

[72] Inventor **Kermit B. Gosnell**
 311 N. 34th St., Philadelphia, Pa. 19104
 [21] Appl. No. 755,879
 [22] Filed Aug. 28, 1968
 [45] Patented Mar. 23, 1971

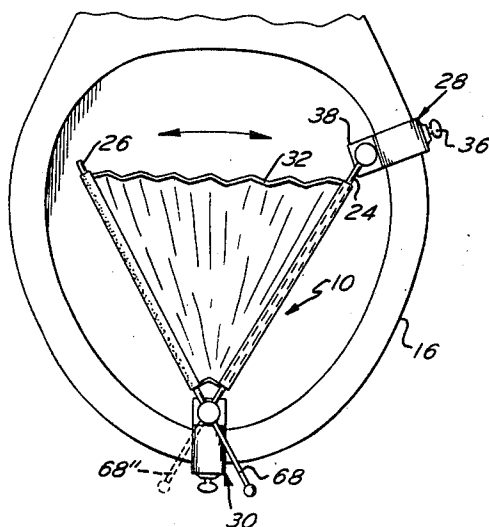
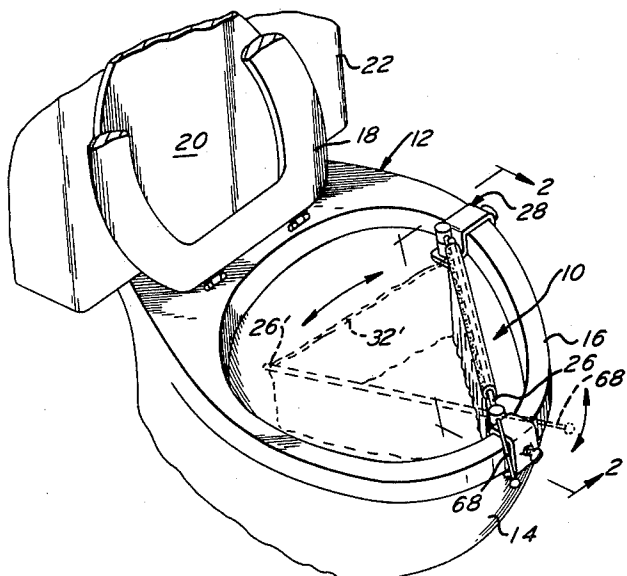
Primary Examiner—William F. O'Dea
 Assistant Examiner—Henry K. Artis
 Attorney—Caesar, Rivise, Bernstein & Cohen

[54] **URINE SPECIMEN COLLECTOR**
 5 Claims, 6 Drawing Figs.

[52] U.S. Cl. 4/110
 [51] Int. Cl. E03d 13/00
 [50] Field of Search 4/6, 141,
 142, 1, 110, 7, 134

[56] **References Cited**
UNITED STATES PATENTS
 3,401,409 9/1968 Ekrut 4/142

ABSTRACT: A urine specimen collector comprising a pair of rods which may be rotated toward and away from each other. A flexible specimen bag is secured to the two rods. One rod is rigidly mounted on a toilet bowl and the other rod is rotatably mounted with respect to the rigidly mounted rod. The pivoting of the rotatably mounted rod will open the flexible bag and position the bag beneath the urine stream of a patient sitting on the toilet whereby a urine specimen can be collected in the bag. When a sufficient specimen is collected, the rotatable rod is pivoted toward the fixed rod and subsequently the bag containing the specimen is removed from the rods.



