This invention relates to trays such as used in hospitals which contain drugs and sterilized equipment, such as venous pressure trays, exchange transfusion trays, lumbar puncture trays and surgical preparation trays for example. Heretofore these trays have usually been made of stainless steel and after each use the trays and equipment have been sterilized for reuse. The sterilization and repackaging is not only time consuming and therefore expensive but thorough cleaning is difficult and there is more danger of incomplete sterilization in hospitals than in factories where trays are made and packed in quantity, and may be batch tested for the presence of pyrogens, and for sterility.

Objects of the present invention are to produce trays which are so inexpensive that they may be discarded after one use instead of being sterilized, which may be sealed, sterilized and tested at the factory where the trays and equipment are made, which hold the equipment resiliency to avoid breakage, which can be readily opened for use, and which will hold vials, test tubes and the like in upright position after being opened.

According to the present invention the tray comprises a part having recesses in its face for instruments and supplies, and impervious cover means covering at least certain of said recesses and sealingly enclosing the contents of said recesses to keep them sterile. In a more specific aspect the tray comprises front and back parts, one of the parts having marginal flanges seating on the margin of the other part, the front part having recesses in its face for instruments and supplies, and a transparent impervious sheet covering the front part and sealed around its periphery to keep the contents sterile. In the preferred embodiment the flanges on the rear part overlie the recesses in the front part, the overlapping portions of the flanges being sealed behind the back part, either to each other or to the back. Preferably the aforesaid flanges are on the front part. In the case of trays containing fragile liquid containers the front part of the tray is preferably formed of resilient material, the mouths of the container recesses are narrower than the containers so that the containers snap into the recesses and are then held snugly and resiliently. In the preferred embodiment the front part has wells into which the bottoms of the liquid containers fit to hold them in upright position while in use, the wells preferably being located in the bottoms of the recesses for the containers respectively. When using thin, flexible material for the front part, the bottoms of some of the depressed portions should seat on the back at spaced locations to support the flexible front.

For the purpose of illustration a typical embodiment of the invention is shown in the accompanying drawings in which:

FIG. 1 is a front view of a tray;
FIG. 2 is a bottom view with parts broken away;
FIG. 3 is a section on line 3--3 of FIG. 1;
FIG. 4 is a section on line 4--4 of FIG. 1; and
FIG. 5 is a section on line 5--5 of FIG. 1.

The particular embodiment of the invention chosen for the purpose of illustration comprises a flat cardboard back 1 and a front 2 formed of thin, flexible plastic material such as high impact polystyrene, rigid vinyl or the like. The front 2 has marginal flanges 3 terminating in outturned portions 4 which seal flatwise on the back and which are preferably cemented to the back. Extending over the front is a sheet 5 of thin, transparent, impervious material such as cellulose, polyethylene or oriented polyester, the margins 6 of the sheet overlapping the back and being sealed thereto preferably by heat and pressure. To remove the cover sheet 5 a tear string 7 is placed on the flange 4 along one side of the tray (the lower side of FIGS. 1 and 2) with the ends 8 of the string folded over the edges of the front and back and projecting beyond the sealed margins 6. To remove the cover it is necessarily merely to tear one of the ends 8 through the overlapping margin 6 and thence along the side of the tray to the other end.

The front 2 is provided with recesses to receive the instruments and supplies required for a particular operation. In the illustration the front is provided with recesses 9 to receive the two parts 10 of a manometer such as shown in my pending application Ser. No. 709,958, filed January 20, 1958, a recess 11 to receive a plastic surgical valve 12 such as disclosed in my pending application Ser. No. 678,165, filed August 14, 1957, a recess 13 to receive a hypodermic needle 14, a recess 15 to receive a syringe 16, a recess 17 to receive surgical dressing pads 18, and recesses 19 and 20 to receive vials 21 and 22 of liquids such as alcohol and saline solution. In the case of the recesses for fragile articles, the mouths of the recesses preferably have widths less than the diameter of the articles so that the articles must be snapped into the recesses, the plastic cover material being sufficiently resilient to permit the insertion of the articles and thereafter yieldingly gripping the articles to prevent breakage. Such overlapping portions are shown at 23 for the syringes and at 24 for the vial 21 and at 25 for the vial 22. To facilitate removal of the articles from the recesses, finger recesses may be provided as indicated at 26, 27 and 28.

