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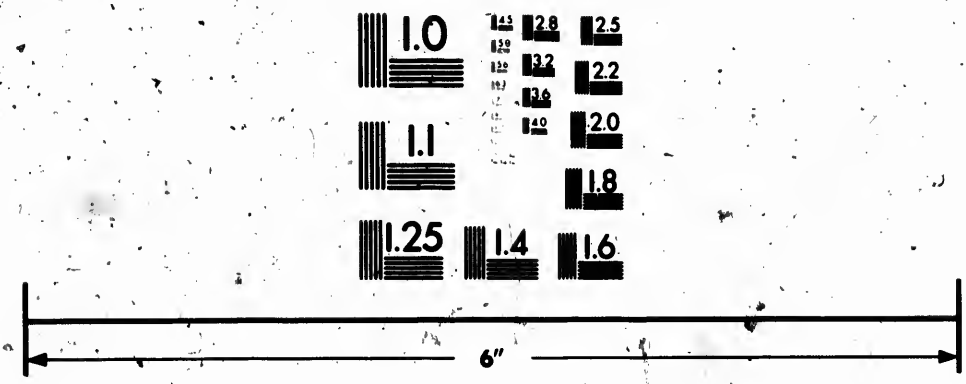

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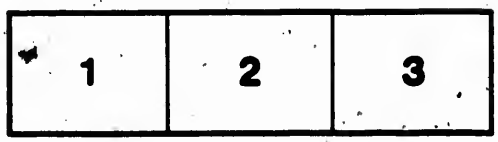

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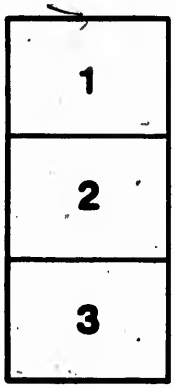
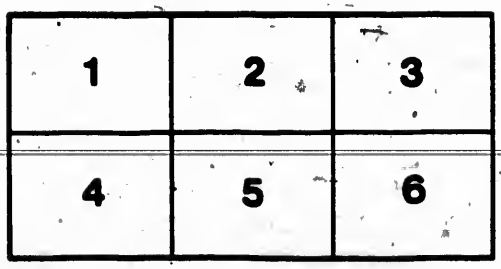




THIS PRICE LIST SUPERSEDES ALL OTHERS — JANUARY, 1886.

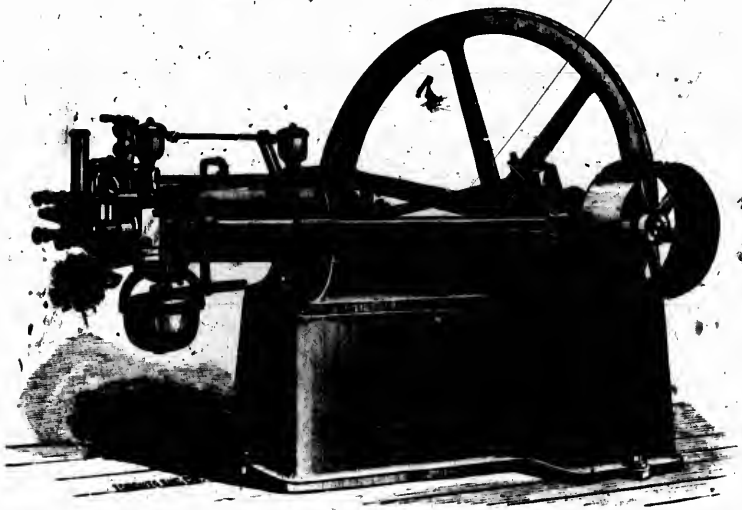
—THE—

New "Otto" Silent Gas Engine

—MANUFACTURED BY—

JOHN DOTY ENGINE CO., TORONTO

SAFETY ✱ CONVENIENCE ✱ ECONOMY



No Boiler — No Coal — No Steam — No Engineer — No Ashes
No Gauges — No Fires — No Pumps — No Danger — No Explosions
No Extra Insurance — No Unpleasant Heat — Almost No Attendance.

Started Instantly with a Match

Always Ready to Give Out its Full Power at once.

Expenses Cease when Engine Stops

Where Power is Required at Intervals it is the Cheapest Motor Known

Over 25,000 in use in England, the United States and Canada

BINGHAM & WEBBER, PRINTERS.