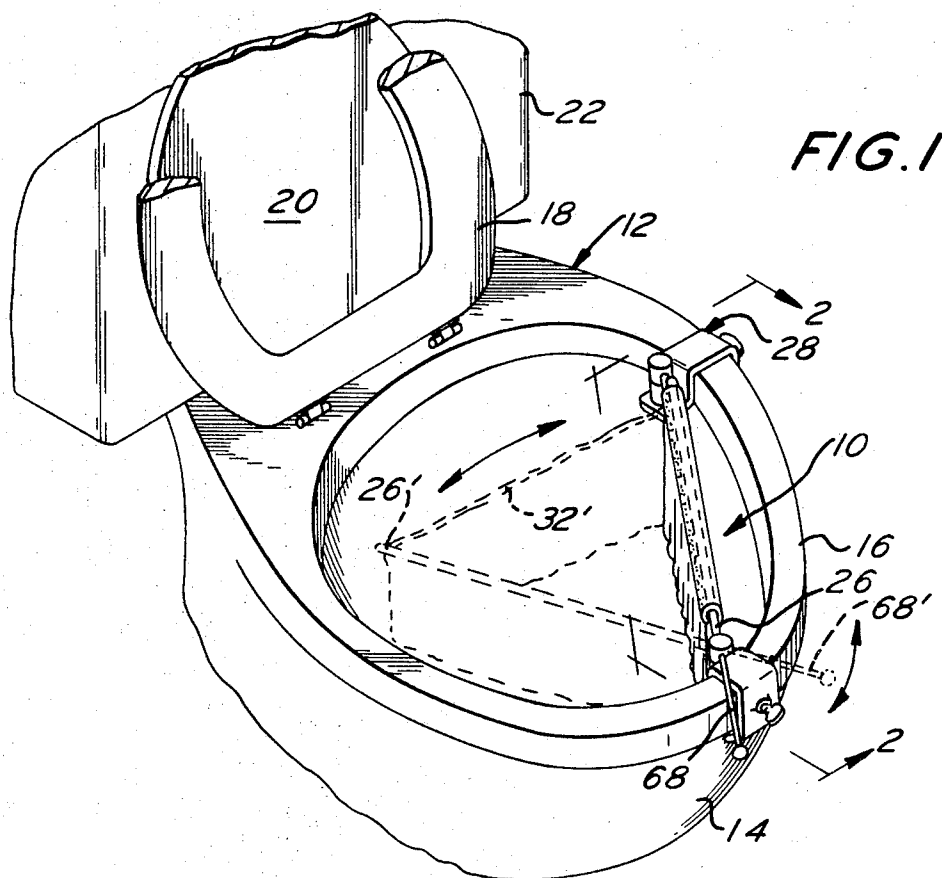


FIG. 1

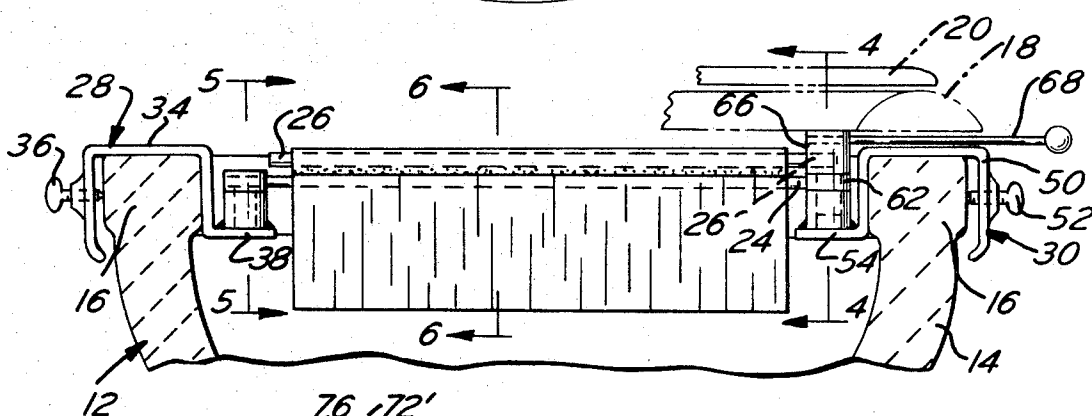


FIG. 2

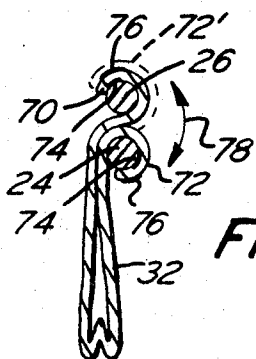


FIG. 6

INVENTOR
KERMIT BARRON GOSNELL

BY

Caesar, Rivise,
Bernstein & Cohen
ATTORNEYS.

