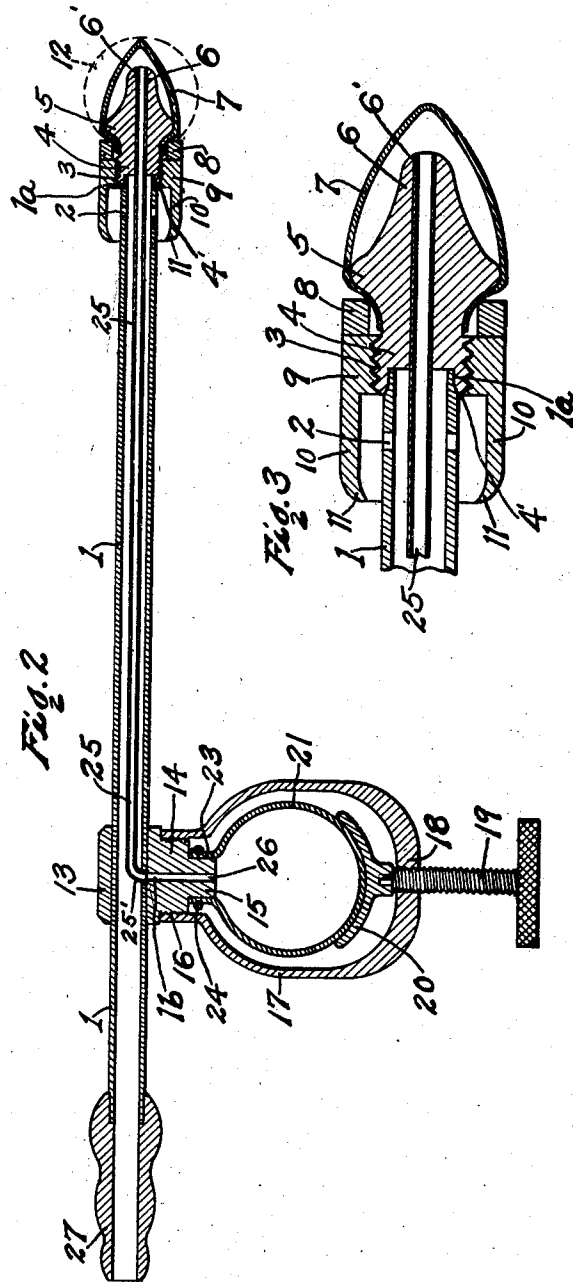
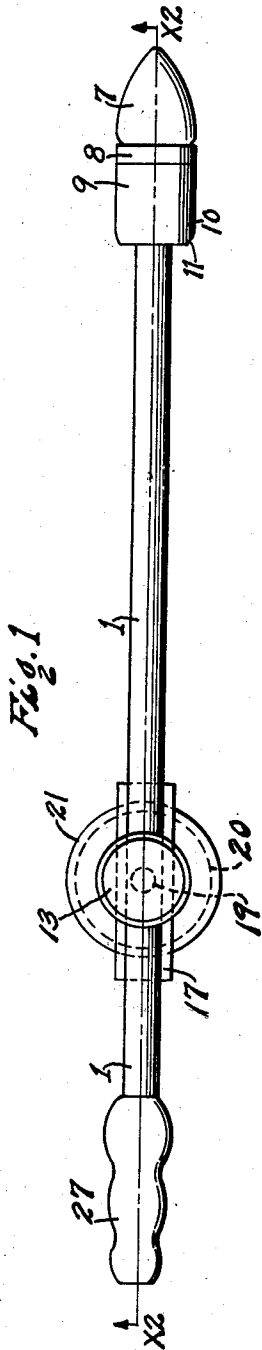


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S. ZACSEK
URETHRAL SYRINGE
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WITNESS:
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URETHRAL SYRINGE

Application filed November 14, 1928. Serial No. 319,222.

My invention relates to an improvement in a sanitary urethral syringe having for its object to cleanse and remove the causes producing stricture in the canal carrying off urine from the bladder.

In this invention I provide a syringe having inflatable urethra closing means associated with a tube for injecting fluid into the canal between the bladder and the stricture, and embodies means for directing outwardly along the canal the cleansing fluid from the syringe for the purpose of removing the causes of the stricture.

This invention includes the provision of means to lock and hold a terminal pneumatic casing upon the nozzle of a perforated tube and in the provision of means for dispensing fluid from within the tube exteriorly and rearwardly thereof, passing the stricture for washing, cleansing and removing conditions causing the same.

A further object of my invention is to provide a sanitary urethral syringe which will work with rapidity, accuracy and ease and at relatively small expense.

An advantage is that thorough cleansing and medication of the urethral canal may be secured without allowing any of the injected fluid or emanations from the diseased canal to pass into the interior passages or cavities of the patient.

It is understood that the apparatus herein disclosed is merely suggestive of a type of apparatus that may be employed in carrying out the new method of operation, and that other suitable apparatus of different construction and arrangement of elements may be employed within the spirit and scope of the invention.

An object of the invention is to make provision whereby the patient may apply the instrument to use and may seal and maintain for any desired time, the urethral canal between the radial discharge nozzle and the inner urethral passage so that the injection of the cleansing or medicated liquid may be long contained without the attention of a physician and without serious inconvenience to the patient.

A feature in this respect is the use of a

compressible pneumatic or air bulb of rubber or the like, and a thumb screw compressor for the bulb so that inflation of the cover cap or casing over the air nozzle can be held inflated to the required degree for the desired time without inconvenience to the patient.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

The accompanying drawing illustrates the invention.

Figure 1 is a top view of a syringe constructed in accordance with this invention.

Fig. 2 is an axial section on line $x-x$, Fig. 1.

Fig. 3 is an enlarged detail of the nozzle and bulb.

1 is an injecting tube provided near one end with perforations 2, forming a radial nozzle or outlet and provided beyond the outlet with a reduced portion 3 and plugged by the neck 4 of a smooth head having an expanded shoulder 5 and a reduced terminal nozzle 6. An expansible cap 7 is fixed to and encloses the terminal nozzle air tight, and is shown as an india rubber bulb stretched over the head and retained by a collar 8 clamped in position by a nut 9 screwed onto the threaded portion 3 of the injecting tube.

Extending from the nut and in spaced relation with the tube 1 overhanging the perforations 2, is the skirt 10 provided with a contracted terminal 11, thereby forming a fluid chamber with the tube 1 providing a path for the travel of the fluid within the tube through the perforations within the skirt and back or rearwardly along within the urethral canal, and outside the tube 1.

The cap 7 disposed upon the nozzle may be inflated to a greater or less extent as indicated by broken lines 12 in Fig. 2.

Secured to the tube 1 between the ends thereof is the sleeve 13 provided with the threaded bushing 14 ending in a nipple 15. Preferably secured to the bushing 14 by the jaws 16 is the stirrup 17 embodying the bar 18 in which is mounted a thumb screw 19 provided with a compressor 20 to act upon the air compressor bulb 21, the neck of which is sealed on and open to the nipple 15. The neck

23 of the air compressor bulb 21 is secured to the nipple 15 by the band 24 of wire.

Piping 25 extending along inside the tube and registering with the mouth of the nozzle 6 and the communicating channel or bore 26 of the bushing 14 and the nipple 15, forms a continuous connection between the air compressor bulb 21 and the cap 7 to inflate the cap.

The tip of the tube with the inflated cap thereon can be inserted into the urethra while the cap is deflated. Then by compressing the bulb air is forced into the cap to inflate it to close the urethra at the mouth of the bladder.

The tube 1 is shown provided with a nipple 27 which is adapted for attachment to a tube leading from a supply of cleansing liquid which is conducted through the tube 1 about the piping 25 and through the perforations 2, past the guiding skirt 10 and the contracted terminal 11 back along outside the tube and rearwardly thereof and inside the urethral canal.

Preparatory to inserting the tube the casing or cap 7 is lubricated and inserted into the canal past the stricture. After the insertion and positioning of the cap beyond the diseased zone, the thumb screw is turned to compress the bulb 21 thus inflating the cap thereby sealing entrance to the bladder.

Following the adjustment of the tube and the inflation of the cap the water supply not shown, is connected with the nipple 27 and the fluid is permitted to run into the tube 1 and through the perforations 2, discharging past the skirt 10, increasing its velocity by reason of the contracted guiding terminal 11 passing the stricture, cleansing and removing the conditions causing the same.

In practical manufacture the receiving end of the air pipe 25 will be bent as at 25' the inner end of the tube 1 will be spun down as at 1^a, and the radial nozzle holes 2 will be bored close to the reduced end 1^a, and a hole 1^b for the bent end 25' of the air pipe 25 will be bored in the side of tube 1 at such distance from the reduced end 1^a as will be required for properly inserting the tube so as to bring the radial nozzle formed by holes 2 beyond the diseased parts of the urethral canal; the head is properly formed with the air nozzle as shown and is bored as at 6' to seat the inner end of the air pipe 25, and the neck 4 is provided with the end socket 4' to seat the reduced end 1^a of the tube; the sleeve 13 as described, is also provided to fit the tube; the distensible cap, capsule or cover 7 and other parts are also provided ready for assembly.

The inner end of pipe 25 is then inserted into the bore 6' and secured with solder, not shown; the tube 1 is then brought over the pipe 25 and its reduced end 1^a is seated in the socket 4' and the tube is adjusted to bring the air hole 1^b into register with the mouth of the

bent end 25' of the air pipe, and such end is secured by solder.

The cover 7, is then stretched over the nipple and the collar is brought into position around the neck to compress the neck of the cover against the head, and then the nut 9 and with the attached skirt 10 thereon is screwed onto the threaded neck 4 of the head to force the collar onto the neck of the cover 7.

The sleeve 13 is brought into position on the tube with the bore 26 in register with the mouth 1^b of the air pipe, thus the other parts are assembled in an obvious way and the instrument is ready for use as above indicated.

The head is of small diameter so as to pass along the urethral canal easily until the stricture or diseased portions are passed; then by setting the thumb screw to expand the cap with air from the bulb 21, the urethral canal is sealed against passage of liquid from the tube 1 and said liquid will flow out of the canal.

Any method of supplying liquid to the tube may be employed within the judgment of the manufacturer and pleasure of the user.

When the cleansing has been effected, the thumb screw is loosened to allow the bulb to expand, thus deflating the cap and allowing the instrument to be withdrawn and cleansed for reuse.

I claim:—

1. In combination with a tube having a flushing nozzle, and provided beyond the nozzle with a head having a reduced tip, and a bore therethrough, an inflatable air-tight cover for said head and tip and a pipe longitudinally disposed within the tube and open to the inside of the cover to inflate the cover, means to supply compressed air to the pipe for inflating the cover.

2. In combination with a tube having a flushing nozzle, and provided beyond the nozzle with a head having a reduced tip, and a bore therethrough, an inflatable air-tight cover for said head and tip and a pipe longitudinally disposed within the tube and open to the inside of the cover to inflate the cover, means to supply compressed air to the pipe for inflating the cover; and a deflator secured to the tube beyond the flushing nozzle and the head.

3. In combination with a tube having a flushing nozzle, and provided beyond the nozzle with a head having a reduced tip, and a bore therethrough, an inflatable air-tight cover for said head and tip and a pipe longitudinally disposed within the tube and open to the inside of the cover to inflate the cover, means to supply compressed air to the pipe for inflating the cover; and a deflator secured to the tube beyond the flushing nozzle and the head, and a skirt on the deflector to direct the flow backward outside the tube.

4. A sanitary urethral syringe comprising a tube having a nozzle, a head and a cover,

pneumatic means for inflating the cover, clamping means for holding the cover upon the head and means extending from the clamping means for directing rearwardly the fluid discharged from the tube rearwardly thereof.

5. In a urethral sanitary syringe comprising a tube provided with a nozzle having a shoulder, an inflatable casing secured to said shoulder over the nozzle, a clamping means comprising an annular skirt in spaced relation with said tube, said tube being provided with perforations disposed within the annular skirt, means for inflating the casing whereby fluid within the tube may be ejected through the perforations and directed past the annular skirt rearwardly of the tube.

6. A urethral syringe comprising a tube having lateral outlets near one end, a head fixed to the tube beyond the outlet, and provided with an air nozzle; a distensible cover for the air nozzle; an air pipe to deliver air inside the cover; an air bulb connected to the air pipe; and a compressor operable by a screw to compress the bulb for the purpose of inflating and holding inflated the distensible cover so that when the tube with its cover is inserted into the urethra for the purpose of injecting liquid therein to a patient can cause the inflation and maintain the same until the cleansing is effected and then release the instrument with slight inconvenience.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 2d day of November, 1928.

STEFAN ZACSEK.

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