A stool specimen container serves also as the original receiver from the donor. The receiver-container is nested within a tub which, when receiving, floats on the water in a water closet supported in position by a frame which rests on the closet bowl. After deposit of the specimen, the covered container is lifted from the tub. All parts of the assembly may be disposable.

8 Claims, 4 Drawing Figures
STOOL SPECIMEN COLLECTOR

BACKGROUND AND SUMMARY OF THE INVENTION

For certain purposes, laboratory examination of human feces is an important part of the diagnostic process. Stool specimens are taken and examined for conditions relative to the ailment of the patient. For example, the fecal matter may be examined for the presence of parasites, occult blood or fat. Gross characteristics, such as shape, size, color, weight, consistency and odor, may be pertinent. Cultures may be taken to determine the presence of bacteria, fungi, viruses and protozoa.

For any such examination, a specimen of the patient's stool must, of course, be made available to the laboratory. It should not be contaminated by urine or other extraneous matter. The collection of such a specimen has been a difficult, disagreeable and even dangerous task for both medical personnel and the patient. Usually, the patient is handed a small spatum cup and then left to his own devices for collection of a stool specimen by whatever method he is able to devise. Sometimes a sample is retrieved from the toilet or a bed pan or potty is used. However taken, part or all of the specimen must usually be transferred to another and proper container. Any such handling of the fecal matter by nurses or other medical personnel involves the danger of contraction of infectious hepatitis. Because of this danger and the generally disagreeable nature of the collection process, fecal examination, although indicated, is frequently neglected.

The object of this invention is to provide a stool specimen collector which facilitates the entire process of collecting and transferring a stool specimen to the laboratory, which makes it possible to directly receive the stool in the container in which it is sent to the laboratory, avoiding the necessity of any transfer or other handling of the fecal matter by either the donor or medical personnel, and which largely avoids contamination of the feces specimen by urine or other matter. The collector is designed to be placed in a water closet type of toilet so that the patient may defecate naturally and, after completing normal abatements, may cover the container and remove it for delivery as necessary, disposing of the container supporting structure by simply throwing it away.

Other objects and advantages of the invention will become apparent as the description thereof proceeds.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a cross-sectional view showing the stool specimen collector arranged in a water closet for use.

FIG. 2 is a plan view of the collector supporting frame before folding for use.

FIG. 3 is a plan view, partly broken away, showing the receiver-container and lid therefor.

FIG. 4 is a cross-sectional view of the container taken at line 4—4 of FIG. 3. The container is shown in nested position in the supporting tub which is indicated by dot-dash lines.

DESCRIPTION OF AN EXEMPLARY EMBODIMENT

The stool specimen collector assemblage comprises a receiver-container 1 nested within a tub 2 which is arranged in an opening 3 in a U-shaped supporting frame 5.

4. Lid 5 covers the container to enclose the stool specimen therein. Both the receiver-container 1 and the tub 2 may be made of plastic material having sufficient strength and rigidity to maintain the forms of these articles under the conditions of use. They may be rectangular, as shown, or may have circular, oval or other shape. The side walls of at least the receiver-container taper inwardly toward their bottoms so that the container can nest loosely within the outer tub.

Beads 6 and 7 at the peripheries, respectively, of container 1 and tub 2 provide strength and assist in the positioning of the container within the tub. The vertical grooves 8 formed in the side walls are optional, being provided to stiffen these walls. Lid 5 is preferably provided with a tab 9 which extends outwardly beyond the normal flange 10 of the lid and beyond the flange 11 of container 1 to facilitate removal of the lid from container. The flange 11 of container 1 extends outwardly beyond flange 12 of tub 2 so that the container may readily be lifted up, out of the tub after the stool specimen has been deposited.

Frame 4 may be economically made of stiff corrugated board, fold lines 13 being impressed to facilitate the forming of the frame into the desired configuration (as shown in FIG. 1) for use. The side arms 14 and 15 are as narrow as they may be made without rendering them too weak to serve the intended purpose of the frame in order to adapt the frame for use with the somewhat varying dimensions and contours of water closets. Also, opening 3 in the middle section of the frame is provided in the offset location shown in FIG. 2 by extending the frame at this location in a direction which will be towards the rear of the water closet when installed. The purpose is to locate this opening, and consequently the receiver-container, immediately underneath the rectal area of the donor when seated normally upon the toilet. This rearward location is also desirable to minimize the catchment of urine in the case of female donors.