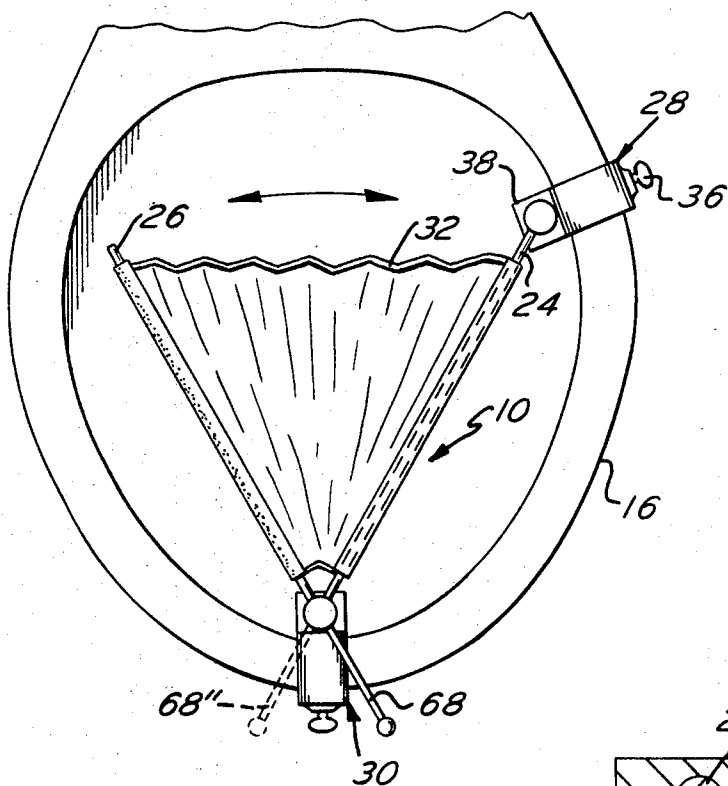


FIG. 3

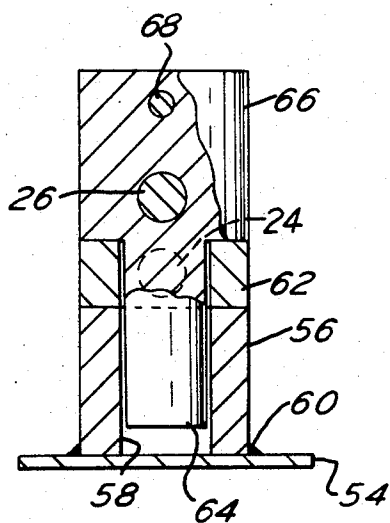


FIG. 4

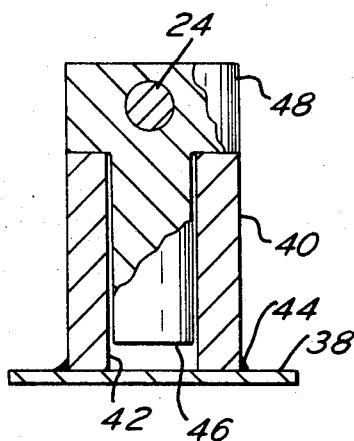


FIG. 5

INVENTOR
KERMIT BARRON GOSNELL
BY

*Caesar, Rivise,
Bernstein & Cohen*
ATTORNEYS

URINE SPECIMEN COLLECTOR

This invention relates to a specimen receptacle, and more particularly, to a device usable in the collection and storage of urine.

The present practice of collecting urine for examination is to have the patient deposit the urine in a bottle or other rigid vessel, which vessels are subsequently capped and labeled. These vessels have often proved to be awkward to fill and difficult to manipulate, especially for female patients. Additionally, the glass bottles are always susceptible to breakage which would destroy the specimen.

Similar difficulties have occurred in procuring feces samples in the presently employed containers because the patient must either defecate into small containers by assuming unnatural positions, or a hospital attendant must remove the feces from a toilet bowl with a spoon or similar device. Furthermore, the present containers are subject to contamination by bacteria or other foreign matter if the containers are left uncapped after the sample is taken and while in the laboratory during the various testing procedures.

