

A B S T R A C TCONSTANT TORQUE RANGE-OF-MOTION SPLINT

This is a range of motion splint (10) for applying constant torque across a joint undergoing rehabilitative therapy. The splint (10) includes a first brace section (12) and a second brace section (14). A first arm (18) extends from the first brace section (12) and a second arm (20) extends for the second brace section (14). The first and second brace sections arm (18 and 20) are pivotally connected about a splint pivot axis by a pivot mechanism (24). A driven pulley (42) is mounted to the second arm (20) about the splint pivot axis. A drive pulley (56) is rotatably mounted to the first arm (18) about a drive axis which is spaced from the splint pivot axis. Torque is applied to the drive pulley (56) with respect to the first arm (18) by a spiral spring (50) positioned about the drive axis. A belt (30) couples the drive pulley (56) and the driven pulley (42). The amount of torque applied between the brace sections can be adjusted by a torque adjusting mechanism (52 and 54) which winds and unwinds the spring (50). An adjustable stop mechanism (80) can be used to limit the range of rotational motion between the brace sections. The brace section can be locked with respect to one another by a locking mechanism (66) which engages and prevent movements (52 and 54) of the drive pulley (56).

Fig . 1