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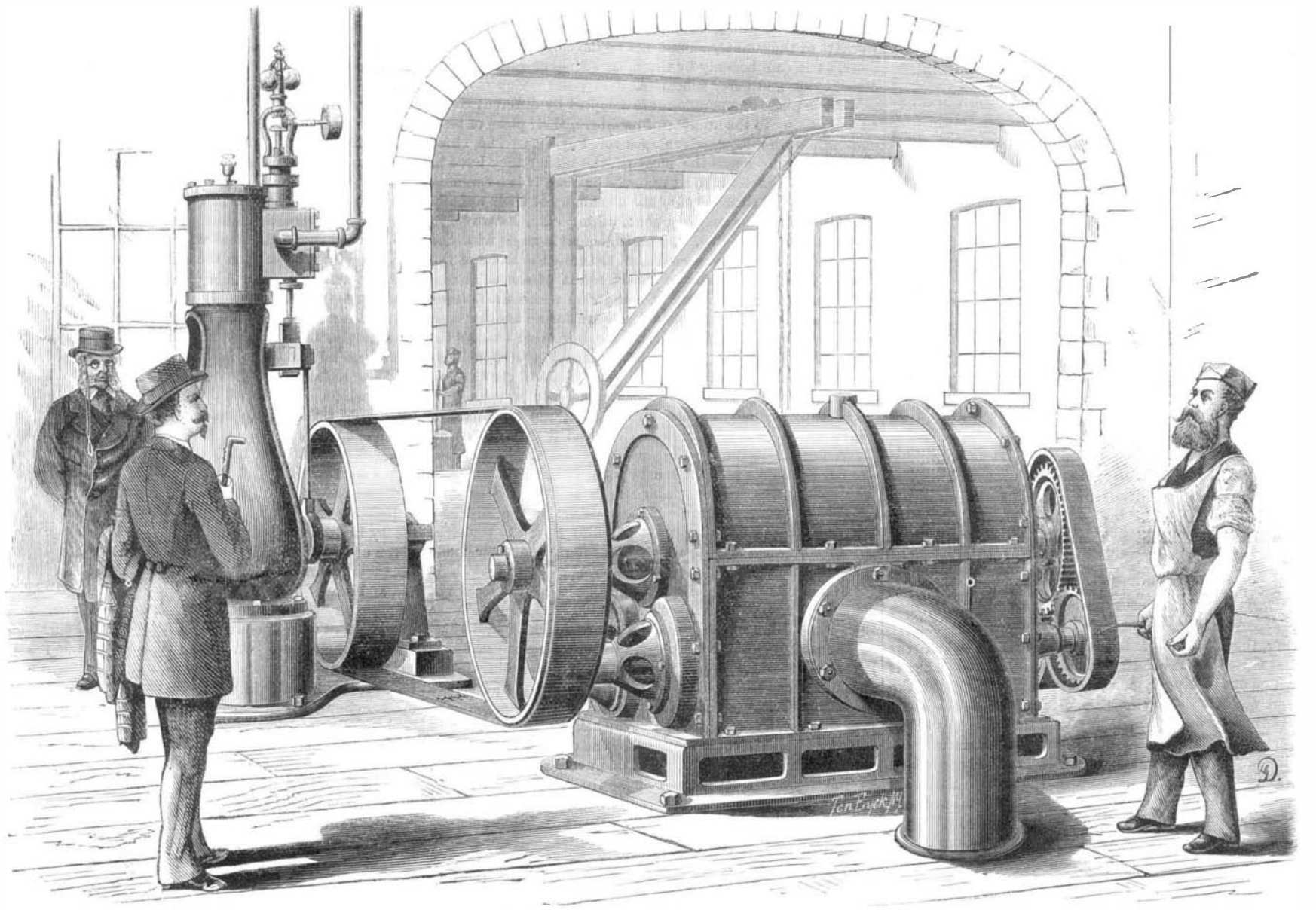
IMPROVED ROTARY PRESSURE BLOWER.

We present herewith engravings of a new rotary pressure blower. The machine produces a forced blast, in such a manner and by such means as to include a variety of advantages worthy of careful consideration. Of these perhaps the first to attract attention are fewness of parts and the strong construction of the entire mechanism. Another point of importance is comparative freedom from friction, there being no portions in actual contact, although in certain localities very close working is necessary. The machine is well adapted for mine use, since it is not liable to injury either by dust or weather; it runs continuously without stopping to be oiled or needing any careful attention.

