

[54] ALCOHOL BREATH TESTING SET

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[58] Field of Search..... 23/254 R; 206/216, 223,
 206/229, 232, 305

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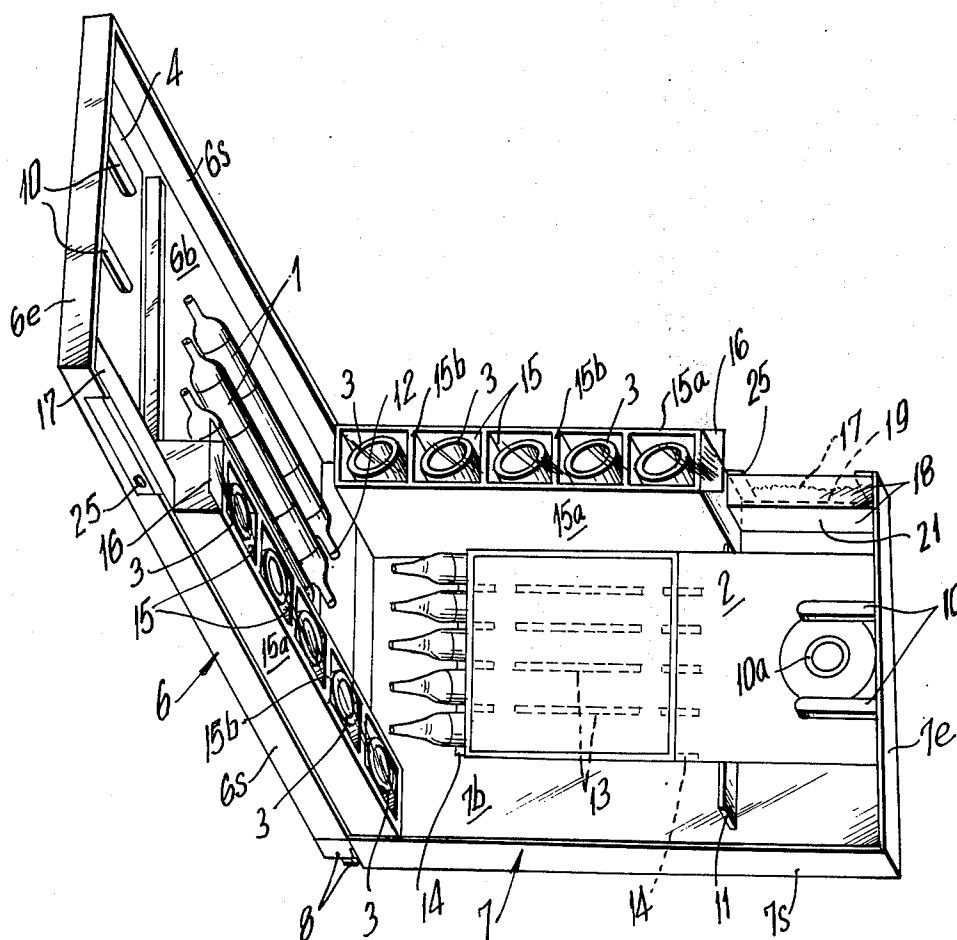
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[57]

ABSTRACT

An alcohol breath testing set comprises a container having first and second half portions of rectangular panshape configuration, each having a bottom wall and outstanding side and end walls. The two half portions are hinged together so that they may be closed with their edges abutting, and each of the half portions contain a plurality of mouthpiece receiving compartments which are defined along respective opposite edges of the half portions, and which project into the opposite half portion when the two are closed. In addition, each half portion advantageously includes pairs of spaced substantially parallel clamping elements for clamping indicator tubes in the respective half portions. One of the half portions includes holding means in the form of projecting ribs adjacent an end of one of the half portions which is spaced upwardly from the bottom wall to retain a measuring bag.

