



rod head, and is compelled by a pin at its upper end always to follow the movements of the piston rod, which moves up and down in the guide shown in plan in Fig. 5. The steam cylinder itself (the part of the rod in which 3 inches diameter) is 6 in. diameter, and has a maximum stroke of 5 inches, corresponding to a movement of the hammer head five times as

great. A lug at the top of the piston-rod head carries a spindle (seen in Figs. 1 and 4), and compels it always to follow the motions of the piston. Lower down this spindle becomes a frame, in which is a curved slot, and this slotted frame works up and down as the piston rod moves across the spindle of the little double-piston steam distribution valve seen in