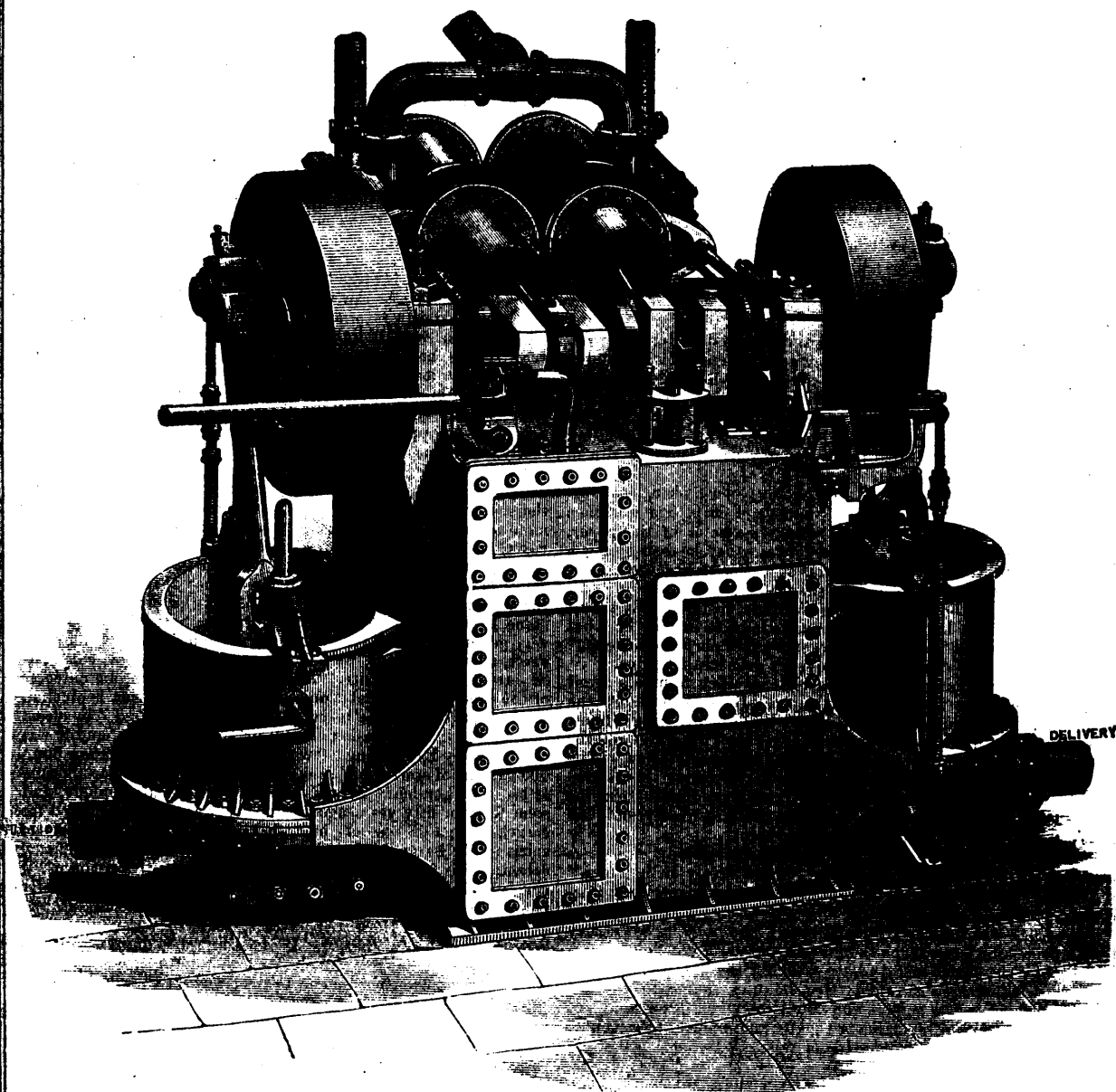




IMPROVED AIR REFRIGERATING MACHINE.

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We illustrate a machine constructed by Messrs. Hall, of Dartford, for use in the Australian meat trade. The engraving is very nearly self-explanatory.

The machine consists of a pair of horizontal trunk engines, mounted on the top of a condenser. To one side is bolted a compressing cylinder, 27 inches diameter and 18 inches stroke. To the other side is bolted the expansion cylinder, 22 inches in diameter and 18 inches stroke; both these cylinders are open-topped. The valves are placed in the bottoms of the cylinders, and are worked by cams on the crank shaft and levers. Air is drawn into the compressing cylinder on the up stroke, and delivered on the down stroke, into the surface condenser at a pressure of about 50 lb. to 55 lb. on the square inch. The air here parts with its heat in the condenser, and it is then delivered in-

to the expansion cylinder, the valve of which cuts off at about one-fourth stroke. The expanded air is then delivered through a pipe into the room to be cooled. About fifty per cent of the work expended in the compressing cylinder is returned in the expansion cylinder, the difference being made up by the engine. The machine is but one of several Messrs. Hall have in hand of different patterns. The outline diagrams show the form they recommend for ordinary use, the height being kept down to render it specially suitable for use between decks, but the machine can be made to take any form almost, and can be made of any dimensions to suit particular requirements. The condenser, or refrigerator, consists of nests of brass tubes, through which the water circulates. The tubes are of brass, half an inch in diameter on the outside. The ends of the tubes are accessible through the man lids shown.—*The Engineer.*