To prevent the thin flexible front 2 from sagging, the bottoms of some of the depressed portions seat on the back as indicated at 29, 30, 31, 32, 33 and 34. These depressed portions may extend throughout the entire area of the recesses, as in the case of the recess 11 for valve 12, or they may be confined to a small part of the recess as in the case of the portions 29 to 34. To support the liquid containers in upright position while in use, the front is preferably provided with wells into which the bottoms of the containers fit and, as shown in FIG. 5, the depressed portions such as 33 and 34 may serve both as wells and as supports for the thin flexible front 2.

All of the parts of the tray and the contents of the tray may be formed of inexpensive material so that they may be discarded after one use instead of being sterilized, thereby solving the time and expense of washing, sterilizing, breakage, return of equipment to central supply, etc., and also avoiding the danger of incomplete sterilization because the parts are not sealed, sterilized and tested at the time of manufacture.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims. For example, some parts, such as a hemostat, needle holder, spinal needles, sternal needles, etc., may not be disposable, in which case they are preferably placed in recesses in the front part which are not covered by the cover sheet before delivery from the central supply room of the hospital.

I claim:
1. A disposable medical tray comprising a part having recesses in its face for instruments and liquid containers, the liquid containers being received in their recesses in a position of repose and an impervious sheet covering
certain of said recesses and sealingly enclosing the contents of the recesses to keep them sterile, said part also having wells into which the bottoms of said liquid containers fit to hold them in upright position while in use, the wells being located in the bottoms of the recesses for the containers respectively.

2. A disposable medical tray for instruments and supplies used in performing a medical procedure comprising front and back parts, one of the parts having marginal flanges parallel with and seating on the margin of the surface of the other part, said front part having recesses in its face for instruments and supplies, and a transparent impervious sheet covering the front part retaining at least part of the instruments and supplies and overlapping the back part, the overlapping portions of the cover being sealed only behind the back part to keep the contents sterile.

3. A disposable medical tray for instruments and supplies used in performing a medical procedure comprising a flat back, a front having marginal flanges seating on the margin of the back and having recesses in its face for instruments and liquid containers, and a transparent impervious sheet covering the front and overlapping the back, the overlapping portions of the cover being sealed behind the back to keep the contents sterile, said front also having wells into which said liquid containers fit to hold them in upright position while in use, the wells being located in the bottoms of the recesses for the containers respectively.

4. A disposable medical tray for instruments and supplies used in performing a medical procedure comprising a flat back, a front formed of flexible plastic material having marginal flanges seating on the margin of the back and being formed of flexible plastic material and having depressed portions to form recesses for instruments and supplies, and a transparent impervious sheet covering the front and overlapping the back, the overlapping portions of the cover being sealed only behind the back to keep the contents sterile, and the bottoms of some of said portions seating on the back at spaced locations to support the flexible front part.

5. A disposable medical tray comprising a part having portions defining recesses in its face for instruments and liquid containers, said recesses further including portions defining substantially cylindrical wells extending downwardly from the surface thereof into which the bottoms of said liquid containers fit to hold them in upright position while in use and an impervious sheet covering certain of said recesses and sealing the contents of the recesses to keep them sterile.

6. A disposable medical tray for instruments and supplies used in a medical procedure, comprising front and back parts, one of said parts having a marginal flange seating on the margin of the other part, said front part being formed of flexible plastic material and including portions defining recesses adapted to contain instruments and supplies, the bottoms of certain of said recesses having extended portions abutting the back part at spaced points to support said flexible front part, and a transparent impervious sheet covering at least a portion of said recesses and sealed to said tray around its periphery.

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