the said terminal pins *c c* to the opposite extremity of said stock. The portion of each of said channels *c' c'* lying

within the shank C is bounded by the flanges $c^2 c^2$ in the manner shown in Fig. 5. As said channels extend through the butt B, portions of the thread thereof are cut away, leaving a cross-section, as shown in Fig. 6. Said flanges $c^2 c^2$ serve to prevent the edges of the blades G G from coming into contact with surrounding objects when said blades are contracted. Said blades G G consist, preferably, of strips of spring-steel and are provided at their forward extremities with the loops or return-bends $g g$ for inclosing the terminal pins $c c$. Said loops have offset axes, as indicated in Figs. 1 and 2 and as shown in detail in Fig. 7. By this construction when the blades G G are forced in a forward direction they do not become disengaged from the pins $c c$, but tend to bow outwardly or expand, as shown in Fig. 1. As said blades are resilient, however, they may be easily disengaged from said terminal pins by spreading said loops $g g$ sufficiently to allow the passage of said pins. Another advantage of the loop construction described is that the forward extremity of the instrument presents a smooth and rounded surface for entering the cavity. The blades G G when contracted lie in the channels $c' c'$ and extend from said pins to a point beyond the opposite extremity of the stock A. The rear or lower extremities of said blades are preferably provided with slight lateral bends $g' g'$ for the better engagement of said blades with the handle F. The excess of the length of said blades G G is such that when said bent extremities $g' g'$ are forced to a position adjacent to the rear extremity of the stock A the resulting expansion of said blades will be as great as may be required of the instrument.

The handle F, which consists of a sleeve interiorly threaded to engage the thread upon the butt B of the stock A, is provided at its rear extremity with a flange or head f for engaging the bent extremities $g' g'$ of the blades G G. Centrally located within said head f is the aperture f' for receiving the douche-connecting pipe D. The diameter of said aperture f' is sufficient to permit the handle F to move freely upon the butt B independently of said pipe D. The handle F is of such length that when the blades G G lie in the channels $c' c'$ and project beyond the lower extremity of the stock A, as shown in Fig. 2, said handle incloses a sufficient portion of the butt B to maintain its position thereon. The lock-nut H also engages the thread upon the butt B and occupies a position thereon between said handle F and the ears $b b$ on the stock A. By means of said nut the said handle may be locked in any position upon said stock, and when so locked said handle becomes virtually a part of said stock and may be grasped by the operator using the instrument.

The adjusting-collar J occupies a position upon the shank C of the stock A and incloses said shank and blades G G, confining the

latter within the channels $c' c'$. Said collar allows free play for said blades within said channels, but binds the said shank sufficiently to maintain its position thereon when set at any desired point. Said collar projects but slightly from said stock and may therefore readily penetrate small apertures—as, for example, the os uteri.

In the operation of the curette the lock-nut H is loosened and the handle F retracted by screwing it rearwardly along the butt B until the blades G G project to their full extent beyond the rear extremity of the stock A. The blades G G then become straightened by the force of their own resiliency and lie within the channels $c' c'$. The adjusting-collar J is then moved to a position upon the shank C such that the distance between the forward looped extremities of the blades G G and the said collar J is equal to the depth of the cavity to be operated upon. The nipple E is then connected to the hose or other vessel wherefrom the douching liquid is to be supplied. The shank C and contracted blades G G are then inserted into the cavity, and when the proper position therein is reached the handle F is screwed upon the butt B, so as to approach the forward extremity thereof. This motion of the said handle causes the head f thereof to act upon the extremities $g' g'$ of the blades G G and force the latter in a forward direction. As the forward extremities of said blades are fixed relatively to the stock A, the forcing of the rear extremities $g' g'$ in a forward direction induces in said blades a tendency to lateral flexure. The offset construction of the forward extremities $g g$ of said blades causes said flexing tendency to take effect at and near said extremities, where said flexure is confined by means of the collar J. When said blades are expanded sufficiently, the lock-nut H is screwed tightly against the handle F and prevents the latter from moving relatively to the stock A. The liquid is then allowed to pass into the nipple E, whence it flows through the pipe D and duct a and emerges into the cavity from the aperture $a' a'$. At the same time the curette is rotated, thereby causing the blades G G to scrape the walls of the cavity and remove the superfluous substance therefrom. When the instrument is to be withdrawn, the nut H is loosened and the handle F unscrewed until the blades G G unflex or contract and return to their positions in the channels $c' c'$, when no obstruction is offered and the withdrawal is easily effected.

By moving the adjusting-collar J to a forward position upon the stock the blades may be flexed, so as to project beyond the extremity of the stock, as indicated by the dotted lines, Fig. 1, said blades thereby being in a position to operate upon the inner extremity of the cavity. In this latter case the said collar may enter said cavity.

