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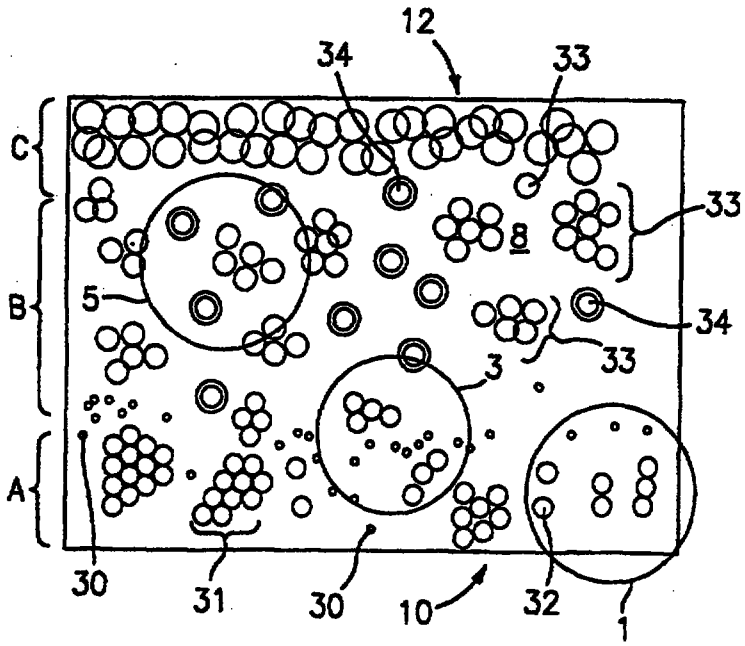
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(54) Title: DETERMINATION OF WHITE BLOOD CELL DIFFERENTIAL AND RETICULOCYTE COUNTS

(57) Abstract

Target nucleated cells, and target cells containing remanant ribosomal material, which are present in a quiescent anticoagulated whole blood sample are optically detected, enumerated, and analyzed in a sample chamber (14) that has a varying through plane thickness due to convergent opposing sample chamber walls. At least one of the convergent walls (8) of the chamber is transparent so that the blood sample can be observed. The chamber's varying thickness produces a first lesser thickness region (A) in the chamber wherein individual red cells (32) and quiescent monolayers (31) of red cells in the sample will reside after the sample is introduced into and fills the chamber. Larger formed constituents such as white blood cells (34) and nucleated red blood cells present in the sample will reside in greater thickness regions (B) of the chamber, and non-nucleated red cells which reside in such greater thickness regions will agglomerate to form rouleaux (33). By admixing fluorescent dyes with the blood sample, target cells in the sample can be enumerated and differentiated by means of a scanning instrument (54) which is able to measure different wave length color signals emitted from the target cells in the sample, and differentiate the target cells one from another by reason of the nature of the emitted color signals.



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