The stool specimen collector may be supplied as a kit comprising the parts described. To use it in the collection of a stool specimen, the seat 16 of a water closet type of toilet is lifted out of the way. The collector frame is then bent to the fold lines of the supporting structure, which is then placed in position upon the toilet bowl 17 as shown in FIG. 1. The toilet seat is then lowered to rest upon the frame, holding it in position, and tub 2, having receiver-container 1, lid removed, nested therein, is then lowered down through opening 3 into the water standing in the water closet. The arrangement is such that in most water closets frame 4 serves only to locate and restrain the container-tub assembly from sidewise movement, the latter supporting itself by floating upon the water, as shown. This arrangement minimizes the load upon the frame so that the latter may be made of relatively light weight material and also places the receiver-container well below the seat of the toilet so that the stool may separate from the donor in a normal manner. After defecation and normal procedures are completed, the person may either place the lid on the container and lift the thus covered container from the tub or may first remove the container and thereafter cover it. The frame and tub may then be discarded and the specimen delivered to medical personnel in the covered container for notation of the name of the donor and other desired information on the container and for delivery to the laboratory.
The stool specimen collector described makes it possible to complete the normally very disagreeable task of collecting a stool specimen without any disagreeable aspect from the standpoint either of the donor or of medical personnel responsible for the procurement and transmission of the specimen to the laboratory. The donor merely defecates normally after inserting the collector in the toilet, then simply closes the container for delivery and throws away the frame and tub. The container is not even wetted on the outside, being protected by the tub from contamination by the water, and possibly urine, contained in hepatitis toilet. The danger of contraction of infectious hepatitis by medical personnel is completely eliminated since there is no contact whatever with the fecal matter. The specimen is uncontaminated and the entire stool may be accommodated in the container for study of gross microscopic and other characteristics in the laboratory.

All parts of the container are preferably made of materials which can reasonably be disposed of after a single use, avoiding possible cross contamination and the mess and cost of cleaning the parts. As used in the claims, the expression "disposable material" means material which is sufficiently cheap to be discarded after a single use. The frame or the parts may be of more permanent and reusable construction if desired. Also, the collector may also be used for the collection of urine, having special advantage in the case of female donors. The orientation of the frame in the water closet may be reversed for this purpose to place the container in a forward position.

The collector assemblage may be packaged in individual kits and may be used with equal convenience in the hospital, clinic or home.

I claim:

1. A stool specimen collector comprising a receiver-container having a removable lid, a water impervious tub sufficiently larger than said receiver-container to accommodate the latter in loosely fitting nested position therein, and means adapted to hold said tub with said receiver-container nested therein in the bowl of a water closet at a location to receive a stool from a donor seated upon the water closet.

2. A stool specimen collector in accordance with claim 1 wherein the receiver-container is made of disposable plastic.

3. A stool specimen collector in accordance with claim 1 wherein the receiver-container and the tub are made of disposable plastic.

4. A stool specimen collector in accordance with claim 1 wherein the tub holding means comprises structure which limits sidewise movement of said tub while permitting said tub to float in the water in the water closet.

5. A stool specimen collector comprising a U-shaped frame having side arms and adapted to be seated in the bowl of a water closet supported thereby through said side arms, said frame having an opening in the middle of the bottom portion thereof, a tub arranged in said opening and a receiver-container nested within said tub to receive a stool specimen directly from a donor.

6. A stool specimen collector in accordance with claim 5 wherein said tub, said receiver-container and said frame are made of disposable materials.

7. A stool specimen collector comprising a water closet including a bowl and water standing therein, a U-shaped frame arranged within said bowl and having side arms resting upon the top of said bowl, said frame having a bottom portion disposed above said water and having an opening therein, a tub loosely arranged in said opening and floating on said water, and a receiver-container nested within said tub to receive a stool specimen normally defecated thereinto by a donor seated upon said water closet.

8. The method of collecting a stool specimen which comprises the steps of arranging a tub of water impervious material about as far down as possible in the bowl of a water closet with the open top thereof above the water therein, placing a receiver-container in said tub, defecating the stool specimen into said receiver-container from normal seated position upon said water closet, and removing said receiver-container from said tub and covering the same.

* * * * *
UNIVERS STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,754,287 Dated August 28, 1973

Inventor(s) Lawrence A. Taylor

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

Col. 1, line 66, "receivercontainer" should be --receiver-container--;
Col. 2, line 30, "section" should be --section--;
Col. 3, line 12, after "contained in" delete "hepatitis" and insert --the--;
Col. 3, line 13, "heptitis" should be --hepatitis--;
Col. 4, line 21, "reciever" should be --receiver--;
Col. 4, line 37, "receivercontainer" should be --receiver-container--.

Signed and sealed this 18th day of December 1973.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR. RENE D. TEGTMeyer
Attesting Officer Acting Commissioner of Patents