The adjusting-collar J is an important fea-

ture of my invention, for by its use any desired amount of expansion of the blades G G is permitted, and at the same time the mouth of the cavity, which is usually contracted, is
 5 protected from said blades. The said collar, taken in connection with the variable expansion of the blades, enables the instrument to be adapted to a great variety of shapes and sizes of cavities. The sliding adjustable collar or ring J, which is mounted on the stock
 10 C, between the handle F and the forward extremity of said stock, embraces the blades G G with sufficient looseness to permit said blades when outwardly expanded or flexed
 15 to yield inward by sliding more or less through said collar and flex or expand outward below or on the handle side of the same when the said blades meet with unusual resistance, this yielding or flexure of the said blades being of
 20 great advantage where the cavity is of unusual form, as injury to the patient is thereby avoided.

It is evident that if no douche is required the curette may be used with the pipe D and
 25 nipple E removed.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a curette, the combination with a stock, of flexible blades having a length greater
 30 than said stock and attached to the forward end of the latter, and a hollow handle at the opposite end and longitudinally adjustable on said stock and into which the ends of said blades extend, said handle being provided
 35 with means to engage the said flexible blades so that when the said handle is moved forward on said stock the said blades will be expanded.

2. In a curette, the combination with a stock
 40 provided with longitudinal channels in its opposite sides, flat flexible blades secured at their outer ends to the forward extremity of said stock and normally housed in said channels, and a handle at the opposite end and
 45 movable longitudinally on said stock and within which the free ends of said flexible blades are disposed and by which they are expanded when said handle is moved forward on the stock.

3. In a curette, the combination with a stock, of flexible blades attached to the forward extremity of said stock, a handle carried by said stock and longitudinally movable thereon and within which the free inner ends of said flexible blades extend and by which they are expanded, and an adjustable or sliding blade-controlling collar intermediate the forward
 55 ends of said blades and said movable handle, and which permits of a flexure of said blades below said collar.

4. In a curette, the combination with a stock provided with longitudinal channels in its opposite sides, of flat flexible blades attached to the forward extremity of said stock and
 65 normally housed within said longitudinal channels; a handle carried by said stock and longitudinally movable thereon and within

which the free inner ends of said flexible blades are disposed and by which they are expanded; an adjustable blade-controlling
 70 collar intermediate the forward ends of said blades and said movable handle, and a lock-nut to limit the forward movement of said handle and hold it and said expanded blades against further movement and accidental displacement.

5. In a curette, the combination with a stock having a screw-threaded lower end and provided with opposite, longitudinal channels extending its entire length, of flat flexible
 80 blades detachably secured to the forward extremity of said stock and normally housed within said channels; a handle mounted on said screw-threaded lower end of the stock and within which the free inner ends of said
 85 flexible blades are disposed and by which they are expanded; a sliding blade-controlling collar between the forward extremity of said stock and said movable handle, and a lock-nut on said screw-threaded stock to determine and limit the movement of said handle and hold it and said expanded blades against further movement.

6. In a curette, the combination with a hollow stock having channels in its opposite
 95 sides extending its entire length, of a handle screw-threaded on one end of said stock and having an aperture in its bottom for the passage of a douche-tube; flat flexible blades having offset loops at their forward ends by
 100 which they are secured to the forward extremity of said stock, said blades being normally housed in the channels in said stock and having their free ends disposed within said movable handle, and said blades abutting against the bottom of said handle; a sliding collar on said stock between the forward
 105 end of the stock and said handle, a lock-nut threaded on said stock to determine and limit the movement of said handle and hold it and said expanded blades against further movement, and a douche-tube attachable to the lower end of said stock.

7. In a curette having expanding and contracting blades attached to the forward extremity of said curette at adjacent points thereon by means of loops or bends in said blades, offsets in said loops or bends whereby said blades are caused to flex laterally in opposite directions when the opposite
 115 extremities of said blades are forced to approach the said loops or bends in their respective blades.

8. In a curette, the combination of a stock, pins fixed in said stock at the forward
 125 extremity thereof adjacent to each other, expanding, cutting or scraping blades lying on opposite sides of said stock, said blades extending to the outer lateral surfaces of said pins, thence forward and inwardly around said
 130 pins, thence rearwardly, making return-bends wherein said pins are engaged; said blades forming at their forward bends the portion of the instrument whereby the mouth of the

cavity is first spread, and means for flexing said blades by causing the rear extremities thereof to approach said pins.

9. In a curette, the combination with a
5 channeled or recessed stock provided with a
 douche-passage *a* and having a screw-threaded
 portion B at one end and pins or eyes *c* at
 its other end, of flexible blades G having
 open offset loops *g* by which they are secured
10 to said eyes *c* so as to afford a tapering or
 rounded end to the instrument, the main portions
 of said blades being housed in the channels
 of said stock; a handle F mounted on the
 screw-threaded portion B of said stock and
15 having a flange *g'* provided with a douche-
 tube aperture *f* and against which flange the

free inner ends of said blades G rest and by
which they are expanded as said handle B is
moved forward on the stock; a blade-control-
ling collar J longitudinally movable on said 20
stock and adapted to serve as a means for
closing the contracted entrance of the cavity;
a lock-nut H to determine and limit the move-
ment of the handle F and hold it and the ex-
panded loops against accidental displace- 25
ment, and a douche-tube D passing through
the aperture *f* in handle F and attachable to
the said stock.

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