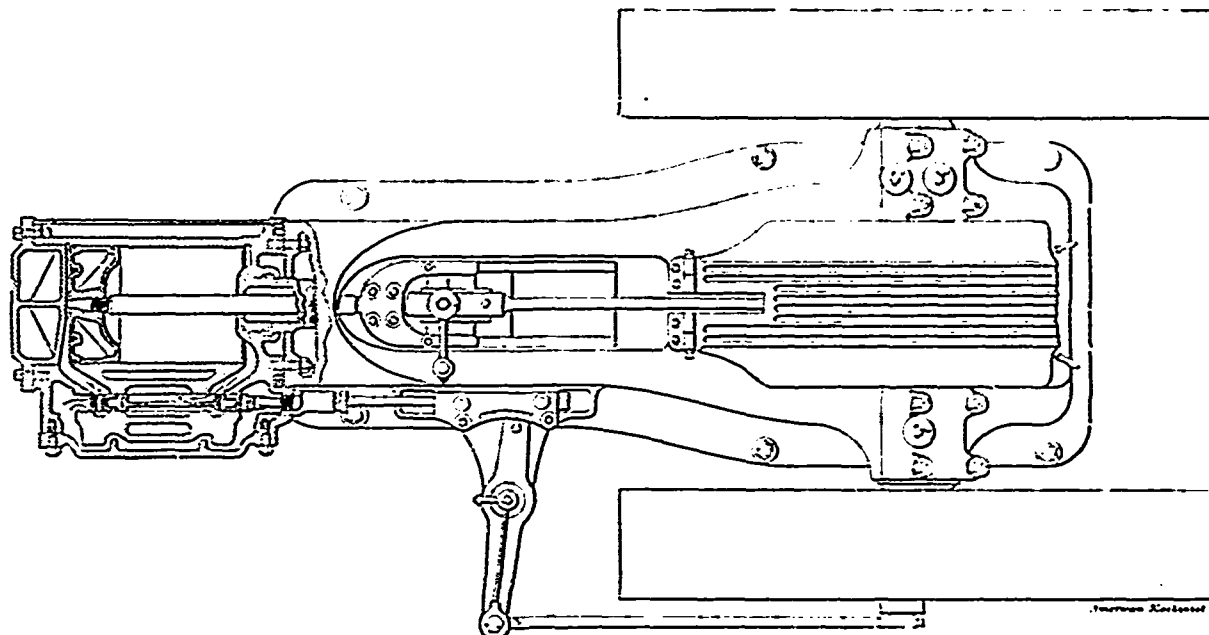


The fly-wheel governor is a modification of the "Straight Line," and, together with the valve, is used by arrangement with the Straight Line Engine Co.; the oiling devices mentioned will also be recognized as essentially "Straight Line."

The eccentric rod, so called, although there is no eccentric, has ball and socket bearings at each end, the balls being case-hardened and ground, and the sockets or boxes of phosphor bronze. The rocker arm, by which the eccentric rod drives the valve, is horizontal,

The crosshead is a single steel casting, of the "Slipper" type, the bottom of the slipper being babbitted. The piston rod is secured by being gripped in two places, about two inches apart, one place being threaded and the other a parallel fit. The crosshead is split and is gripped on to the rod by bolts; this proves very good, in that it can be taken apart and put together again without getting out of line more than permissible in the highest grades of engine work—a point in which the usual methods of securing piston

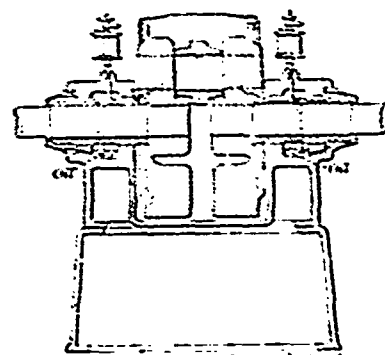
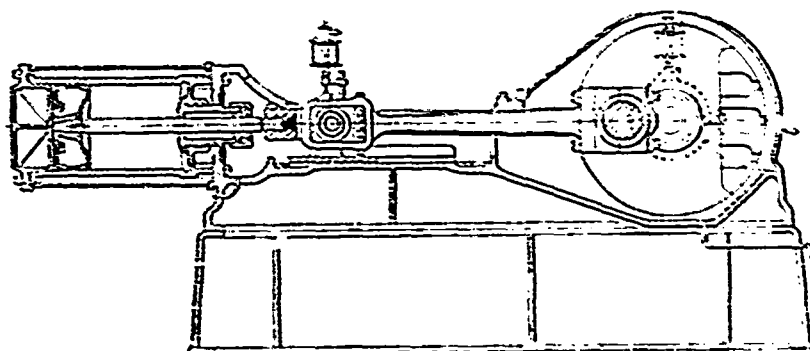


with a vertical axis; there is no twisting strain on either of its bearings, a straight line passing through all three of them. An index finger attached to this arm, as shown in plan view, Fig. 3, shows by the graduations over which it passes, the movement of the valve, and thus is of assistance in valve setting.

A small sight-feed oil cup, directly over the centre of the rocker arm, supplies oil through a tube to the outer end of the arm. The eccentric rod is hollow, being, in fact, a piece of hydraulic pipe, and through it

rods to crossheads (with the exception of the taper fit and key) are often faulty. The crosshead pin is of cast iron, as it is believed that, in connection with the large and long bearing, it is the best material for the place. The connecting rod is a steel forging, the crank end being of the "Marine" type, while the crosshead end is mortised for boxes, which are cast iron, lined with babbit. The adjustment is by a wedge and adjusting screws.

The babbit used in the engine is made from eight



the oil passes to the eccentric pin, any oil finally escaping being caught and held in the flanged fly-wheel.

The centre bearing of the rocker arm works in a bath of oil so arranged that it is constantly flooded, and so that no oil can escape to the floor, any overflow draining to the crosshead guide, and finally to the crank pit.

parts Banca tin and one part each of antimony and copper. The piston is a single casting with sprung rings; it is made extremely light, both to save the cylinder from wear and to make it the "breaking-down" piece; though amply strong for all legitimate loads, it is expected to be weaker than other parts, the idea being that it is the best thing to break, when experi-