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BOWER'S PATENT AIR COMPRESSOR.

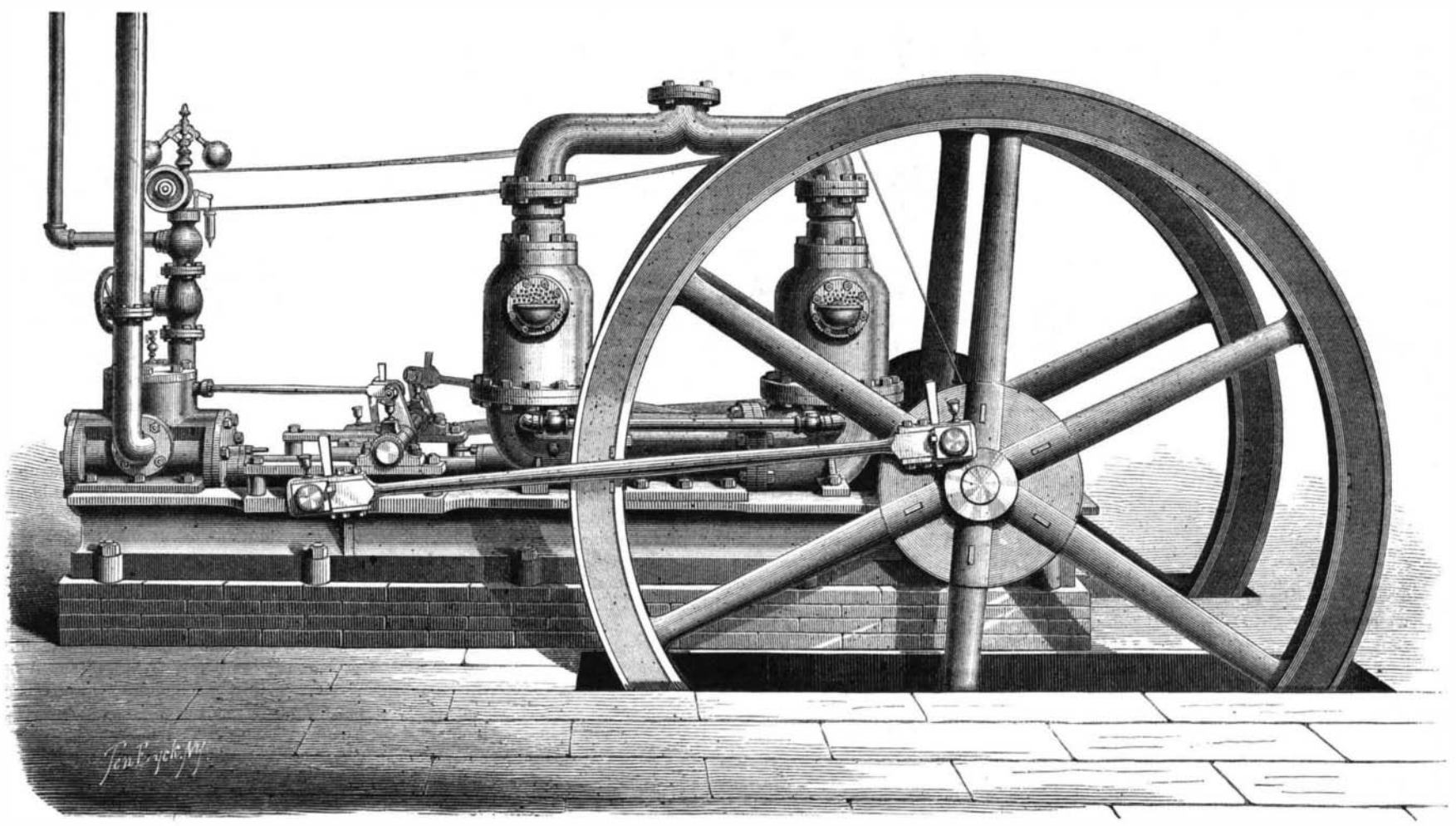
The new air compressor herewith illustrated may be operated by steam or water power, and is available for work in mines, tunnels, or quarries, for driving rock drills, coal cutters, and hauling and pumping engines, working mining pumps, for use in factories, and in fact for all service where a safe and efficient power is required. The construction of the machine, the capacity of which differs according to the amount of power required, will readily be understood from the illustration. Above the air cylinder are two distinct air chambers, each having two induction or receiving valves, which cushion on rubbers. With the movement of the piston these chambers alternately receive and force the compressed air through check valves placed in the upper part of the air compartment, both compartments being connected with one pipe conveying the air to the ordinary air receiver. These check valves lift alternately, and cushion on water; and as the compressed air is forced into the pipe connecting with the receiver, without a possibility of any of it escaping back into the receiving chambers, it is claimed that there is the smallest possible loss of power, and that the machine will give fully 90 per cent of steam power expended in the shape of compressed air. The compressor is compact in form, strongly made, simple in construction, and not liable to get out of order. One peculiarity in its construction is that no water jacket or hollow piston is used; yet under any of the extreme pressures to which the machine has been tested, no inconvenience, we are informed, from heat has been perceptible.

