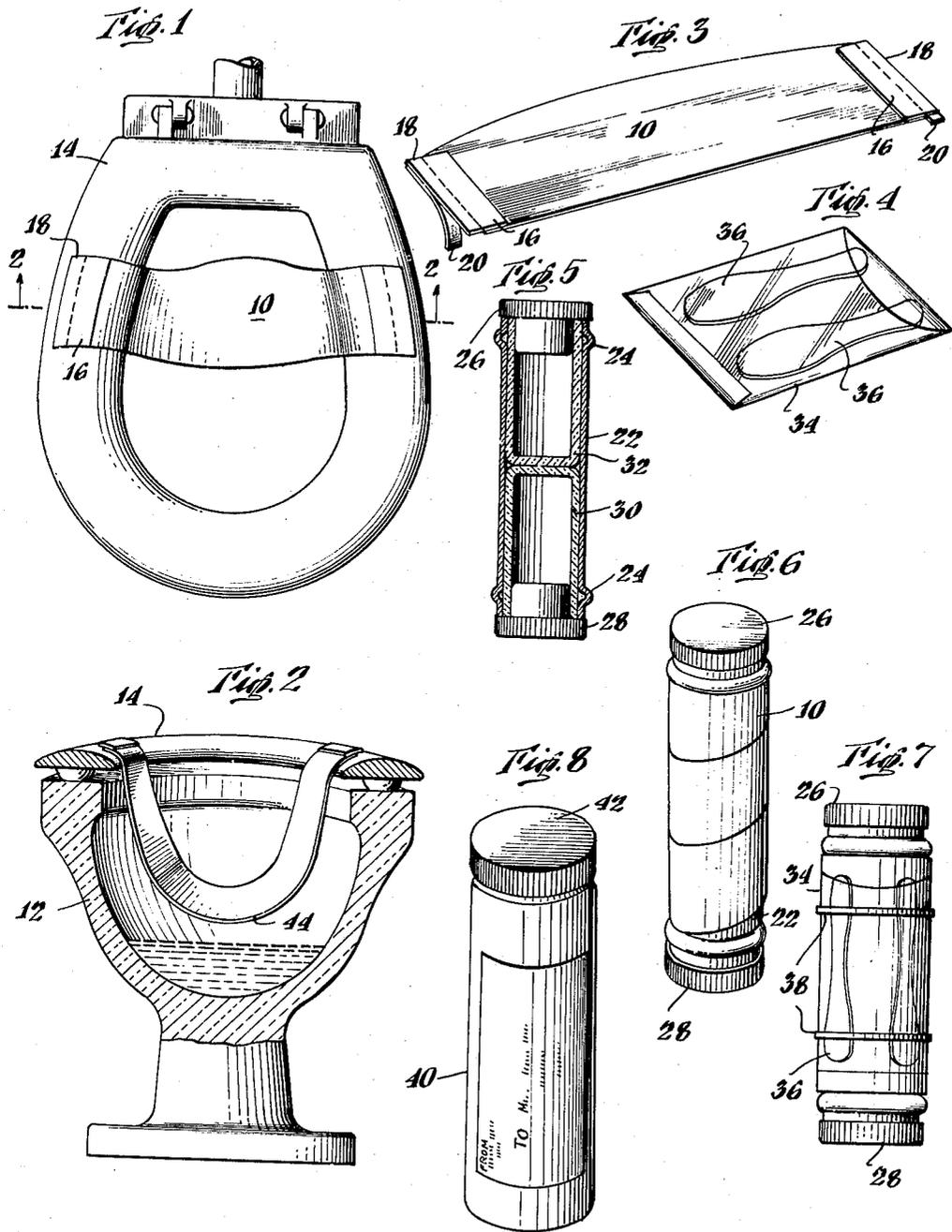


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STOOL SAMPLING APPARATUS

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STOOL SAMPLING APPARATUS

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1 Claim. (Cl. 4—1)

This invention relates to apparatus for taking and retaining a sample of human feces.

The need of stool examinations in medical diagnoses is very common. Yet the collection and transmission of specimens to the physician and by him to the laboratory are so inconvenient and unsatisfactory that such examinations are made less frequently than should be the case.

We have now provided equipment for collection and transmission of samples that eliminates at least most of the objections previously encountered.

Briefly stated, our invention comprises a flexible strip of disposable material to be suspended in cradle like manner, within the toilet bowl, and means for securing the ends of the strip to the toilet seat on opposite sides of the bowl.

The invention will be illustrated by description in connection with the attached drawings to which reference is made.

Fig. 1 shows a plan view of the sample collecting equipment mounted on a toilet seat.

Fig. 2 is a sectional view on line 2—2 of Fig. 1.

Fig. 3 is a perspective view of the sample collecting strip.

