Working cell of the pilgrim tube rolling mill comprises a fixed frame (1) with vertical guide bushings (2) and (3), in which the bearing housings (4) and (5) of the upper and lower work rolls are mounted, and a mechanism for securing each bearing housing in the direction of the rolling axis. The locking mechanism is designed as a pneumatic cylinder, the body (6) of which is housed in a guide sleeve (7) with the ability to move and is equipped with a block of thrust rollers (8) for the upper bearing (4) or a stop (9) for the lower bearing (5), and the piston (10) with the rod is fixed to the frame; the movement of the pneumatic cylinder body (6) is driven by a high-pressure cylinder (11) via a manually operated three-position valve (12), and the return of the body is effected by a spring (14) located in the piston rod cavity of the pneumatic cylinder by venting air through the same valve into the low-pressure cylinder (13).