In connection with the compressor, receivers of various sizes are used, into which the air is pumped and thence conveyed by pipe to the location where required, even if it be a mile or more, the loss by friction between receiver and point of utilization of the air being, it is claimed, under 2 lbs. of the pressure.

The manufacturers also build water-power compressors, one of which, driven by 75 to 100 horse power, they have recently shipped to Utah. The machine is intended to convey the air through iron tubes 5,000 feet to the mouth of a silver mine, where a 50 horse power hoisting and a 25 horse power pumping engine will be driven by air instead of steam, and a tube will be extended into the mine 1,000 feet deep, where the power drills and small pumps will be operated by air also.

The manufacturers submit a number of excellent testimonials from parties using the machine. From one, we learn, that at the Antelope and Prince of Wales mine, near Alta City, Utah, the compressor runs 10 hours per day, and supplies compressed air to two 3 inch drills used in running levels. The distribution terminates at distances of from 1,000 to 2,000 feet from the compressor. The machine also drives one hoisting engine and ventilates the lower part of the mine. The main supply pipe is three inches in diameter, 2,300 feet long, and is tapped by two inch pipe wherever power is required. The expenditure of fuel is one cord of green pine wood and 600 lbs. of bituminous coal per 10 hours. Air pressure in receiver 100 lbs. This pressure is reported to be obtained by 70 lbs. of steam as indicated by the gauges.

For further particulars, address the manufacturers, Messrs. Griffith and Wedge, Zanesville, Ohio.



BOWER'S AIR COMPRESSOR.

Death of Professor Santini.

A cable dispatch announces the death of the Italian astronomer, Giovanni Santini. The Professor was born at Tuscany, June 30, 1786, and was in the ninety-first year of his age. He graduated at the University of Pisa. He soon devoted himself to a study of the exact sciences, and in 1814 he had achieved so much distinction that he was appointed to a professorship in the Padowa Observatory in place of Vincenzo Cheminello. In 1825 he was appointed Rector of the University, and up to the time of his death he held the position of Professor of Astronomy and Director of Mathematical Studies. He was generally esteemed by the learned societies of Europe, and held a number of honorary titles and degrees from various leading universities. He was also a correspondent of the French Academy. The principal books published by him are strictly scientific, such as "Decimal Arithmetic" (1808), "Elements of Astronomy" (1820), "Logarithms and Trigonometry," and "Optical Problems" (1821–23). Some of his elementary works on astronomy for beginners are the best ever published in Italy.

John Yule.

The death is announced of Mr. John Yule, of the Hutchestown Engine Works, Rutherglen, N.B., at the age of 66. During early life, Mr. Yule went the round of the best engineers' shops in Scotland and England, and became one of the recognized leaders in engineering progress. His inventiveness took various directions, amongst other fruits being an improved rotary engine, a compensating governor for the steam engine, and a screw tap, drill, and mandrel. For the latter he was awarded the silver medal of the Scottish Society of Arts. For some years Mr. Yule acted as the manager of the boiler department of Messrs. Robert Napier & Son's establishment, but eventually resumed business at the Hutchestown Works, and devoted attention amongst other matters to the improvement of swing bridges and steam cranes and hammers. In the former line two of his most important works are the plate girder bridge over the entrance to one of the docks at Port Glasgow, for the Caledonian Railway, erected from plans by Messrs. Bell and Miller, C.E., Glasgow; and a lattice girder bridge over the entrance to Kingston Dock, Glasgow Harbor. Owing to the angle at which this last bridge crosses the dock, great difficulties were experienced in working out the mechanical details so as to admit of easy motion. These were skillfully overcome, and the bridge was, as finally erected, a monument of his design as well as workmanship. The Blackhill incline on the Monkland Canal, constructed nearly a quarter of a century ago, is a sample of Mr. Yule's mechanical powers. Of late years he was largely engaged as a professional valuator.

Business Prospects.

We have recently taken the pains to make inquiries from the more eminent bankers and merchants in the chief cities of the interior, and the results of our inquiries have tended to confirm the belief we have more than once expressed in this journal, that although, from various causes, there is overhanging a portion of our American industries a cloud of gloom and depression, still throughout the nation at large there is going on a process of growth and recovery from which the best results are anticipated. How long we shall have to wait before the life which is at work silently and secretly beneath the surface will put forth its full power, in the full harvest of productive activity, is, of course, impossible to foretell. What is chiefly important for us to know, however, is that the progress we are making tends upwards and not downwards, and that it promises to lead our industry and commerce to a brighter and not to a darker future.—*Financial Chronicle.*

To Disinfect Rooms.

The disinfection of a room is not complete unless the walls have been thoroughly cleansed. If they are papered, the paper must be removed and the surface beneath carefully scraped and washed. If the walls are painted, they should be washed with caustic soda. The ceiling should also be subjected to a similar treatment.