5 Claims, 3 Drawing Figures



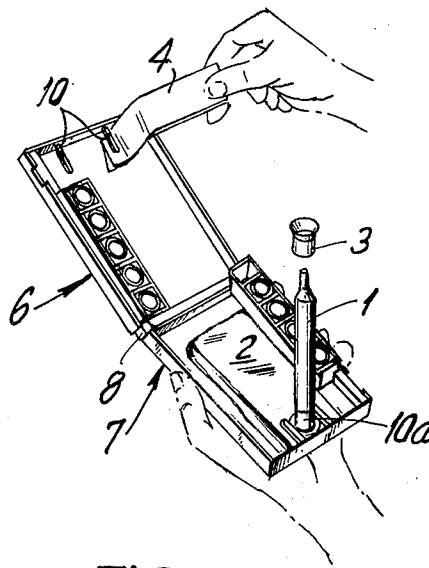


FIG. 2

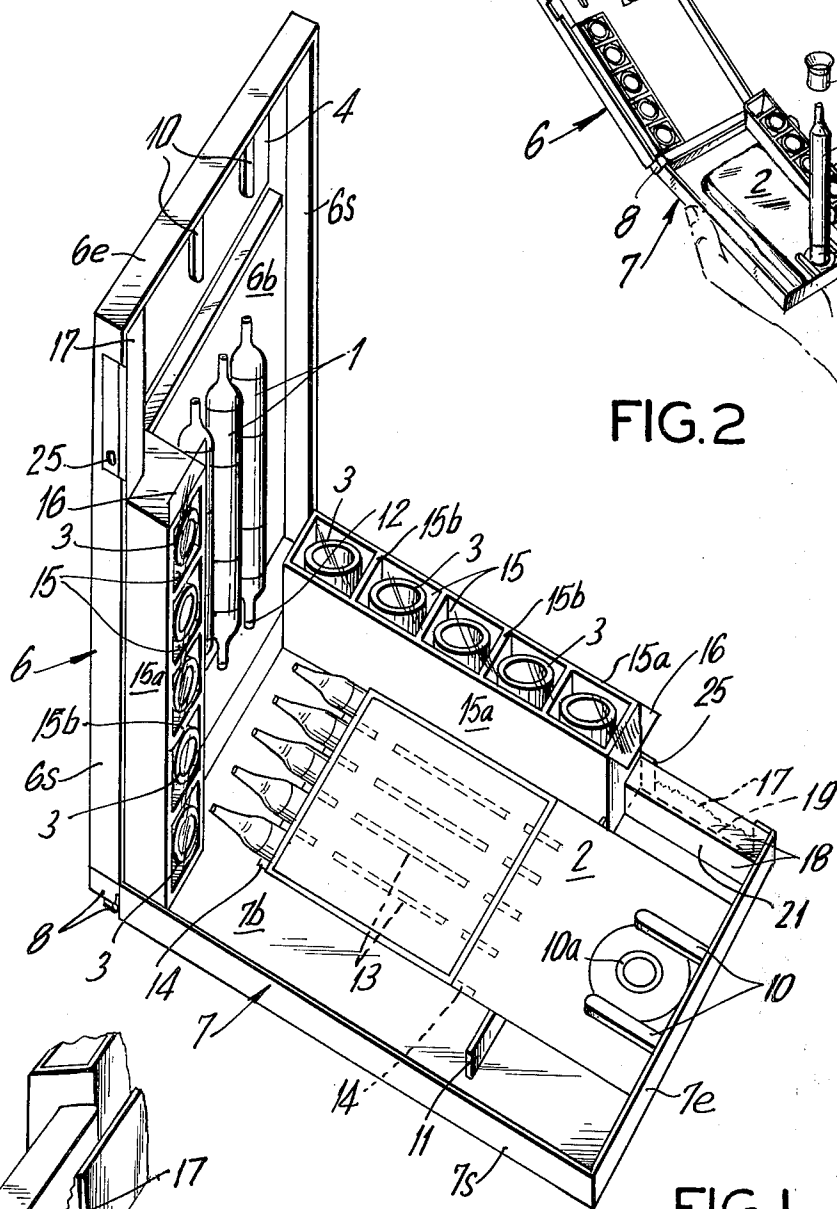


FIG. 1

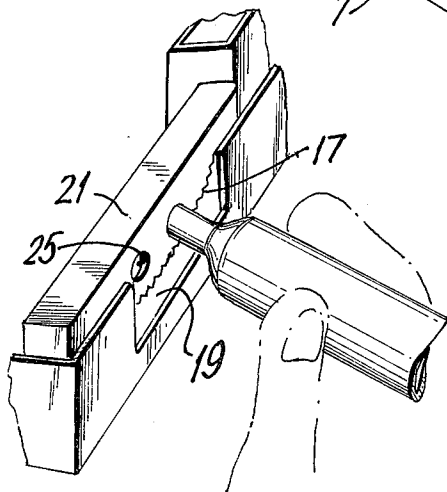


FIG. 3

ALCOHOL BREATH TESTING SET

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates in general to apparatus for testing for the presence of alcohol and, in particular, to a new and useful alcohol breath testing set which comprises a container having an arrangement for containing a plurality of indicator tubes and mouthpieces, which may be selectively connected through a measuring bag device to indicator tubes for testing the breath of a person for the presence of alcohol.