An improvement over all of the prior types of specimen collectors resides in the use of a sanitary plastic bag for collecting the specimens. The bag is secured to the toilet seat by adhesive strips, and the patient can urinate or defecate into the bag while assuming a normal position on the toilet seat. Thereafter the bag can be sealed, transported to the laboratory, and the necessary tests can be made. Thereafter the bag and its contents can be disposed of. Such a bag is shown in U.S. Pat. No. 3,346,883.

Even though the bag shown in U.S. Pat. No. 3,346,883 is a marked improvement over the prior-art receptacles, it still possesses one major shortcoming insofar as the collection of urine is concerned. Thus, the bag is rigidly mounted in place and can only be used for collecting the full discharge of urine from a patient. Many times when a urine specimen is desired, especially with female patients, only the intermediate portion of the urine discharge can be used. The reason for this is that the intermediate portion is the least contaminated portion of the urine discharge. The initial portion of the discharge is contaminated by any foreign substances within the urethra or the uncleaned areas, especially of a woman. The final portion of the discharge is usually accomplished by a certain amount of straining which will cause a contamination of the urine by glandular secretions. Thus, from the standpoint of testing of the urine, the intermediate portion has been found to give the most reliable results.

Attempts at collecting the intermediate portion of the urine have always met with a great number of problems. Attempts at stopping the flow of the urine during the discharge are not always successful. Alternatively, a vessel can be placed into the urine stream during the discharging of the urine, and after a sufficient amount of urine has been collected, the vessel can be removed. Obviously this is not a satisfactory arrangement as it is most sloppy and unpleasant to the patient collecting the urine. However, prior to this invention, this was the most effective way of collecting the intermediate portion of the urine discharge.

The device of this invention overcomes all of the prior-art problems of the collection of urine. The receptacle used in the device of this invention can be made of a flexible breakproof plastic, and therefore has all of the advantages of the plastic containers now on the market. Furthermore, the device of this invention is manually operable to place the receptacle within the urine stream and remove it from the urine stream with absolutely no discomfort or unpleasantness to the patient. The operation of the device is quick and simple, and the patient's hands will never come in contact with the urine. In fact, the device is readily adapted to having another person, such as a doctor or nurse, collect the urine while the patient assumes a normal position on a toilet.

It is therefore an object of this invention to provide a novel urine specimen collector.

It is another object of this invention to provide a urine specimen collector which is readily adapted to collect the intermediate portion of the urine discharge.

These and other objects of this invention are accomplished by providing a specimen collector comprising a receptacle, means for supporting the receptacle on a toilet and out of the stream of discharged urine when a person is sitting on the toilet, and means for moving said support to position said receptacle below the discharge of said urine.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

FIG. 1 is a perspective view, partially in phantom, of the urine specimen collector of this invention when mounted on a toilet bowl;

FIG. 2 is an enlarged sectional view taken along the line 2-2 of FIG. 1;

FIG. 3 is a top plan view of the urine specimen collector of this invention when mounted on a toilet bowl;

FIG. 4 is an enlarged sectional view taken along the line 4-4 of FIG. 2;

FIG. 5 is an enlarged sectional view taken along the line 5-5 of FIG. 2; and

FIG. 6 is an enlarged sectional view taken along the line 6-6 of FIG. 2.

Referring now in greater detail to the various figures of the drawings wherein similar reference characters refer to similar parts, a urine specimen collector embodying the present invention is generally shown at 10 in FIG. 1. Device 10 is shown as being mounted on a toilet 12 which includes a bowl 14, a rim 16, a seat 18, a lid 20 and a tank 22.

As best seen in FIG. 3, device 10 basically comprises a lower rod 24, an upper rod 26, a pair of brackets 28 and 30 and a flexible bag 32. As best seen in FIG. 2, bracket 28 includes a U-shaped member 34 which rests on rim 16. A thumbscrew 36 is threadably secured in member 34 and is used to removably secure the bracket 28 on the rim 16. A flange 38 projects into the area of the toilet bowl and horizontally outward from member 34. As seen in FIG. 5, a cylindrical member 40 having a bore 42 with a circular cross section is welded to flange 38, as shown at 44.

A cylindrical member 46 is removably mounted in bore 42 of cylinder 40. An annular flange 48 at the top of member 46 rests on the top of cylinder 40. Rod 24 is secured in flange 48.

