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(71)**Name of Applicant :**
1)Dr. Praveen Pachauri
Address of Applicant :Noida Institute of Engineering & Technology, 19, Knowledge Park-II Greater Noida Uttar Pradesh India Uttar Pradesh India
(72)**Name of Inventor :**
1)Dr. Praveen Pachauri
2)Dr. Chandan Kumar
3)Anurag Pal
4)Pankaj Kumar

(57) Abstract :
The present subject matter relates to a cartridge for providing feedstock material for the development of concentric / multilayered personalized oral polypills using cold extrusion based on a 3D medicine printer. The cartridge comprises a body (100) including a ratchet wheel (105) placed at a proximal end (102) of the body (100); a pinion (103) placed centrally at a plunger (104) and fixed to the ratchet wheel (105) through a square groove (106) and a lock nut (109) to enable the motion of plunger (104) from proximal direction to distal direction; and a screw element (114) attached to the ratchet wheel (105) with the help of lock nut (109). The movement of plunger happens when the electric current is supplied to a stepper motor (115) through a CPU. Further, the motor (115) controls the ratchet wheel (105) with the screw element arrangement of the body (100). The feedstock is cold extruded through nozzle (107). To create uniform flow of feedstock a perforated plate (108) is fitted at the distal end. The stepper motor (115) is supported by a gripper (111) attached to a robotic arm (110). Two cartridge holders (112 and 113) are provided to hold the cartridge in proper position with reference to the robotic arm (110)

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