2. Description of the Prior Art

The known alcohol breath testing sets comprise the necessary equipment, such as indicator tubes, mouthpieces, measuring bags and instructions for use, which are arranged in a box without respect to their function. The measuring bag covers the indicator tubes and thereby obstructs their manipulation. In the known construction, before the devices can be removed, the measuring bag must also be removed and laid aside. A disadvantage of this construction is that a two-hand manipulation of the testing set is not possible. In the sets known to date, the splinters of the indicator tube tips, which are broken off to open each end thereof, fall into the box so that there is a danger during a subsequent use of the set that the splinters may cause injury to the user or to the measuring bag and thereby affect the results of the measurement.

SUMMARY OF THE INVENTION

In accordance with the present invention, there is provided an alcohol breath testing set which includes means for holding the various elements of the testing apparatus securely in position, but in a location such that they may be immediately used without difficulty. The container includes an opening in an area adjacent one end which makes it possible to break off the ends of the indicator tubes and to cause the broken off portions to be discarded through the opening.

The set is advantageously contained in a container comprising a plastic box made of two substantially identical box half portions which are interconnected by a hinge such that the two parts may be opened to expose the various elements for instant operation. For this purpose, the container includes means for holding the mouthpieces in a series of compartments along the respective side walls of each container half portion in an arrangement wherein the walls which define the compartments extend into the opposite container half portion when the container is closed. The mouthpieces are arranged on either side of the central portion of the bottom wall of each container half portion which has clamping means for clamping the individual indicator tubes. The measuring bag which is provided with a fitting neck which is engageable with an indicator tube and a selected mouthpiece in turn is arranged so that it may be used immediately by associating an indicator tube and a respective mouthpiece therewith. The parts are thus arranged so that they are accessible in the order of their use.

A further feature of the invention is that the alcohol breathing set container is made up of two identical box half portions so that the cost of manufacture is materially reduced. In addition, each half portion is provided with the necessary elements for receiving and holding mouthpieces, indicator tubes and a measuring bag so

that they may be automatically filled without difficulty. The construction includes substantially parallel sets of clamping elements for holding five indicator tubes in each box half portion on the bottom walls thereof. One end of the indicator tubes also rests against a transversely extending web portion so that the indicator tubes are centered both longitudinally and laterally within each box half portion.

The measuring bag for the apparatus is retained by two spaced parallel retaining ribs which extend outwardly from an end wall of each box half and overlie the mouthpiece neck of the measuring bag. The construction makes it possible to include both the measuring bag and instructions for use of the device directly below the holding ribs. The holding ribs are located so that the measuring bags become located between the indicator tubes of each box half portion and the adjacent end wall. The construction is such that the indicator tubes, whose outer wall is made of glass, are held at a spaced location from the measuring bag so that neither of these elements are liable to become damaged. The entire construction of each box half in the associated compartments and holding elements is such that they may be made from simple and secure injection molds. The individual compartments which are formed for receiving the mouthpieces are advantageously covered by a thin, preferably transparent, foil.

A still further feature of the alcohol breath testing set is that a side wall thereof is provided with a slot opening and the interior is provided with a recess defining portion which receives an indicator tube break off device. The break off device has an opening exposed through the slot of the side wall of the container in a position to have it become engaged by the ends of the indicator tubes to break these ends off from the tubes and to cause them to fall inside the device. Thus, when each indicator tube is to be used, it is a simple matter to insert it into the opening of the device and to break it off so that its tip falls into the device and does not fall into the container where it might possibly cause damage to the other operating parts.

Accordingly, it is an object of the invention to provide an alcohol breath testing set which comprises two container half portions of pan-shape rectangular configuration, each having a bottom wall and outstanding side and end walls arranged so that they are hinged together adjacent one end wall in a manner permitting the entire side edges and end edges to become juxtaposed in a closed position and wherein, each container half portion has a plurality of mouthpiece receiving compartments defined along a respective side edge which projects into the opposite half portion when the parts are closed, and each includes a plurality of pairs of spaced substantially parallel indicator tube clamping elements for receiving the alcohol indicator tubes therebetween which are located on the respective bottom walls on each of the half portions, and which further includes measuring bag holding ribs which project inwardly from at least one end wall of each of said half portions for positioning a measuring bag in the associated half portion adjacent to, but spaced from, the indicator tubes.

