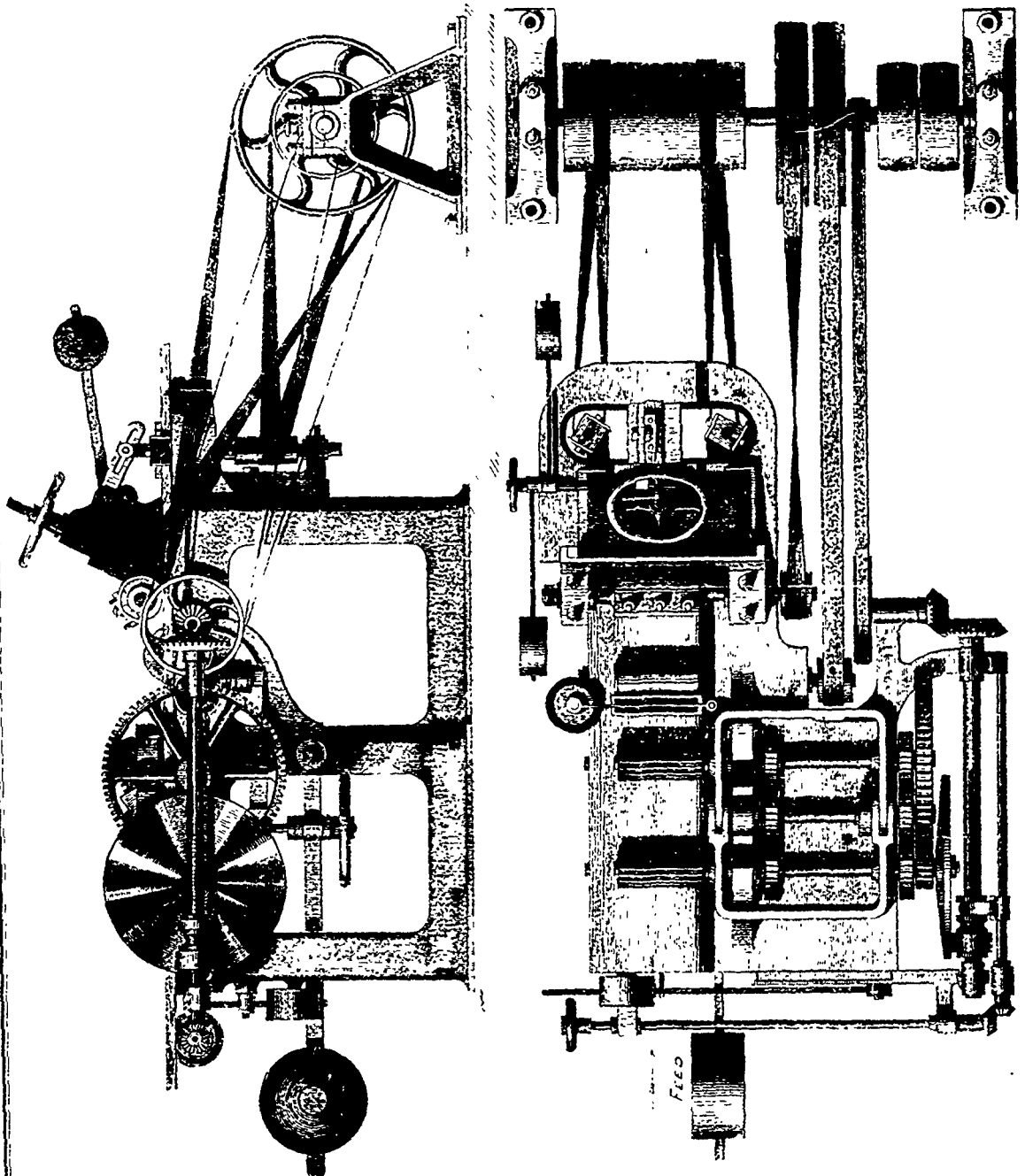

MOULDING AND PLANING MACHINE AT THE VIENNA EXHIBITION.

the bearings so that they may be readily changed according to the kind of moulding and planing to be done, for instance, when planing skirting-boards, parallel rollers are used, but when working, say, inlay mouldings, these are replaced by conical rollers. An economy is effected by first champering the wood at the saw-bench, and if this is done the bearing surface is decreased to such an extent that if parallel rollers were used great weight must be applied to make the wood feed. This is here entirely obviated by the facility with which fluted conical rollers can be substituted, and the larger portion of cone being placed to propel the wood in the part ordinarily termed the "quirk," has a tendency to break the grain, and also allows the deep or quirk part of the iron to work more easily. The rate of feed can be changed without having to stop the machine, by means of an adaptation of frictional contact, the side cutters can be angled so that cylinder lagging or any undercut moulding can be worked at one operation.

MERRYWEATHER'S STEAM FIRE ENGINE.

We give, on the next page, a very good illustration of one of Messrs. Merryweather's large-class double-cylinder engines of the Admiralty pattern. It is worthy of notice as possessing several new features of construction, and as exemplifying the leading principles observed by the firm. The engine weighs barely 57 cwt., and has a pair of pumps 6¾ in. in diameter, and 24 in stroke, and steam cylinders 8¾ in. in diameter, and the same stroke as the pumps. The pumps, as well as their fittings, are made of phosphor-bronze, this metal having been selected on account of its superiority over gun metal, in point of lighter weight with equal strength being obtainable with it. The boiler fittings are of the same metal. The boiler plates, engine frame, springs, &c., are of steel, the boiler tubes being of weldless drawn steel No. 18 gauge.