This invention concerns a device for holding a plastic blood container while filling it and for insuring that a measured amount of blood flows into the container.

According to the invention, there is provided a holder for a blood container. The holder includes two hinged dishes preformed to the shape of a plastic bag filled with the desired amount of whole blood or blood plasma. The plates are formed of transparent, rigid material, such as glass, or a suitable plastic, such as acrylic, Lucite and the like. The plates are provided with rectangular, frame-like margins which abut when the holder is closed. Studs are formed on the margin of one plate which fit into corresponding mating recesses or holes in the other plate. Quick detachable clamping members are provided on the outer edges of the plates to lock the holder in a closed position. On each plate is marked or etched a graduated scale for measuring the quantity of blood in the container. The container is a flexible plastic bag formed of polyethylene or the like. It has tubes connected to one end by which it may be filled or emptied. This container is transparent or substantially so, so that the quantity of blood in the container is visible through the walls of the container and holder. The container has a rectangular margin apertured to engage the studs of the holder.

The container is placed in the holder in an empty flat condition. A quantity of blood then flows into the container through the tube which extends out through the holder. The scales marked on the plates indicate the quantity of blood in the container. The device has particular utility when a donor is contributing blood to a blood bank or the like. The blood flows from the donor under some pressure through the tube to the container. The holder in which the container is supported insures that the flexible container cannot expand more than a predetermined amount and that the quantity of blood in the container is exactly that indicated by the scales marked on the sides of the holder.

It is therefore a principal object to provide a holder for a flexible blood container which limits expansion of the container while being filled to a predetermined volume.

A further object is to provide a holder of the character described including two transparent, rigid hinged plates hinged together at one end, the plates being provided with interfitting portions adapted to engage marginal edges of the container disposed therebetween, and with a quick detachable clamping means for holding the plates in a closed abutted position.

Another object is to provide a flexible plastic container for blood, the container having a connected filler tube and an outwardly extending flat margin with spaced holes for engaging studs of a holder of the character described.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a side elevational view of a holder embodying my invention, in closed position on a blood container.
3 graduated scales on the sides of the holder. The tubes 3, 4 pass through the opening formed by aligned recesses 26, 29. In FIG. 5, the holder is shown open and ready to receive an impervious bag or container of in that condition. When the container is placed in the holder, the holes 19 in the bag are aligned with the holes 21 in the plate 14. The plate 12 is then swung closed and the studs 20 inserted through the holes 19 and the clamping members 22, 23 snapped closed together. As blood flows under pressure into the holder, its side contains the engaged edges of the container prevent the container from collapsing. The container is held securely and expands to fill the cavity defined by the spaced bulging sides 17, 18 of the plates. The holder limits expansion and insures that a desired measured amount of blood flows into the container. When filling is completed, the holder plates are snapped open and the filled container can be removed. A sample vial 59 containing a sample of the type of blood contained in the container 30 is preferably attached to the margin 30 of the container by means of an adhesive strip 60.

The aligned scales 16 and 15 are formed in the margins 16 and 15 of the plates 12 and 14, respectively, and a registering hole 60' in bag 30, whereby the holder 16 with contained blood bag 30 may be hung upside down for transfusion operations. There has thus been provided according to the invention, means for holding a flexible container while it is being filled. The marginal parts of the container cooperate with the marginal portions of the holder. The device is economical to manufacture. Its parts are easily sterilized. It is durable and simple to use.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A device for collecting and transmitting blood, comprising a holder including two generally rectangular plates, each of said plates having a rectangular margin, a plurality of spaced studs extending from one side of the margin of one plate, the margin of the other plate having a plurality of spaced studs, said studs being hinged together at corresponding marginal edges, each of said plates having an outwardly bulging center portion, said center portions defining a cavity when the holder is closed with the margins abutted and the studs of the one plate fitted into the holes of the other plate, disengaging clamping means for interlocking the plates together; and a flexible, expansible, transparent container for blood disposed in said cavity, said center portions of the plates limiting expansion of the container when the container is being filled with blood, said container having a rectangular margin interposed between abutted margins of the plates, said margin of the container having a plurality of spaced holes, said studs passing through the spaced holes in the margin of the container, so that the container is prevented from collapsing while being filled with blood.

2. A device for collecting and transmitting blood, comprising a holder including two generally rectangular plates, each of said plates having a rectangular margin, a plurality of spaced studs extending from one side of the margin of one plate, the margin of the other plate having a plurality of spaced studs, said studs being hinged together at corresponding marginal edges, each of said plates having an outwardly bulging center portion, said center portions defining a cavity when the holder is closed with the margins abutted and the studs of the one plate fitted into the holes of the other plate, disengaging clamping means for interlocking the plates together; and a flexible, expansible, transparent container for blood disposed in said cavity, said center portions of the plates limiting expansion of the container when the container is being filled with blood, said container having a rectangular margin interposed between abutted margins of the plates, said margin of the container having a plurality of spaced holes, said studs passing through the spaced holes in the margin of the container, so that the container is prevented from collapsing while being filled with blood.