As best seen in FIG. 2, bracket 30 includes a U-shaped member 50 which is mounted on rim 16. A thumbscrew 52 is used for removably mounting member 50 in place. A flange 54 projects horizontally from member 50 into the area of toilet 14. A cylinder 56 having a bore 58 of circular cross section is welded to flange 54, as shown at 60.

A ring 62 rests on the top of cylinder 56, and is removable therefrom. Rod 24 has one end secured in ring 62, as shown in FIG. 2. A cylinder 64 is rotatably mounted in bore 58 and passes through ring 62. An annular flange 66 extends from the top of cylinder 64 and rests on the top of ring 62. Thus, as seen in FIG. 4, the cylinder 64 and its associated flange 66 maintain ring 62 in place.

Rod 26 is secured in flange 66 and projects horizontally outward therefrom, as best seen in FIG. 2. A second rod 68 (FIG. 3) is secured in flange 66 and projects horizontally outward therefrom in a direction away from the toilet bowl.

Flexible bag 32 is preferably formed from a liquidproof plastic such as polyethylene or any of the vinyl sheet materials. Bag 32 includes lips 70 and 72 at its top edge. Each lip is provided with a strip of pressure-sensitive adhesive 74 on its outer surface and a second strip of pressure-sensitive adhesive 76 on its inner surface. In the unused condition, the adhesive can be covered with protective strips, such as glazed paper, or other materials coated with adhesive coatings, as is well known in the pressure-sensitive adhesive art. The bag 32 is provided with a plurality of accordion pleats, as seen in FIG. 3, whereby

the bag can be opened to cover substantially the entire width of the toilet bowl, as shown in FIG. 3.

The device of this invention is used by securing bag 32 on rods 24. This is accomplished by removing the protective strips from adhesive coatings 74 and fastening the bag to the rods through the use of the adhesive coatings, as best seen in FIG. 6. After the bag is applied to the rods, the rods will be placed in the position shown in full line in FIG. 1. As seen in FIG. 2, the bag has a relatively low height, and therefore in use its lower edge will be above the level of the water within the toilet 12. As further seen in FIG. 2, the brackets 28 and 30 are of a sufficiently low height to permit the toilet seat 18 to sit above the rod 68, and therefore, the rod 68 is freely movable in a horizontal plane beneath the toilet seat.

The patient whose urine specimen or feces specimen is to be collected will sit on the toilet seat 18 in the normal manner. Prior to collecting the specimen, rod 68, which serves as a handle, is rotated by the patient from the position shown in full line in FIG. 1 to the position shown in phantom at 68' in FIG. 1. This will in turn rotate rod 26 from the position shown in full line in FIG. 1 to the position shown in phantom at 26' in FIG. 1. In this way, the accordion pleated bag 32 will be opened to the extent shown in FIG. 3 and will be in a position to collect the feces, the urine, or both, or the patient. After the feces or urine has been collected, the rod 68 is rotated back to the position shown in full line in FIG. 1 or the position shown in phantom at 68'' in FIG. 3. Thereafter, the bag 32 is closed by rotating lip 72 in the direction of arrow 78 in FIG. 6 to the position shown at 72' in FIG. 6. The bag is sealed by pressing the two adhesive strips 76 together.

Utilizing the device of this invention, it is possible to obtain samples of human waste discharge while the patient is in a normal position for excreting the discharge. The patient's hands will not come in contact with the waste material and the unpleasantness normally associated with obtaining the specimens is completely avoided. The discharge is sealed within the sanitary bag 32 and is easily transported to a laboratory for testing.

One of the major advantages of the device of this invention is the fact that it can be used for obtaining the intermediate portion of urine flow without ceasing the discharge of urine and without the patient's hands coming in contact with the urine. Thus, the patient will sit on the toilet seat and discharge urine directly into the toilet bowl. After the initial discharge, the patient will rotate the rod 68 from the position shown in full line in FIG. 1 to the position shown in phantom in FIG. 1 thereby opening the bag 32 and placing it in a position to receive the urine. After the intermediate portion of the urine discharge has been received in the bag, the rod 68 is immediately returned to the position shown in full line in FIG. 1, and the urine discharge is completed into the toilet. The entire process is carried out without interrupting the urine flow. The device of this invention will be particularly effective in the collection of female urine, regardless of whether a partial specimen or total specimen is required.

