structure to be raised essentially free from bearing up some 3 inches in thickness above, to be occupied by the nuts of a number of set screws s, intended to force down said internal cylinder upon the bed plate i, and thus relieve the truck wheels from nearly all the weight of superstructure.

The bed plate i, has a socket or step ⅛ of an inch deep, or thereabouts, with a hardened steel plate in the bottom, to receive the lower part of the cylinder bearing upon the plate i, where the diameter of cylinder and socket should be graduated to the proportion most favorable for reducing the amount of friction. A diameter of 6 to 8 inches is thought to be suitable for draws of 60 to 100 feet opening, while the part of the pivot block within the block c should have a diameter of 10 or 12 inches, in order to afford sufficient surface for the set screws s to act upon.

The bed plate i, should have a rim about the step to retain oil, and the surfaces above and below the steel plate should have radial grooves to allow the penetration of oil; and these (grooves) should be so situated as to admit of their being probed, to prevent their getting clogged.

The pivot block should have guides to prevent its turning in the cavity of the block c; otherwise it might stick in the step, and the set screws slide upon its upper surface; which has been the case in some instances.

A groove should be formed in the under side of the block c, near the edge, to keep the water from the pivot; and the screws s, should be kept secluded from water by a tin, or galvanized iron cap shutting over a rim or ring cast upon the block c, outside of the screw holes. Sufficient vertical movement (1½ or 2 inches), should be allowed to the pivot cylinder, to enable the elasticity of the braces and ties, b and d, to be taken up, and the