

The general arrangement of the Engine follows the American type, the main bed being of trunk girder pattern, and so arranged that the chief bulk of metal lies in the direct line of strain between the cylinder and crank shaft bearings. The Wheelock Engine was awarded the Great Gold Medal at New York, 1875; the Centennial Medal at Philadelphia, 1876; the Gold Medal at Cincinnati, 1881; Gold Medal at Boston, 1881; and the Grand Prize at Paris, 1878; and at the Millers' International Exposition at Cincinnati, 1880, the Great Gold Medal for the best automatic engine under actual test. The Cincinnati test cost \$15,000, and the award given in competition with the Corliss and other automatic engines was, that "The Wheelock Engine gave the best regulation; the highest economy of fuel; the least clearance, and the least trouble to the operator,"—the highest award ever given to a steam engine. The chief features of the cut-off gear are its great simplicity; the fewness of its moving parts; the small amount of power absorbed in working it, and therefore the absolute control which the governor has over the slightest variation in the load on the engine, and the economy of steam thereby obtained. As distinguished from most of the automatic cut-off engines in the market, the Wheelock Engine has only one eccentric from which both the main steam and cut-off valves are actuated. The wristplate action which exists in the Corliss Engine, being obtained by a very simple and ingenious arrangement (one of the chief features in the construction of this cut-off gear, and the great dissimilarity to ordinary practice), is the suspension of the valve spindles on hardened steel bushes: as a consequence of being thus carried, the valves work with very little power from the absence of friction, and by an ingenious arrangement of the spindles and bushes, a perfectly steam-tight joint is formed, which dispenses with the ordinary stuffing gland and packing, and wear is practically nil.

The Valves are flat slide, with multiplicity of opening and extraordinary area, with minimum of movement. (See Fig. 1.) By the use of a knuckle-joint movement very slight lap is needed, and almost instantaneous opening and closing are secured with great ease of action under the most extraordinary pressure. The separate shells, or seats, show this knuckle joint movement. (See Figs. 2 and 3.)

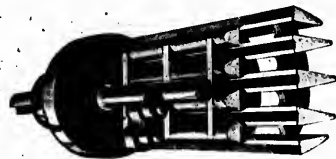


Fig. 1.

This system can be applied to the Corliss type of any body's make, and we guarantee positive advantage by its use.



Fig. 2.

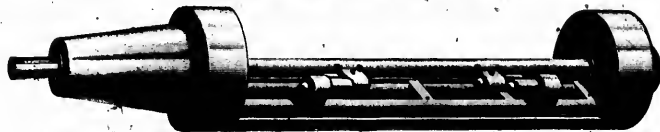


Fig. 3.

These Valves are fitted to separate seats that are driven into the holes in the Cylinder a little tapering, and no Bonnets are used. All the work on them is completed on the work-bench, and when in use they bring *no wear on the Cylinder*.

The system is especially adapted to high speed. The valves are perfectly tight, with no necessity for balancing. By the peculiar arrangement of the valve-movement, the Cut-off is very effective and positive in its action, as the Cut-off Valve has but slight movement after closing, while the knuckle-joint allows of continued movement of the mechanism without moving the valve.

We have replaced a great many Engines of the Brown and Corliss type, and have built more Wheelock Engines than the combined output of all Brown and Corliss Engine builders in the Dominion.