Fig. 4 is a perspective view of an envelope for including sampling spoons in the equipment as shipped.

Fig. 5 is a sectional view of a container for receiving cartridges for the sample.

Fig. 6 is a perspective view of the container with the strip of Fig. 3 wrapped therearound.

Fig. 7 is a side view of the structure of Fig. 6, with the envelope of Fig. 5 and spoons therein, applied and held in position.

Fig. 8 is a perspective view of shipping container for receiving the structure of Fig. 7.

There are shown strip 10 for receiving the sample of feces, toilet bowl 12 with seat 14 thereon, and an adhesive band at each end of the said strip, a part 16 of the said band being adhered to the end of the strip 10 and another part 18 of the band extending beyond the end of the strip and adhered to the seat 14. This part 18 of the band is protected during shipment and storage by the sheet material 20 which may be stripped off at the time of use, as illustrated at the beginning of the stripping operation in Fig. 3.

The container or cartridge of generally cylindrical shape 22 is provided with spaced parallel ridges or beads 24 at such a distance apart as to permit winding of the strip 10 over the exterior cylindrical surface of the said container and between the beads 24. The beads constitute annular stop members disposed between the edges of the wrapped strip 10 (Fig. 6) and the ends of the cartridge, so as to limit displacement of the wrapped strip in the direction of the said ends. The container is closed at the ends by conventional means such as the caps 26 and 28 and is of such size as to receive therein the cartridges 30 and 32 fitting by friction within the container 22.

The envelope 34 is of conventional type and of such

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size as to hold the small spoons 36 and then to be wrapped over the strip 10 on the said container and held in position, as by the rubber bands 38. The shipping container 40 is of usual type and of size to receive the structure shown in Fig. 7.

The strip 10 to receive the sample is substantially longer than the distance between the opposite sides of the toilet seat. Because of this extra length and the flexibility of the strip it hangs in substantially the form of a catenary curve, as in cradle like manner as shown in Fig. 2. The width of the strip is not more than about half the width across the toilet bowl at the level of the lowest part 44 of the strip when suspended from the toilet seat.

It will be observed that the strip is of length to extend partway over the sides of the toilet seat. The securing means, such as the adhesive bands with parts 16 and 18, hold the strip at its ends in fully extended condition and conforming relationship against the toilet seat. As a result, the strip is supported at both its side edges and generally flatwise against the toilet seat. This type of support prevents rotation of the strip during use.

As to materials of construction, the strip 10 is not only flexible but also disposable, that is, adapted to be flushed from the bowl to the sewer. Examples of materials that meet these requirements and illustrate the class of materials to be used are thin strips about 0.0003 to 0.002 inch thick of cellophane, methyl cellulose, polyethylene, or polyvinyl chloride plastic.

The cartridge 22 is suitably constructed of cardboard or any suitable plastic such as polystyrene, polyethylene, or cellulose acetate. The ridges thereon may be formed in the molding operation.

The bands with parts 16 and 18, a part of which for each band extends across an end of strip 10, are constructed to advantage of cloth, paper, cellophane or the like, cloth being particularly desirable for this purpose. The exposed face of the bands are non-tacky. The back of the bands is adhesive. Thus the back is coated for best results with pressure sensitive adhesive of conventional kind. A part 16 of this coated back is adhered by the adhesive to the end of one of the said strips. The other part 19 of the coated back is covered for shipment and storage with a usual protective sheet. A woven light fabric such as thin gauze is the preferred material. When this protective sheet 20 is pulled off just before use of the strip, there is exposed pressure sensitive adhesive in fresh condition for adherence to the toilet seat; through this adhesion, the strip is supported during use in collecting the sample of feces.

Other parts of the equipment are constructed of materials that are usual for like parts for other uses.

The sample of feces after collection on the strip may be transferred in amount required, as by spoon, to the small closed cartridges 30 and 32 that slip within the cartridge and hold therein by friction fit. The cartridge so assembled and now having the identifying label occupying a part of the space originally covered by the wound strip 10 is then ready for being inserted into a mailing carton of common kind (Figure 8) and mailed to the physician or to the examining laboratory.

It will be understood that it is intended to cover all changes and modifications of the examples of the invention herein chosen for the purpose of illustration which do not constitute departures from the spirit and scope of the invention.

What we claim is:

Apparatus for collecting a sample of human feces comprising a toilet bowl, a seat thereon, a thin disposable flexible strip of width not more than half the diameter of the said bowl at the level of the lowest part of the strip when the strip depends within the bowl and of length

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substantially greater than the distance between the sides of the said seat, and means for securing the strip at each end and over substantially the full width thereof to the said seat and in conforming relationship thereto, so that the strip will depend in non-rotatable manner with the lowest part between the two sides of the bowl.

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