US005928214A

United States Patent [19]

Rubinstein et al.

[11] **Patent Number: 5,928,214**

[45] **Date of Patent: Jul. 27, 1999**

[54] **HIGH CONCENTRATION WHITE CELLS, A METHOD FOR AGGLOMERATION OF THE HIGH CONCENTRATION AND A BAG SET FOR USE IN CONJUNCTION THEREWITH**

[75] Inventors: **Pablo Rubinstein**, New Rochelle, N.Y.; **Philip Henry Coelho**, El Dorado Hills, Calif.; **Cladd E. Stevens**, New York, N.Y.

[73] Assignee: **New York Blood Center, Inc.**, New York, N.Y.

[21] Appl. No.: **09/128,208**

[22] Filed: **Aug. 3, 1998**

Related U.S. Application Data

[63] Continuation of application No. 08/349,747, Dec. 5, 1994, Pat. No. 5,789,147.

[51] **Int. Cl.**[6] **A61B 19/00**; B01D 33/15

[52] **U.S. Cl.** **604/410**; 604/406; 210/206; 210/782; 210/787; 210/806

[58] **Field of Search** 604/406, 403, 604/408, 409, 410, 4, 5; 210/206, 767, 257.1, 782, 787, 806; 422/41, 44; 435/2

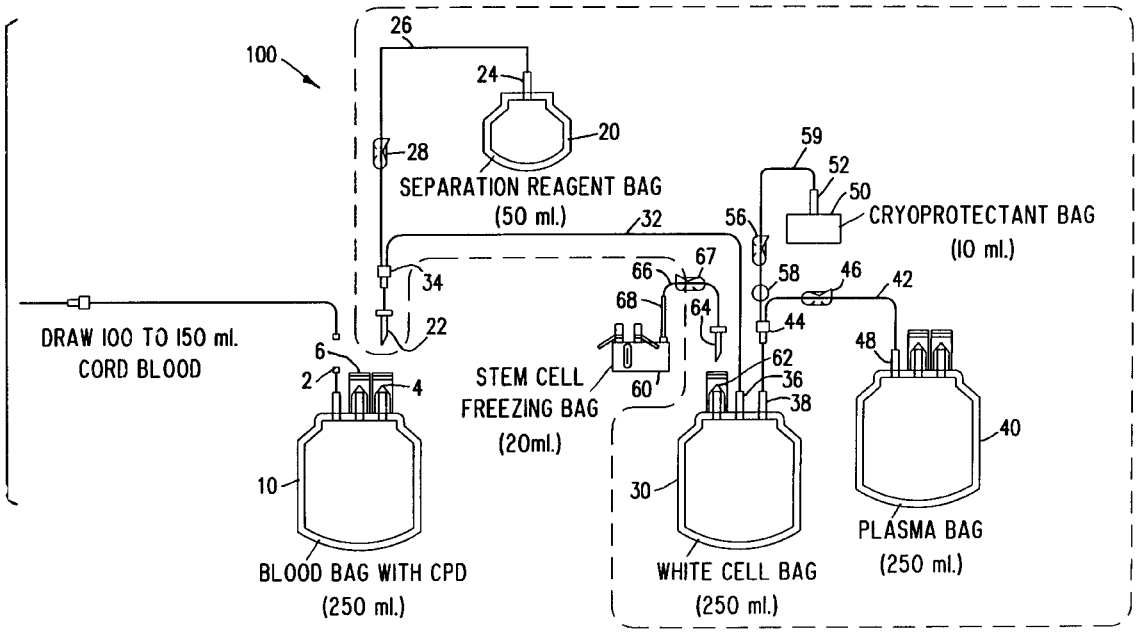
[56] **References Cited**

U.S. PATENT DOCUMENTS

5,089,146	2/1992	Carmen et al.	210/782
5,141,645	8/1992	Shiraki et al.	210/513
5,269,946	12/1993	Goldhaber et al.	210/767
5,523,004	6/1996	Tanokura et al.	210/782
5,562,836	10/1996	Joie et al.	210/782
5,769,839	6/1998	Carmen et al.	604/408
5,789,147	8/1998	Rubinstein et al.	435/2
5,824,216	10/1998	Joie et al.	210/257.1
5,836,934	11/1998	Beshel	604/410

Primary Examiner—John G. Weiss
Assistant Examiner—David J. Cho
Attorney, Agent, or Firm—Amster, Rothstein & Ebenstein

[57] **ABSTRACT**

A therapeutic product formed from a high concentration of white blood cells having a high degree of cell viability. The white blood cells are sequestered from their normal population presence in whole blood by placing the blood into a container and preventing coagulation of the blood, separating the blood into two components, one of which is extremely rich in white blood cells through the use of a reagent and centrifugation, sequestering the white cell concentration, and freezing the white cells.

15 Claims, 3 Drawing Sheets