A further object of the invention is to provide an alcohol breath testing set which is simple in design, rugged in construction and economical to manufacture.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this disclosure.

For a better understanding of the invention, its operating advantages and specific objects attained by its uses, reference should be had to the accompanying drawing and descriptive matter in which there is illustrated a preferred embodiment of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

In the Drawings:

FIG. 1 is a perspective view of an opened alcohol breath testing set container constructed in accordance with the invention;

FIG. 2 is a front, top perspective view of the set showing the set held in a person's hand and with an indicator tube on the bag fitment; and

FIG. 3 is a partial perspective view of the end of one container half portion.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawing in particular, the invention embodied therein, comprises an alcohol breath testing set which is included in a container comprising two container half portions 6 and 7, which are of substantially identical configuration, and which are substantially rectangular pan-shape elements having a bottom wall 6b and 7b, side walls 6s and 7s, and end walls 6e and 7e, respectively. The half portions 6 and 7 are hinged together by means of a hinge 8 which is connected adjacent their one ends so that the edges of their opposite ends and sides may be juxtaposed in a closed position.

In accordance with the invention, each half portion 6 and 7 is provided with a row of compartments 15 formed by longitudinal partition walls 15a and transverse partition walls 15b which are of a size and length such that they project into the opposite half portion when the two half portions are closed together. Compartments 15 accommodate mouthpieces 3 which are engageable with an indicator tube 1. The indicator tube is engageable into a fitment or a fitting neck 10a of a measuring bag 2. In accordance with a feature of the arrangement, the measuring bag 2 is held in position beneath holding ribs 10 which extend outwardly from an associated end wall 6e and 7e at a spaced location from the bottom walls 6b and 7b, so that the measuring bag 2 is retained in position therein and the upright fitment 10a extends upwardly in a fixed position as shown in FIG. 2.

Each container half portion also includes a plurality of longitudinally extending separating webs which, together with clamping lugs 14, form clamping means for holding a plurality of indicator tubes 1. The indicator tubes 1 are of a type which contain an indicating material and they are used by breaking off tips 12 at each end to open the tube so that the tested person's breath may be circulated therethrough in order to determine the presence of alcohol. In the embodiment shown, five indicator tubes 1 are located in each box half portion 6 and 7, and they are held by the clamping means 13 and 14 in position with their ends prevented from moving out of longitudinal alignment by a transversely extending web 11 which projects upwardly from the bottoms 6b and 7b, respectively.

In addition to the measuring bag 2, instructions for use 4 are inserted behind the retaining means 10 as shown in FIG. 2. Measuring bag 2 is folded and is inserted so that the indicator tubes 1 are covered only partly and are therefore in a position ready for immedi-

ate removal and use. As long as the box is closed, the indicator tubes of each box half portion are protected against each other by the measuring bag 2 and by the instructions for use 4 which, in the embodiment shown, is secured beneath holding means 10 on container half portion 6.

Mouthpieces 3 are protected against outside influences by a covering which is advantageously made of a transparent foil 16.

In accordance with another feature of the device as shown in FIG. 3, there is provided a break off device or file 17, which is mounted between special longitudinal walls 18, 18 of a box part 21 adjacent a slotted portion 19 of an associated half portion 6 or 7. An indicator tube 1 is held in a person's hand and is cut by engagement with the file 17 to permit breaking of the points off so that they fall into slot 19. Another device may be used to break off the end tips of the indicator tubes, for example the exterior wall 18 may be provided with an opening or hole 25 for the reception of tips 12 of indicator tubes 11 so that the tips fall inside the box part 21.

The small, compact and handy testing set permits a two-hand manipulation, wherein the open set can be held in one hand and all of the operations can be effected in a simple and satisfactory manner with the other hand.

