

(No Model.)

E. LEE.
SURGICAL APPLICATOR.

No. 401,787.

Patented Apr. 23, 1889.

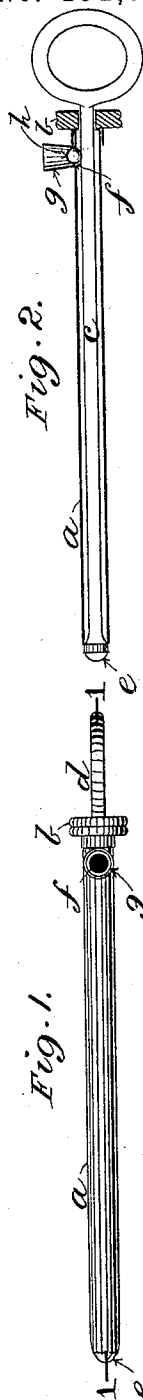


Fig. 2.

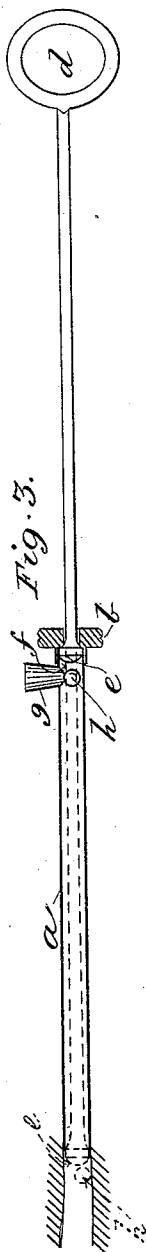


Fig. 3.

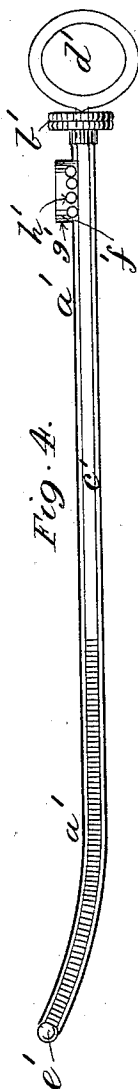


Fig. 4.

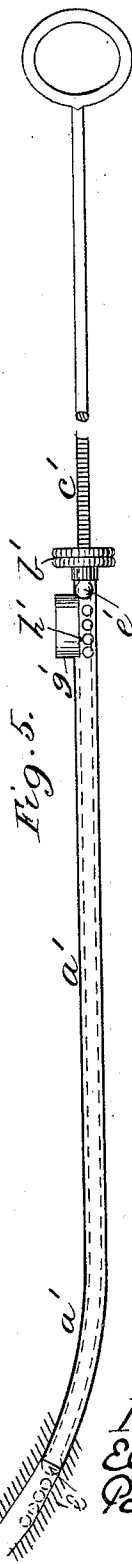


Fig. 5.

WITNESSES.
S. L. Schrader.
Wm. Byrne.

INVENTOR.
Elmer Lee by
Paul Bakewell
his attorney

UNITED STATES PATENT OFFICE.

ELMER LEE, OF ST. LOUIS, MISSOURI.

SURGICAL APPLICATOR.

SPECIFICATION forming part of Letters Patent No. 401,787, dated April 23, 1889.

Application filed September 28, 1888. Serial No. 286,655. (No model.)

To all whom it may concern:

Be it known that I, ELMER LEE, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Surgical Applicators, of which the following is a full, clear, and exact description.

My invention relates to improvements in applicators for the channels and cavities of the human frame which are accessible to surgical aid, and has for its object to apply drugs in their simplest form directly to the diseased parts of such channels and cavities.

It consists in a tube which is inserted within the channel or cavity to be treated, combined with devices whereby drugs, preferably in the form of pellets or granules, are received into and passed through the tube and deposited therefrom within the channel or cavity where the disease is located.

