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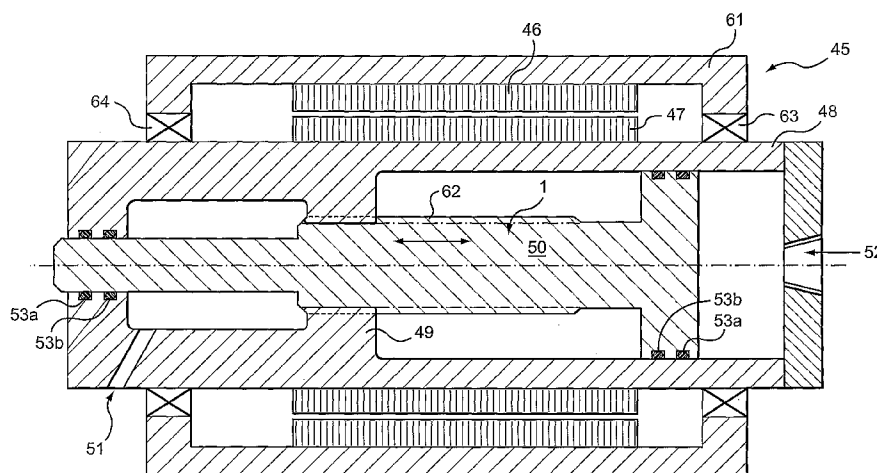
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(54) Title: DRIVE ASSEMBLY FOR ROTATING AND TRANSLATING A SHAFT



(57) Abstract: A drive assembly for rotating and translating a shaft comprising a hollow shaft motor (45) and a fluid cylinder (48). The hollow shaft motor (49) rotates the shaft and the fluid cylinder (48) moves the shaft lengthwise. The drive is particularly useful in the injection unit of an injection-molding machine. In one preferred embodiment the injection unit includes a hollow electric motor (45) and a hydraulic cylinder. A first cylinder wall of the hydraulic cylinder is joined to a rotor (47) of the hollow motor (45). A second cylinder wall of the cylinder is connected to a stationary portion of the hollow motor. A piston (50) has two end portions. One end portion of the piston (50) engages the first cylinder wall and the other end portion of the piston (50) engages the second cylinder wall. Means for rotating the piston are attached to the rotor (47). The means for rotating also permits the piston (50) end portions to slide along the cylinder walls. One channel means provides hydraulic fluid to drive the piston (50) in a forward direction and another channel means provides hydraulic fluid to drive the piston (50) in a reverse direction. Means are provided for attaching an injection screw to the piston (50). In the preferred arrangement, the cylinder (48) is at least partially situated within the hollow motor.

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