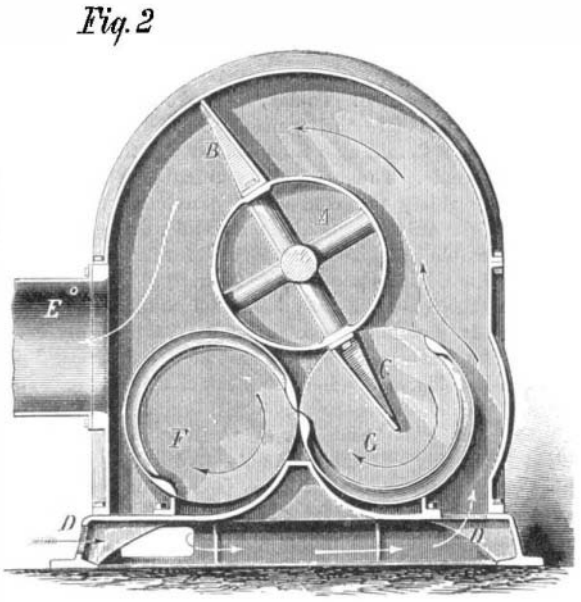


BAKER'S ROTARY PRESSURE BLOWER.

The large illustration affords an exterior view, and Fig. 2 gives a sectional representation of the interior. The external case is made of light boiler iron, formed up very truly and inserted into the heads of the machine, said heads being of cast iron, firmly secured to a bedplate of similar material. They are also bolted together longitudinally by outside iron rods. Within the chest, and concentric therewith, is a cylinder, A (a single iron casting), which is provided with two vanes, B and C. The shaft of the cylinder, A, is rotated by the driving pulley shown outside. The air enters at D, from underneath, and is forced by the vanes out through the outlet, E, in the direction of the arrows. In order to prevent any direct communication between inlet and outlet, two slotted cylinders, F and G, are arranged on separate shafts, the latter actuated by gearing on the main shaft (partially concealed by the figure on the extreme right of the large engraving) so that said cylinders revolve twice as fast as the central drum. As the cylinder, A, therefore turns in the direction of the arrow, Fig. 2, the vane, B, is almost in contact with the upper part of the casing, and is compressing the air before it, driving the blast out of the pipe, E. This compressed air is prevented from returning to the inlet by the cylinder, F, which above is close against the cylinder, A, and below meets the abutments formed on the bottom. The vane, C, at the same time has entered the slot of cylinder, G. A moment's consideration, supposing the auxiliary cylinders to revolve in the direction of the arrows drawn within them, will show that, whatever the position of the vanes may be, one or the other or both of these cylinders will prevent communication between inlet and outlet; while their slots will always be presented to the vanes so that the latter may, at the proper time, enter and so pursue the uninterrupted course necessary to drive a steady blast. In the construction of the machine, nice workmanship is of course required in order to bring adjacent parts just as near to each other as not to touch, and yet to avoid leakage as much as possible. The slight unavoidable leakage, it is believed, is much more than compensated for by the freedom of the moving parts from frictional contact with each other and with the chest.

The speed of this blower, to produce a steady current,

Fig. 2



need not exceed 100 revolutions per minute, and it is stated that a large machine runs with the same amount of power as a small one, when each is delivering the same number of cubic feet per minute. For exhausting air or gases, as in gas works, the capability of working at slow speed and without pulsation is a useful advantage. Similarly, for forcing heated air for drying lumber, grain, etc., or for warming buildings, the machine, owing to its metal construction throughout and nonrequirement of internal lubrication, is excellently adapted. Other utilizations, notably in foundries, will readily suggest themselves.

The inventor, Mr. John G. Baker, of Philadelphia, Pa., sends us a very excellent report, made upon the machine by a committee of judges at the recent Franklin Institute Fair, in which the results of elaborate comparative tests are given, showing the blower to be of a superior degree of efficiency.

Patented December 9, 1873. For further particulars address the manufacturers, Messrs. T. Wilbraham & Brothers, 2,316 Frankford avenue, Philadelphia, Pa.

Nitroglycerin as a Motor.

M. Champion, a French chemist, states that the heat developed by a given quantity of nitroglycerin when exploded is capable of exerting, when converted into motion, a maximum energy fully five times that produced by the explosion of the same amount of gunpowder, and three thousand times more than that caused through the combus ion of an equal quantity of coal. A single quart of nitroglycerin, it is asserted, has the potential energy of 5,500 horse power, working during 10 hours. It remains to invent a machine in which the gigantic force can be harnessed and controlled.

A Novel Business.

A correspondent writes to know if it will be possible for him to secure by letters patent the exclusive right of selling pocket-knife blades, without handles. He thinks the idea original with himself, and, like Colonel Sellers, has reasons to believe "there's millions in it." Our correspondent's idea is certainly novel, but unfortunately the Patent Office laws contain no provision for the patenting of a new business merely.

WE are all living too fast. The man who is always in a hurry generally has his own work to do over again, besides being more liable to trip up and find himself sprawling in the mud.