On the accompanying drawings, Figure 1 represents a plan of my improved applicator as used for the straight portion of the male urethra; Fig. 2, a longitudinal section thereof on line 1 1 in Fig. 1; Fig. 3, a similar view showing the successive positions of the parts in the operation of the applicator; and Figs. 4 and 5, corresponding views to Figs. 2 and 3, respectively, of the applicator as used for the female uterus, like letters of reference denoting like parts in the respective figures.

Referring to Figs. 1, 2, and 3, *a* represents a tube which is open at one end and closed at its other end by a cap, *b*, through which passes centrally and freely a rod, *c*, provided outside the cap *b* with a handle, *d*. On the end of the rod *c* within the tube *a* is a knob or button, *e*, which is of slightly less diameter than the inside of the tube *a* and is rounded externally, this rounded portion projecting beyond and coinciding diametrically with the correspondingly-rounded edge of the open end of the tube *a* when the rod *c* is closed to its full extent therein. Through the shell of the tube *a*, at a short distance behind the cap *b*, is a hole, *f*, which opens into the tube *a* from a conical or other suitably-shaped funnel or vessel, *g*.

In operating the applicator constructed as described the tube *a*, with its combined parts in the position seen in Figs. 1 and 2, is in-

serted within the straight portion of the male urethra or other accessible channel or cavity of the human frame to be medically treated until the inner end of the tube *a*, which is now closed by the rounded end or knob *e* of the rod *c*, has arrived at the diseased part of the channel. One or more pellets or granules, *h*, of the drugs suitable for medicating mucous membranes is now placed within the funnel *g* and is prevented from passing therefrom through the hole *f* into the tube *a* by the rod *c*, as shown in Fig. 2, which is then withdrawn from the tube *a* by the handle *d* until the rounded end or knob *e* passes the pellet or granule *h*, when the latter instantly drops from the funnel *g* through the hole *f* into the tube *a*, as shown by full lines in Fig. 3. The rod *c* is then pushed back within the tube *a*, its rounded end *e* propelling the granule *h* along the tube *a* and depositing it through the open end of the tube *a* directly on the diseased surface of the urethra, with which, on withdrawing the tube *a*, it remains in contact and slowly liquefies, whereby the healing property of the drug is fully imparted to the diseased part instead of only imperfectly and with more or less impaired strength, as when the medicine is administered in combination with useless media through the stomach and kidneys, or by injections, or by pencils or bougies in the ordinary manner.

For preventing the granule *h* from being crushed by the shoulder of the rounded end or knob *e* during the withdrawal of the rod *c*, the diameter of the latter is made as large as possible consistent with freedom of movement within the tube *a*, so that the said shoulder, being slight, does not jam or crush the granule *h*, but simply raises it within the funnel *g* during the passage of the knob *e*.

For treating the uterus the various parts of the applicator (see Figs. 4 and 5)—viz., the tube *a'*, rod *c'*, having rounded end or knob *e'*, and handle *d'*, receptacle *g'* for receiving the granule *h'* and communicating with the tube *a'* by hole *f'*—are similar in principle and action to the corresponding parts above described in Figs. 1, 2, and 3 with the following constructive modifications—that is to say, the tube *a'* is elongated and curved for some

distance forward from its open end, as with ordinary uterine applicators—a portion of the rod *c'* extending from its rounded end or knob *e'* being made flexible in the usual manner
5 for yielding to the curved and tangential portions of the tube *a'* as it is moved to or fro within the latter.

I claim as my invention—

10 In a surgical applicator, the combination of a tube open at one end and a rod having a rounded end or knob working freely in said

tube, with a funnel or receptacle carried by and opening into the tube, substantially as shown, and for the purpose described.

In testimony whereof I affix my signature, 15
in presence of two witnesses, this 2d day of July, 1888.

ELMER LEE.

Witnesses:

S. L. SCHRADER,
J. L. HORNSBY.