UNITED STATES PATENT OFFICE.

DAVID M. NICHOLS, OF NEW YORK, N. Y.

IMPROVEMENT IN BLOWERS FOR STEAM-GENERATORS.

Specification forming part of Letters Patent No. **50,265**, dated October 3, 1865.

To all whom it may concern:

Be it known that I, DAVID MEEKER NICHOLS, of the city, county, and State of New York, have invented a new and useful Improvement in Steam-Blowers for Augmenting the Draft of Chimneys; and I do hereby declare that the following is a full, clear, and exact description of my said invention, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan of a section of a steam-boiler smoke-pipe embodying my improvement, and Fig. 2 represents a vertical section of the same at the line *x x* of Fig. 1.

The object of my improvement is to create a powerful draft by means of steam discharged into a chimney, and at the same time to take up as little as possible of the area of the chimney for the apparatus employed to admit the steam.

To this end my invention consists of the combination of a chimney or other passage for a gaseous fluid with a gridiron steam-blower, composed of a series of small pipes connected together in a form similar to that of a gridiron and perforated with small holes for the escape of the steam, so that the entire area of the chimney is pervaded with steam-jets, and the draft is made uniform at all parts, instead of being greatest at the center of the chimney and faint at the sides, as it is when a central steam-jet is used.

My steam-blower is most conveniently made of a series of small wrought-iron tubes, *a a a a*, screwed into a central one, B, of larger size, which extends in the chimney D crosswise to the small tubes, and acts as the distributing-pipe to supply them with steam. This distributing-pipe is connected at its center with a steam-pipe, C, leading from the steam-boiler or other source of the steam used for blowing, and this steam-pipe should be fitted with a stop-cock or valve to regulate the supply of steam and consequently the draft of the chimney. The small tubes *a a a* are perforated with small holes *e e e e e e*, at short distances apart, so that the steam may issue from the blower in numerous small jets, and these holes be drilled in the tubes in directions perpendicular to the plane of the apparatus, so that the steam-jets will point directly upward in the chimney; or they may be drilled slightly skewing, so that the jets will incline to the right or to the left of each tube, or in both directions.

From the gridiron construction of the blower it follows that the effect of the steam is felt about equally at every part of the horizontal section of the chimney, and consequently the gaseous matters above the jets are equally blown out of every portion of the chimney, and the draft beneath is equable. Moreover, as the system of cross-pipes furnishes the shortest possible connection between the jets and the supply-pipe of steam, the area of the chimney is obstructed as little as possible by the apparatus.

The gridiron form of the blower also enables it to be constructed at a lower cost than any other form of blower affording the same number of jets, because the perforated pipes may be gas-tubes screwed directly into the straight distributing-pipe or into branch nozzles projecting therefrom.

I do not claim, broadly, the combination of a chimney with a blower of every form, nor a steam-blower of any form composed of perforated pipes; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a chimney with a gridiron steam-blower, constructed substantially as above set forth.

2. The gridiron steam-blower composed of a series of straight perforated pipes extending crosswise to a distributing-pipe, by which the perforated pipes are supplied with steam, substantially as set forth.

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Witnesses:
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Pulp Digester

No. 50,166. Patented Oct. 3, 1865.

Fig. 2.

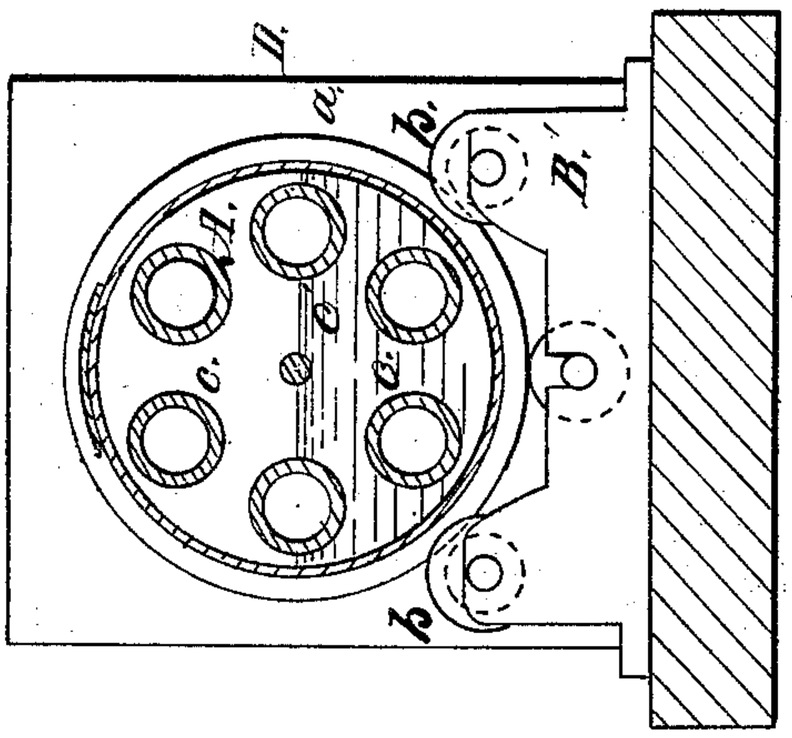

Fig. 1.

Witnesses:

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