DESCRIPTION

THE engine consists mainly of a jacketed cylinder, with piston, slide valve and governor, having a cut-off mechanism to regulate the supply of gas according to the varying load on the engine. The pressure utilized for the production of the power is generated into the cylinder, and at once availed of therein to propel the piston. This pressure is due to the combustion of a peculiar mixture of common coal gas and air, which is ignited by a small flame carried from a burning gas jet outside into the cylinder by the motion of the slide. The principle of combustion in this gas engine is **entirely new**; a small part only of the charge is combustible, which, on ignition, serves to expand the remainder, thus avoiding shock, and effecting—when compared with other motors of this class—a vast economy. **The "Otto" Gas Engine is considered to possess the least number of working parts and the greatest simplicity of mechanism ever yet obtained in a Gas Engine, or even in many Steam Engines.** It runs with an extreme **smoothness** and **regularity of speed** hitherto unknown in Gas Engines.

Cost of Running as compared with Steam, and amount of Gas required.

THE Gas Engine, requiring no boiler, avoids all the *expensive attendance* or *loss of time* which the watching of water-level, feed pumps and steam pressure gauge demand in a Steam Engine. *The gas flows in freely* and there is *no handling of fuel* of any kind, and *no ashes*; thereby hardly any item of cost for attendance is to be considered—*almost the total expense for running is for the gas alone.* The quantity required in the "Otto" Engine, averages for the different sizes of Engines, *eighteen cubic feet of gas per ind. H. P., per hour*, giving at the varying gas price of from $1.00 to $2.00 per 1,000 cubic feet a cost of from 2 to 4 cents per hour. While running, however, the cut-off being in constant operation, the "*Gas consumption is limited in proportion to the load on engine,*" thereby in practice, in many cases only one-third or one-half of the above rate of consumption is reached. Engine costs nothing while standing, and is started and stopped without waste of fuel and time. The Toronto Board of Fire Underwriters having decided not to charge any additional insurance where these engines may be used, on account of their introduction, the saving effect in this item alone is not an unimportant one.

For What purposes Gas Engines are found to be Useful.

Gas Engines are suitable for all work which, up to the present time, has been done by small stationary steam engines, and besides, for many purposes where steam cannot be used, where small power is wanted, it will, in most cases, be required to be run with a *varying load or intermittently*, thus bringing the trouble with a steam boiler and engine for making and keeping up steam for a comparatively small amount of power to its maximum, while it is at its maximum with a Gas Engine. This feature, together with their entire cleanliness, no space for fuel being demanded, makes Gas Engines highly suitable for use in printing offices, stores, jewellers' work-shops, etc. Their *instant and constant readiness for work* and *perfect safety*, which leaves insurances unaffected, render Gas Engines the cheapest and most convenient hoisting engines known for use in stores or large warehouses. They have, besides, been adopted in schools and academies, for pumping or ventilating in hospitals, public buildings, hotels, etc., blowing organs, running electroplaters, oil and spice mills, coffee roasters, meat choppers, sewing machines and boot machinery, cloth cutting, exhausters and ammonia pumps in gas works, etc., etc.

It being generally admitted that one steam engine will outwear several boilers, the *durability* of the Gas Engine, which is composed of nearly the same essential working parts as the steam engine, alone is self-evident. No boiler being required, the frequent repairs for same, breakage of gauges, repairs on feed pumps, leakage, etc., need not be considered. All the parts are easy of access for adjustment or repairs of ordinary wear.

Dimensions and Price List.

Ind. H. P.	Diameter of Cylinder.	Stroke.	Size of Pulley Double Face.	Revolutions	Weight of Engine.	Floor Space.	Height.	Price of Engine with base.
1	4 in.	8 in.	8 in. x 4 in.	180	1200 lbs	6 ft. x 3 ft.	3 ft. 6 in.	$300
2	4¼ "	9 "	12 " x 6 "	180	1400 "	7 " x 3 " 3 in.	4 " 7 "	400
4	5¼ "	11 "	16 " x 8 "	180	2000 "	8 " x 3 " 10 "	4 " 10 "	575
7	6¼ "	13½ "	24 " x 10 "	160	3100 "	9 " 7 in. x 4 ft. 6 "	5 " 8 "	705
10	8½ "	14 "	32 " x 12 "	160	4500 "	10 " x 4 " 6 "	5 " 8 "	995

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