The operation of the device is very simple and it may be carried out by holding the device in the hands of the person who is to apply the test. The container is usually closed by a label (not shown) which is provided with legends indicating the storage date, the decay date, etc. After the label is removed and the box opened on its hinges while it is held in one hand for example the left hand of a person as shown in FIG. 2, the instructions 4 may be removed and read by the operator. While still in the position shown in FIG. 2 indicator tube 1 may be removed from its storage and inserted into the fitment 10a which is already connected to a plastic bag or test bag 2. In the position indicated in FIG. 2 a mouthpiece 3 is positioned over the other end of the indicator tube 1. Thereafter the assembly of fitment 10a, indicator tube 1, mouthpiece 3 and bag 2 may be removed and used by directing the person who is to be tested to below through the mouthpiece 3 and the tube 1 into the bag. Before the indicator tube is ready for use its tip 12 must be removed by sawing around the periphery thereof using the sawing tool 17 as shown in FIG. 3 or by inserting the outer end of the tube through an opening 25 of substantially the same diameter as the end of the tube and breaking off the end to cause it to fall into the box like part 21. The chips or parts that are removed from the end during the filing are removed from the bottom of the container through a slot 19. Mouthpieces 3 are removed from the individual compartments only by the lifting up of an adhesive coated plastic strip 16 which may be readily inserted back in place after a single mouthpiece is removed.

After use the bag is folded back into its initial shape and inserted below the retaining clips 10. The used indicator tube is then removed from the bag 2 but the fitment 10a is left in place. The instructions 4 may be easily reinserted at the half part 6 below the holding elements 10 and the container closed. The present invention overcomes some of the drawbacks of the prior art wherein devices of this nature included a container having parts therein arranged randomly so that they were loosely packed and fell out. With the present ar-

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rangement the parts are arranged so that they may be easily manipulated with only a single hand and the package may be made compactly and less bulky than the prior constructions. There is no danger that the splinters of the indicator tube will fall into the box or damage the bag. The box containing the devices for the test are made of identical half portions and they fit together so that they form a good appearance. Because of its size the box may be held in the palm of a person's hand. The parts are always in a position ready for use. The compact construction and the strengthening walls of the box make it a very rigid and strong structure. When the saw tool or file 17 is employed the parts which break off fall through a slot so that they may be easily recovered in a waste receptacle and cannot get into the box and hurt the other parts. Although the mouthpieces are visible in the compartments they are covered by a transparent plastic tape which has adhesive connections to the wall top edges and which may be easily removed. All of the parts may be packed in a completely hygienic manner and they do not have to be touched by a person's hands. When the indicator tube is removed one end may be inserted into the mouthpiece to engage and hold the mouthpiece and the opposite end may be inserted into the fitment 10a of the bag without contacting either end by a person's hands. In this manner the mouthpiece does not even have to be touched by a person's hands. The instructions for use cannot fall out of the container since they are easily retained by the retaining clips or holders 10. They are advantageously made of clear bold type and in several languages. The measuring bag which is employed is retained in position between the holders 10 so that it will not move around and become damaged.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. An alcohol breath testing set comprising a container having first and second half portions of rectangular pan-shape configuration, each having a bottom wall and outstanding side and end walls connected to said

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bottom wall, hinge means hinging said half portions together adjacent their one ends so that the opposite ends and side edges may be closed in juxtaposition, each of said containers having a plurality of mouthpiece receiving compartments defined along respective opposite edges of said half portions which project into the opposite half portion when the half portions are juxtaposed in a closed position, a plurality of pairs of spaced substantially parallel alcohol indicator tube clamping elements for securing alcohol indicator tubes therebetween located on the respective bottom walls of each of said half portions, and measuring bag holding means projecting inwardly from at least one end wall of said half portions for positioning a measuring bag in the associated half portion, and a measuring bag having an indicator tube receiving opening with a fitment neck around the opening, said bag being held by said holding means in said container in an outwardly facing position, and an alcohol indicator tube having one end of a dimension to slidably engage into the fitment neck and into the opening of said measuring bag and adapted to be held by said clamping elements.

2. An alcohol breath testing set, according to claim 1, wherein said clamping elements hold five separate indicator tubes in spaced longitudinally extending parallel relationship, said clamping elements including a plurality of spaced separating webs and a plurality of spaced apart clamping lugs.

3. An alcohol breath testing set, according to claim 1, wherein said measuring bag holding means on one of said container halves provides means for retaining instructions therebeneath.

4. An alcohol breath testing set, according to claim 1, wherein said plurality of mouthpiece receiving compartments comprises at least five mouthpiece compartments which are arranged in a row, and a foil covering each of said compartments.

5. An alcohol breath testing set, according to claim 1, including a break off device in each of set container half portions, said container half portions having an opening adjacent said break off device and said break off device having a hole into which the tip of an indicator device is inserted for breaking off.

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