



(86) Date de dépôt PCT/PCT Filing Date: 1999/11/04
(87) Date publication PCT/PCT Publication Date: 2000/05/11
(45) Date de délivrance/Issue Date: 2010/01/05
(85) Entrée phase nationale/National Entry: 2001/04/18
(86) N° demande PCT/PCT Application No.: US 1999/026149
(87) N° publication PCT/PCT Publication No.: 2000/026537
(30) Priorité/Priority: 1998/11/05 (US09/186,794)

(51) Cl.Int./Int.Cl. *F04B 19/22* (2006.01),
F04B 43/00 (2006.01), *F04B 49/00* (2006.01),
F04B 51/00 (2006.01)

(72) Inventeurs/Inventors:
FRANTZ, MARK G., US;
HONARD, MARK R., US;
MANZIE, PATRICK, US;
PAVSEK, THOMAS J., US;
NEMER, RICHARD E., US;
CHESNES, CHARLIE P., US

(73) Propriétaire/Owner:
FRANTZ MEDICAL DEVELOPMENT LTD., US

(74) Agent: PERLEY-ROBERTSON, HILL & MCDOUGALL
LLP

(54) Titre : DETECTION D'OBSTRUCTIONS DANS DES TUBES D'ALIMENTATION ENTERALE/PARENTERALE ET
ENLEVEMENT AUTOMATIQUE DES CAILLOTS OBSTRUANT CES TUBES
(54) Title: DETECTING OBSTRUCTIONS IN ENTERAL/PARENTERAL FEEDING TUBES AND AUTOMATIC REMOVAL
OF CLOGS THEREFROM

(57) **Abrégé(suite)/Abstract(continued):**

a compression stroke (BDC'-TDC) to apply sustained high pressure in the clogged tube, using the same fluid and the same pump, to expel the clog from the tube. The obstruction signal (B) is derived by measuring the pressure due to viscosity (C) effects have subsided. Therefore, if the pressure remains elevated, a determination of an obstructed state can reliably be made which may be caused by a clog.

DETECTING OBSTRUCTIONS IN ENTERAL/PARENTERAL FEEDING TUBES AND AUTOMATIC REMOVAL OF CLOGS THEREFROM

BACKGROUND OF THE INVENTION

The present invention relates to detecting an obstruction in a feeding tube of a pumped fluid system which provides fluid to a patient during a pumping cycle, and automatically removing a detected clog in the feeding tube by modifying the pumping cycle for controlling the pumping of the fluid.

USP 4,845,487 and USP 4,850,807 disclose features of a feeding system to provide nutritional fluid and medication to a patient either enterally through the alimentary canal or parenterally via an intravenous catheter. Such systems are referred to herein as pumped fluid systems.

As shown in Fig. 1, a pumped fluid system for fluid control and delivery includes a reservoir 1 for storing a fluid, and a pump supply tube 2 interconnecting the reservoir 1 and a cassette 3 (described below) which is adapted to be inserted into a receiving chamber 4 within a pump-and-control housing 5. The fluid flows down the pump supply tube 2 and into the cassette 3, and is then pumped through a feeding tube 6 into the patient.

As shown in Fig. 2, the cassette 3 is preferably provided with a compressible member such as bellows 7 for drawing fluid thereinto from tube 2 as the bellows expands and for forcing a repeatable, metered volume of the fluid into the feeding tube 6 and on into the patient as the bellows contracts. The cassette 3 includes valve 8 which allows fluid to flow from tube 2 into bellows 7 and valve 9 which enables flow of fluid from bellows 7 into the feeding tube 6. Both of these valves block backflow. Valve 8 blocks backflow through tube 2 into reservoir 1, whereas valve 9 blocks backflow into bellows 7 from feeding tube 6.

