20000 1349-0
IPOS reference

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A61M 39/00 — A2

(11) International Publication Number: **WO 99/13937**

(43) International Publication Date: 25 March 1999 (25.03.99)

(21) International Application Number: PCT/US98/18068

(22) International Filing Date: 31 August 1998 (31.08.98)

(30) Priority Data:
08/929,919 15 September 1997 (15.09.97) US

(71) Applicant: WINFIELD MEDICAL, INC. [US/US]; 7737 Kenamar Court, San Diego, CA 92121 (US).

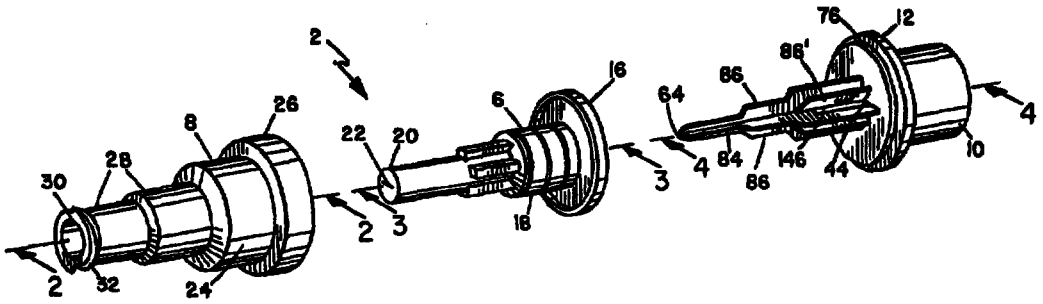
(72) Inventor: DOYLE, Mark, Christopher; Apartment 206, 505 West Broadway, San Diego, CA 92101 (US).

(74) Agents: McCLAIN, James, W. et al.; Brown, Martin, Haller & McClain, 1660 Union Street, San Diego, CA 92101-2926 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: NEEDLELESS VALVE



(57) Abstract

A needleless valve is described which avoids the suctioning problems of the prior needleless devices upon deactivation and which preferably provides a positive self-purging effect. The valve is self-purging at the end of an administration cycle, avoiding clogging of attached catheters or other devices, and ensures that substantially all of liquid received into the valve is delivered to the receiver. The valve is also extremely simple in design and easy to construct and assemble, since it consists of only three pieces. The valve has a base with a connector for fluid communication attachment to tubing or other device, a solid elongated fluid channeling rod, and an internal fluid flow conduit; a flexible hollow expandable and contractible plug fitting over and moveable along the rod; and a tubular housing fitting over the plug and attached to the base. When the valve is activated by insertion of a nozzle of a fluid source, the rod and plug wall cooperate so that as the plug retracts along the rod, it is stretched and its interior expanded. Upon deactivation, the plug contracts, the interior volume decreases, and the resiling plug wall forces residual fluid within the valve to be expelled through the outlet, purging the residual fluid from the valve. No negative pressure is formed, so no suctioning of blood or other fluid from a patient or receiver occurs.