Oct. 24, 1961 L. SHERMAN 3,005,375

BLOOD TYPING SLIDES

Filed May 6, 1959

Fig. 1

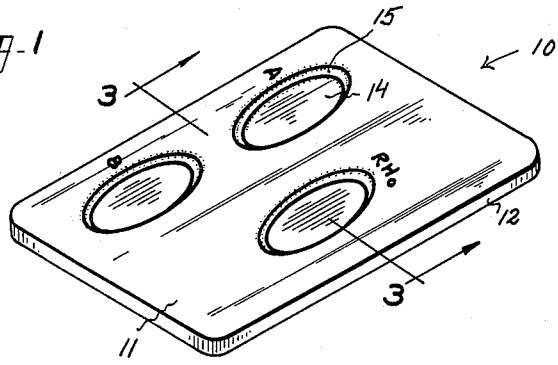
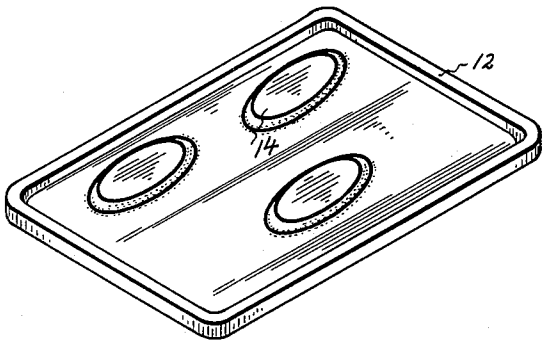


Fig. 2



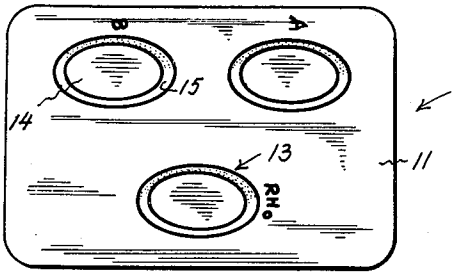


Fig. 4

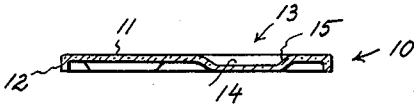


Fig. 3

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BLOOD TYPING SLIDES

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The invention pertains to slides which are used in medical laboratories for the purpose of ascertaining the type of a person's blood. This is important in cases of blood transfusion where care has to be taken that the blood of the donor be of the type compatible with the blood of the patient who is to receive said blood as otherwise the transfusion might result in an unfavorable reaction or even the death of the patient.

The major blood types are known as types A, B, AB and O, and the testing of the respective types of blood is effected by means of said slides in which small quantities of blood each mixed with a suitable serum are placed for examination.

The slides are placed upon a frosted glass of a box-like viewer from which light is directed through the frosted glass against the slides and the contents thereof. While resting on the glass the slides may be rocked back and forth to agitate the contents of the slides in order that each sample of blood placed therein may be mixed with a serum added thereto. While rocking the slides the operator or technologist watches the samples for signs of agglutination and clumping. It is particularly essential in these tests to determine whether agglutination or clumping occurs in what is known as the R*h* factor consisting of Rh_0 and numerous sub types of said R*h* factor.

Used at present by technologists are two types of such slides neither of which is fully satisfactory as each has certain shortcomings as will be presently explained. One type of the slides is a plain microscopic glass slide which is marked with three rings with a wax pencil to denote the blood types A, B, and Rh_0. This method provides a flat surface for the determination of the R*h* factor. However, when the view box is rocked, the slides cannot be tilted more than 10 degrees as otherwise the blood will seep through the wax markings and spill over to the other types on the glass slide and in a great number of cases, it will spill over into the view box making the cleaning of the instrument necessary, and causing the technologist to repeat the typing process.

Another type consists of a flat glass slide with semispherical cavities. This slide is satisfactory for the major blood types. However, only a small portion of the blood on the bottom of the slide is heated by the view box and the density of the blood makes the reading of the R*h* factor difficult due to the finer clumps of the R*h* agglutination.

To overcome said difficulties and drawbacks, I have produced a slide which consists of a flat plate of translucent plastic material and which is formed with three oval depressions each having a flat bottom. The flat bottom insures an even heating of the blood for the R*h* factor and spreads the drop of blood and typing serum over an area which enables the technologist to view the clumping better since the blood is spread out on the slide. The oval-shaped depression also permits the slide to be rocked to a considerable angle without spilling over into other typing wells or into the view box. The increased rocking angle results in a faster agglutination of the R*h* factor. The translucent plastic material used in my invention provides an improved contrast in viewing the clumping as compared to the transparent slides now used in present techniques.

Needless to say, the slide also incorporates markers to deter errors in blood typing and the inexpensive disposable feature of the plastic slide which is produced at a fraction of the cost of the present slides, eliminates the cost and time in the cleaning and preparation of the slides used in the test and prevents possible contamination which may be pathological in nature if the blood contains hepatitis or other organisms.

I shall now describe my slide with reference to the accompanying drawings in which:

FIG. 1 is a perspective view of my slide;

FIG. 2 is a perspective view of the slide shown with its bottom up;

FIG. 3 is a top plan elevational view of the slide; and

FIG. 4 is a sectional view of the slide on line 3—3 of FIG. 1.

Similar numerals refer to similar parts throughout the several views.

The slide generally identified by numeral **10** is preferably rectangular in shape and includes a flat top **11** and a marginal flange **12** which is turned downwardly from said top so that as a whole the slide has the form of an inverted tray. Portions of the top are depressed to form a plurality of recesses **13**, each of which has the form of an ellipse, and each of which is defined by a flat bottom **14** and by an upwardly and outwardly slanting wall **15**. The slide shown in the drawings has three such recesses which are spaced from each other and which are marked by letters A, B and Rh_0, these markings having a specific significance with reference to the type of blood tested in the slide.

It will be understood that the outline of the respective recesses may be varied provided that each bottom area has a longer dimension in the direction transversely to the axis upon which the slides are rocked.

The manner in which the slides are to be used has already been described herein. The novel aspects of my slide, each of which I consider critical are as follows:

The slide is to be of translucent material, the recesses are to be elongated in the direction cross wise to the direction of the rocking of the slide, and the bottom of each recess is to be flat.

After having described my slide, what I wish to claim is as follows:

A blood typing slide consisting of a flat plate of plastic material, the plate having a plurality of recesses spaced from each other and depressed below its top surface, each recess having a flat bottom lying in a plane spaced below said plate, and a continuous marginal flange on said plate with its bottom edge substantially coplanar with the bottom surfaces of the flat bottoms of said recesses.

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