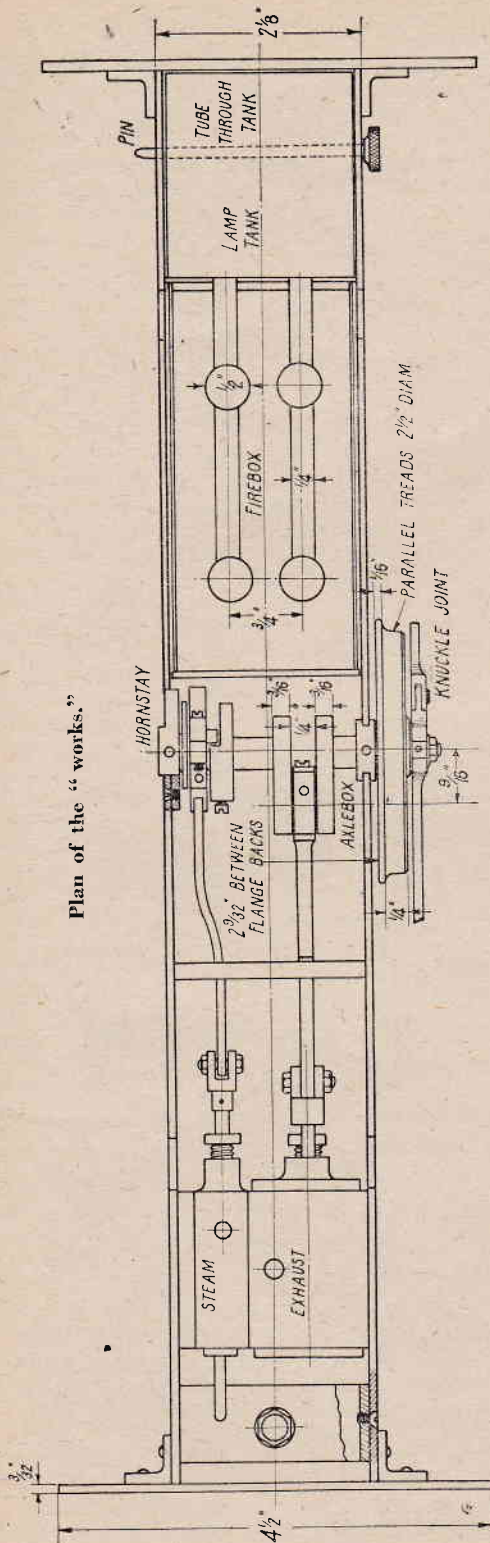




the axleboxes, press on the wheels ("quartering" the crank pins before pressing right home) and drop the axleboxes into the slots in the frame, securing the hornstays with 3/32-in. countersunk screws running through clearing holes in frame, into tapped holes in the lugs at each end of the hornstay. The eccentric and stop collar are then adjusted so that they just clear the axlebox, as shown.

The cylinder can then be erected in the frames in the position shown in the drawings, and secured by four 3/32-in. screws each side. These go into the cylinder block on one side, and the steam-chest cover on the other side. The connecting-rod can then be coupled up, and the eccentric-rod connected to the valve spindle by a little fork, as shown. The valve setting is my usual; the port should just crack as the main crank comes on to the dead centre, and close at approximately 70 per cent. of the stroke. Incidentally, I never bother about looking at the valve when setting the timing on engines like this. All I do, is to disconnect the little-end of the connecting-rod; turn the wheels by hand, with air pressure (from a pump) in the steam-chest, and adjust eccentric-rod fork and stop collar until the piston-rod shoots in and out on the dead centres, when the wheels are turned in either direction.

If any reader has an old stationary-engine cylinder, say about 1/2 in. by 1 in. which he would like to use up, or an ordinary outside cylinder with valve on top, either can easily be utilised. All that is needed is a bracket or sheet-metal stay fixed horizontally across the frames, just ahead of the leading axle. The stationary-engine cylinder could be screwed down to it, and an overhead-valve cylinder simply laid on its side and attached to the stay.

Boiler

This is a plain water-tuber, with no more complication than an ordinary toy "pot" boiler. The casing is 9 1/4 in. long and 2 3/4 in. diameter, and can be rolled up from a bit of 1/32-in. sheet iron or steel; even a good stout cocoa or coffee tin could be used for the casing, if one of the right size, or near it, is available. The back part is opened out to form the firebox, and a piece of similar metal riveted in to form the throat-plate. At the smokebox end, a piece of the same metal, 2 in. wide, is wrapped around the outside of the barrel, and taken down straight at the bottom, to fit between the frames; back and bottom are closed-in. The front is made from 16-gauge steel, and has an opening in it 2 in. diameter, into which is pushed a turned door, as shown in the sectional drawing. There is no need to