



ABSTRACT

LOCKING APPARATUS FOR UPPER AND LOWER MOLDS OF A PRESS

A locking apparatus for an upper mold and a lower mold of a press is provided. The locking apparatus includes a ball
5 screw, a screw nut, a force producing means and at least an engagement means. The screw nut is responsive to a first power source for driving the ball screw in an axial direction to perform a lower-pressure higher-speed stroke. The force producing means is responsive to a second power source for
10 producing a force in circumferential direction. The engagement means is arranged around an external rim of the screw nut. Responsive to the force in circumferential direction, the engagement means closely engages with the external rim of the screw nut such that a corresponding
15 friction force is applied to the screw nut. The screw nut, responsive to the friction force, drives the ball screw in the axial direction to perform a higher-pressure stroke to lock the upper mold and lower mold.