

steam-passages are shown at *G*, and the exhaust-passages at *H*. The reversing-valve acts inside the main valve, the reversal of the engine being effected by giving the inner valve a half-revolution in

These engines are made by special tools in such a way as to insure that all like parts are interchangeable, thus facilitating repairs. The plain non-reversible engine made by the same manufacturers is the same as the engine shown, except that it has no reversing-

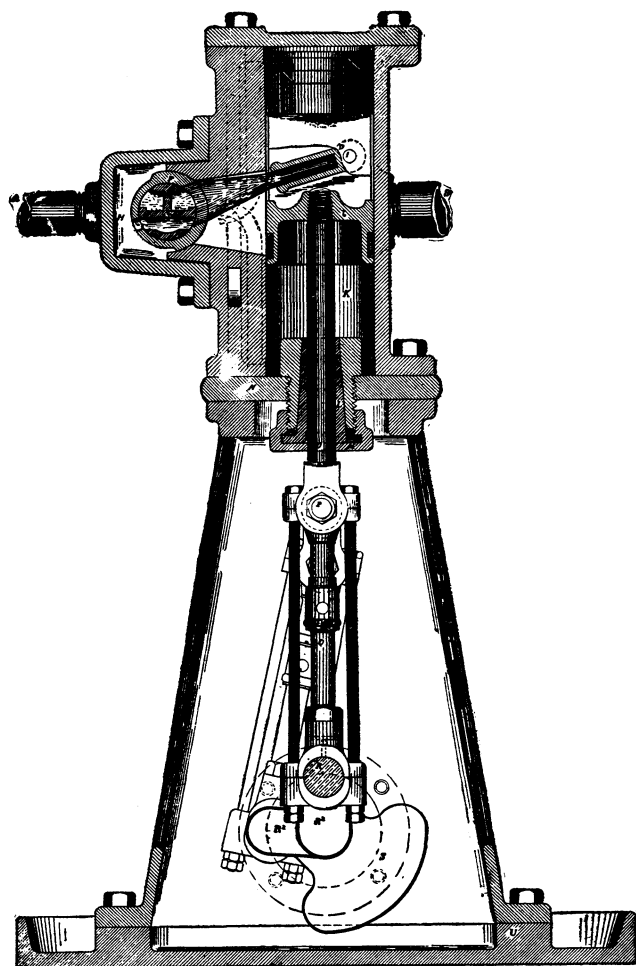


FIG. 3.

the outer valve, thereby changing the register of the steam-passages. The reversing-lever is shown in the plan of the valve-seat, Fig. 6. A cross-section of one of the main bearings with anti-friction metallic bushing is shown at Fig. 7. These bearings are

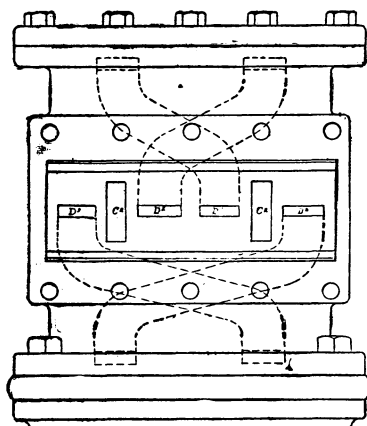


FIG. 4.

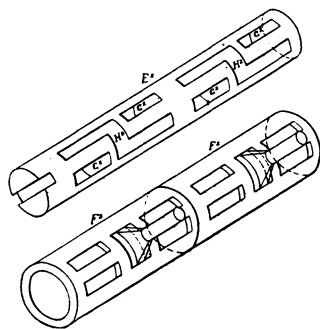


FIG. 5.

conical, and milled through, so that all wear may be easily and quickly taken up by turning the adjusting nut on the bearing casing. The connecting-rods are of the skeleton pattern, with self-oiling bronze boxes lined with anti-friction metal.

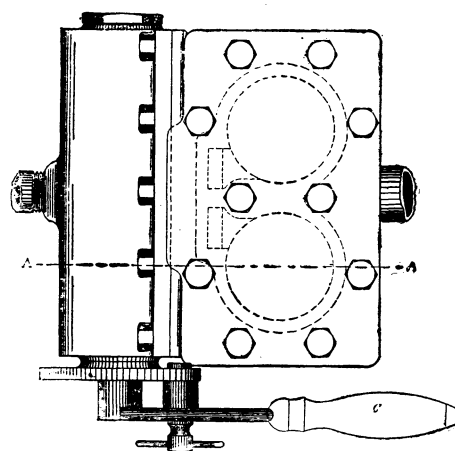


FIG. 6.

valve, and is provided with a pulley on the shaft instead of a coupling. In the larger sizes of these engines they will be made compound, and also automatic, special attention being paid to their adaptability for electric lighting and similar purposes. Among the advantages claimed for this engine are that it is economical,

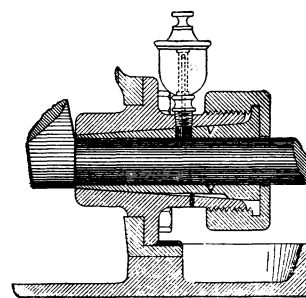


FIG. 7.

light, durable, simple in construction, and easy to operate, having no links, eccentrics, valve-stems, stuffing-boxes, nor dead-centres. It is said to afford greater power in smaller space than any other engine ever constructed, and to have the most positive valve-gear ever designed.

ELECTRICAL NEWS.

NEW INSULATING COMPOUND. — A new insulating compound which finds favor among manufacturers of electrical instruments and machinery in France consists of one part of Greek pitch and two parts of burnt plaster by weight, the latter being pure gypsum raised to a high temperature and plunged in water. The mixture, when hot, is a paste, and can be applied by a brush or cast in moulds. It is amber-colored, and can be turned and polished. Its advantage is said to be endurance of great heat and moisture without injury to its insulating properties.

ELECTRIC TRACTION. — A large and appreciative audience listened to the reading of a paper by S. Dana Greene, on the "Development of Electric Street-Car Traction," at a meeting of the New York Electrical Society on Dec. 11. In Mr. Greene's opinion, the storage-battery system of electric traction is the ideal one for roads of easy grades, though it is yet far from perfect. He predicts, however, that a few years more will develop a wonderful increase in its efficiency and reliability.