3. A device for collecting and transmitting blood, comprising a holder including two generally rectangular plates, each of said plates having a rectangular margin, a plurality of spaced studs extending from one side of the margin of one plate, the margin of the other plate having a plurality of spaced studs, said studs being hinged together at corresponding marginal edges, each of said plates having an outwardly bulging center portion, said center portions defining a cavity when the holder is closed with the margins abutted and the studs of the one plate fitted into the holes of the other plate, disengaging clamping means for locking the plates together; and a flexible, expansible, transparent container for blood disposed in said cavity, said center portions of the plates limiting expansion of the container when the container is being filled with blood, said container having a rectangular margin interposed between abutted margins of the plates, said margin of the container having a plurality of spaced holes, said studs passing through the spaced holes in the margin of the container, so that the container is prevented from collapsing while being filled with blood, the abutted margins of the plates having opposed semicylindrical recesses constituting a passage, said container having a filter tube communicating with the interior thereof and extending through said passage.

4. A device for collecting and transmitting blood, comprising a holder including two generally rectangular plates, each of said plates having a rectangular margin, a plurality of spaced studs extending from one side of the margin of one plate, the margin of the other plate having a plurality of spaced studs, said studs being hinged together at corresponding marginal edges, each of said plates having an outwardly bulging center portion, said center portions defining a cavity when the holder is closed with the margins abutted and the studs of the one plate fitted into the holes of the other plate, disengaging clamping means for locking the plates together; and a flexible, expansible, transparent container for blood disposed in said cavity, said center portions of the plates limiting expansion of the container when the container is being filled with blood, said container having a rectangular margin interposed between abutted margins of the plates, said margin of the container having a plurality of spaced holes, said studs passing through the spaced holes in the margin of the container, so that the container is prevented from collapsing while being filled with blood, the abutted margins of the plates having opposed semicylindrical recesses constituting a passage, said container having a filter tube communicating with the interior thereof and extending through said passage, each of the plates being of rigid transparent material so that the quantity of blood in the container is visible through the plates, and graduated scales inscribed on the sides of the plates for measuring the quantity of blood in the container.

5. A device for collecting and transmitting blood, comprising a holder including two generally rectangular plates, each of said plates having a rectangular margin, a plurality of spaced studs extending from one side of the margin of one plate, the margin of the other plate having a plurality of spaced studs, said studs being hinged together at corresponding marginal edges, each of said plates having an outwardly bulging center portion, said center portions defining a cavity when the holder is closed with the margins abutted and the studs of the one plate fitted into the holes of the other plate, disengaging clamping means for interlocking the plates together; and a flexible, expansible, transparent container for blood disposed in said cavity, said center portions of the plates limiting expansion of the container when the container is being filled with blood, said container having a rectangular margin interposed between abutted margins of the plates, said margin of the container having a plurality of spaced holes, said studs passing through the spaced holes in the margin of the container, so that the container is prevented from collapsing while being filled with blood, the abutted margins of the plates having opposed semicylindrical recesses constituting a passage, said container having a filter tube communicating with the interior thereof and extending through said passage, each of the plates being of rigid transparent material so that the quantity of blood in the container is visible through the plates, and graduated scales inscribed on the sides of the plates for measuring the quantity of blood in the container.
the margin of one plate, the margin of the other plate having a plurality of spaced studs, said plates being hinged together at corresponding marginal edges, each of said plates having an outwardly bulging center portion, said center portions defining a cavity when the holder is closed with the margins abutted and the studs of the one plate fitted into the holes of the other plate, disengageable clamping means for interlocking the plates together; and a flexible, expansible, transparent container for blood disposed in said cavity, said center portions of the plates limiting expansion of the container when the container is being filled with blood, said container having a rectangular margin interposed between abutted margins of the plates, said margin of the container having a plurality of spaced holes, said studs passing through the spaced holes in the margin of the container, so that the container is prevented from collapsing while being filled with blood, there being a passage defined by opposing semicylindrical recesses formed in the abutted margins of the plates having opposed semicylindrical recesses constituting a passage, said container having a filler tube communicating with the interior thereof and extending through said passage, each of the plates being of rigid transparent material so that the quantity of blood in the container is visible through the plates, graduated scales inscribed on the sides of the plates for measuring the quantity of blood in the container, and a hook secured at an upper edge of one of the plates for suspending the holder from a support while the container is being filled with blood.

6. A device for collecting and transmitting blood as defined in claim 5, wherein the plates and container have aligned holes for hanging the holder and container upside down for transfusion operations.

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