The brackets and rods of device 10 can be made of plastic or metal. Preferably they are made of a material that can be readily sterilized and for this reason stainless steel is preferred. The rods 24 and 26 are readily removable from the secured U-shaped members 34 and 50 by lifting cylinders 46 and 64 out of their respective bores. Likewise, when cylinder 64 is removed, ring 62 can be lifted off cylinder 56. Thus, the removed elements can readily be sterilized while leaving the supporting elements on the rim 16.

Although the device has been disclosed as showing the bag 32 adhesively secured to rods 24 and 26, other means of securement can be used. For instance, spring clips can be placed on the rods 24 and 26 and the bag can be clipped in place. Additionally, the bag 32 can be provided with tubular sleeves at its top and the sleeves can be slid over the rods 24

and 26 to hold the bag in place.

The bag 32 can also be sealed by means other than the adhesive strips 76. Thus, an airtight seal can be made by heat-sealing the top of the bag. Additionally, lip 72 can be provided with a tongue and lip 70 can be provided with a snap-type groove, and the bag can be closed by snapping the lips together.

Another advantage of the device of this invention is that it is an excellent aid for collecting the feces and urine specimens of children. It has been found to be most difficult to have children urinate or defecate into the various vessels that have been designed to collect these excrements. However, utilizing the device of this invention the children can assume a normal position on a toilet seat and will therefore have no difficulty in providing the necessary specimen. If desired, the positioning of the bag or the size of the bag can be altered in order to insure that only a urine or a feces specimen will be obtained even though a child may defecate and urinate while sitting on the toilet. Thus, the urine or feces will be deposited directly into the toilet while the desired specimen will be received in the bag. Therefore, the device of this invention will overcome all of the anxieties children normally experience when having to fill containers designed for collecting feces or urine specimens.

Without further elaboration the foregoing will so fully illustrate my invention that others may by applying current or future knowledge, readily adapt the same for use under various conditions of service.

I claim:

1. A collector for human waste comprising a first rod and a second rod, means for releasably securing said first rod to the rim of a toilet, said securing means comprising a pair of brackets, said second rod being rotatably mounted on said first rod, means for rotating said second rod relative to said first rod, and a flexible plastic receptacle releasably secured to said rods, said receptacle having a pair of sides forming an openable top, with one of said sides being secured to said first rod and the other of said sides being secured to said second rod, whereby said receptacle can be moved into a stream of urine by rotating said second rod relative to said first rod, thereby opening said receptacle under said urine stream, and said receptacle can be moved out of said urine stream by rotating said second rod in the opposite direction relative to said first rod.

2. The collector of claim 1 wherein said receptacle is secured to said rods by a pressure sensitive adhesive.

3. The collector of claim 1 and further including means for sealing said receptacle after the urine has been received by said receptacle, said sealing means comprising pressure sensitive adhesive on said receptacle.

4. In combination, a toilet and a collector for human waste, said collector comprising a first rod and a second rod, said first rod being releasably secured to the rim of the toilet by a pair of brackets, said second rod being rotatably mounted on said first rod, means for rotating said second rod relative to said first rod, and a flexible plastic receptacle releasably secured to said rods, said receptacle having a pair of sides forming an openable top, with one of said sides being secured to said first rod and the other of said sides being secured to said second rod, said receptacle being out of the stream of urine when a person is sitting on the toilet and the rods are rotated into an abutting position, and said receptacle being movable into the stream of urine by rotating said second rod relative to said first rod, thereby opening said receptacle under said urine stream.

5. The combination of claim 1 wherein said means for rotating said second rod relative to said first rod is positioned between the rim of said toilet and the seat of said toilet, said rotating means comprising a handle projecting outwardly from said toilet.

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. 3,571,817

DATED MARCH 23, 1971

KERMIT BARRON GOSNELL

It is certified that errors appear in the above identified patent and that said Letters Patent are hereby corrected as shown below:

COLUMN 3, LINE 24 "or", second occurrence, is changed to --of--.

CLAIM 5, LINE 1 "1" is changed to --4--.

Signed and sealed this 13th day of July 1971.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents