the urine flows continuously from it, drop by drop. When the retained catheter proves irritating this is usually because it has been introduced too far or not far enough, and is not draining the bladder properly.

3. The method of fixation has been described (p. 211).

4. While the catheter is in place the penis should be laid up over the groin, or else an ulcer will form at the peno-scrotal angle.

5. Cleanliness is insured by using a clean catheter in the first place, by changing the catheter and cleansing it and the urethra every few days, by using daily irrigations of the bladder if there is cystitis, by wrapping the penis in a wet dressing of bichlorid (1 : 10,000), and by using an aseptic urinal. An ordinary glass bed urinal will suffice. A rubber tube is led into it from the catheter, and a little (1 : 40) carbolic solution kept in the vessel. The urinal is to be scoured and boiled daily.

When the retained catheter acts efficiently it reduces urinary fever and septicemia. When it acts inefficiently it produces them. Inefficient action may be due to plugging of the catheter by pus or blood, or to an idiosyncrasy of the patient. If his local irritability is such that the retained catheter stirs him up, there's an end to it; it must be withdrawn. A certain amount of local irritation is quite common during the first twenty-four to forty-eight hours; but, as a rule, this is controllable by anodynes.

If sounds and the retained catheter fail to diminish the obstruction, it must be endured or removed by operation.

Third Stage.—When there is complete retention with overflow the treatment is much the same as when the retention is incomplete. The first catheterizations must be conducted according to the rules laid down for acute retention (p. 277). The catheter should be passed not more than 3 or 4 times in the twenty-four hours, if possible, even though a pint is drained off each time, for the distended and atonied bladder endures this retention better than the more frequent passage of a catheter. If the complete retention is of short standing it may, perhaps, be relieved by the retained catheter. If there is much irritability or inflammation, the patient may have to pass the catheter 6, 8, 10, or more times a day to alleviate his sufferings. Such a condition is unbearable and demands operation if not speedily relieved by palliative measures, notably the retained catheter.

Overflow.—Overflow is the most disagreeable symptom of complete retention. If systematic catheter life can be instituted, the overflow is usually controlled; but if the bladder is contracted or irritable, the overflow may continue, to the great annoyance of the

patient. If this symptom is not relieved by the catheter, irrigations, the retained catheter, etc., and the patient will not submit to operation, he must wear a urinal.

Of the many varieties of this instrument found in the shops, I know of only one that accomplishes the two necessary objects of being safe as well as comfortable. This urinal (Fig. 80) was devised by a gentleman suffering from true incontinence. It is made of soft rubber, in the form of a large pouch, capable of receiving the whole scrotum as well as the penis, and large enough to allow a free circulation of air around the parts, thus preventing sweating or excoriation. From this pouch two broad bands of rubber extend up flatwise, one over the belly, the other over the nates to the waist, where they are attached by buttons to the suspenders. Below, the pouch terminates in a long, flat bag, attached by tapes to the thigh and leg, and reaching nearly to the ankle, so that no urine can possibly spill out during any ordinary motion. A metallic cap at the bottom unscrews to drain off the urine and clean the instrument, which should be daily washed out with soap and water and occasionally boiled.

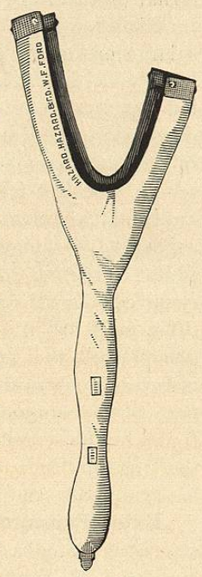

Fig. 80.

This urinal is useful only by day. During the night, when the patient's symptoms are at their worst, he must be satisfied to relieve himself as much as possible with the catheter and—wet the bed. A large rubber penis bag may afford some relief at night, if the patient can accustom himself to lie on one side and not to roll over in his sleep.

TREATMENT OF COMPLICATIONS

The treatments of *prostatitis*, *cystitis*, *irritability*, *obstruction to the catheter*, and *retention* have already been dealt with. True *incontinence* like overflow must be treated by the urinal. It may sometimes be relieved by stimulating instillations (nitrate of silver, 1 : 1,000) into the posterior urethra. If such measures fail, perineal section offers the hope of a cure, and can certainly do no harm.

Stricture.—Soft stricture in the bulb sometimes results from hypertrophy of the prostate and causes annoying spasm of the cut-off muscle. It is easily cured by the passage of a few sounds. Or-

ganic stricture requires dilatation in order that the prostate may be properly dealt with and this extra cause of retention removed. If there is much retention, and the kidneys are damaged, there is notable danger of chill and septicemia, to avoid which every precaution must be taken (p. 565). If dilatation is impracticable, external urethrotomy and perineal prostatectomy should be performed.

Stone.—It is often impossible to identify a small stone behind a large prostate. The X-rays and the cystoscope may be employed, but by neither means can stone be excluded with certainty if the bladder is sacculated or the *bas fond* deep. I have recently in my own practice had a striking example of this fact. I touched a stone in the bladder of a man suffering intensely with a large prostate and severe cystitis. I performed litholapaxy, and his symptoms were, if anything, aggravated. A month later—no stone being found—he submitted to epicystotomy. A stone the size of a lima bean was found in the *bas fond*, entirely out of reach of the searcher. It was removed, together with a prostatic middle lobe, and the patient became, and has remained, entirely well. This case exemplifies the general rule that if a stone complicates a hypertrophied prostate, it is futile to attempt litholapaxy. Perineal prostatectomy and litholapaxy or suprapubic section should be performed. If the stone is not found by the searcher or the cystoscope, the issue is only delayed. In the long run the patient will submit to operation as a happy relief to his symptoms, and the stone will be found and removed.

False Passage.—The clinical history of false passage is characteristic enough. A prostatic obstruction is encountered by the surgeon. He cannot surmount it; he uses force; something gives way, and the instrument (always a metallic one) is twisted out of its median course, and the patient cries out with pain. It may be forced into the bladder and the urine withdrawn, or the bladder may not be reached. In either event the withdrawal of the instrument is followed by free hemorrhage, and its reintroduction is usually more difficult and painful than ever.

With such a condition of affairs it is usually best to drain the bladder several times by suprapubic aspiration before attempting any urethral instrumentation. In the meanwhile hot sitz baths, enemas, etc., should be employed to relieve prostatic congestion (p. 131). After twenty-four or forty-eight hours of such treatment a double-elbowed catheter or Guyon's elbowed catheter (p. 277) is introduced with the greatest gentleness. These instruments, following the roof, will often escape the mouth of the false passage, which is on the floor. Where they fail the prostatic silver catheter may succeed. Special instruments, of which one part enters the passage

while another avoids it, should never be used, since they keep the false passage open, whereas the surgeon's chief endeavour should be to encourage it to close.

If a woven instrument can be introduced into the bladder, it had better be tied in for two or three days. The false passage will thus be encouraged to close, and subsequent catheterizations will be comparatively easy. If, on the other hand, catheterism is impossible, or if an abscess of the prostate forms, the knife must be resorted to.

Epididymitis.—This is one of the most annoying complications of this disease. The epididymis may be stirred up by every passage of the catheter, and yet the passage of the catheter may be imperative. The treatment for such a case is that of recurrent epididymitis (p. 728), with vasectomy as a last resort. During an acute epididymitis the passage of the catheter should be dispensed with, if possible (p. 728).

Renal Complications.—*Nephritic retention* (p. 544), *pyelonephritis* (p. 553), and *urinary septicemia* (p. 563) require the treatment appropriate to them. There is no need to repeat the special features here, although these often take a prominent place in the treatment of prostatic hypertrophy.