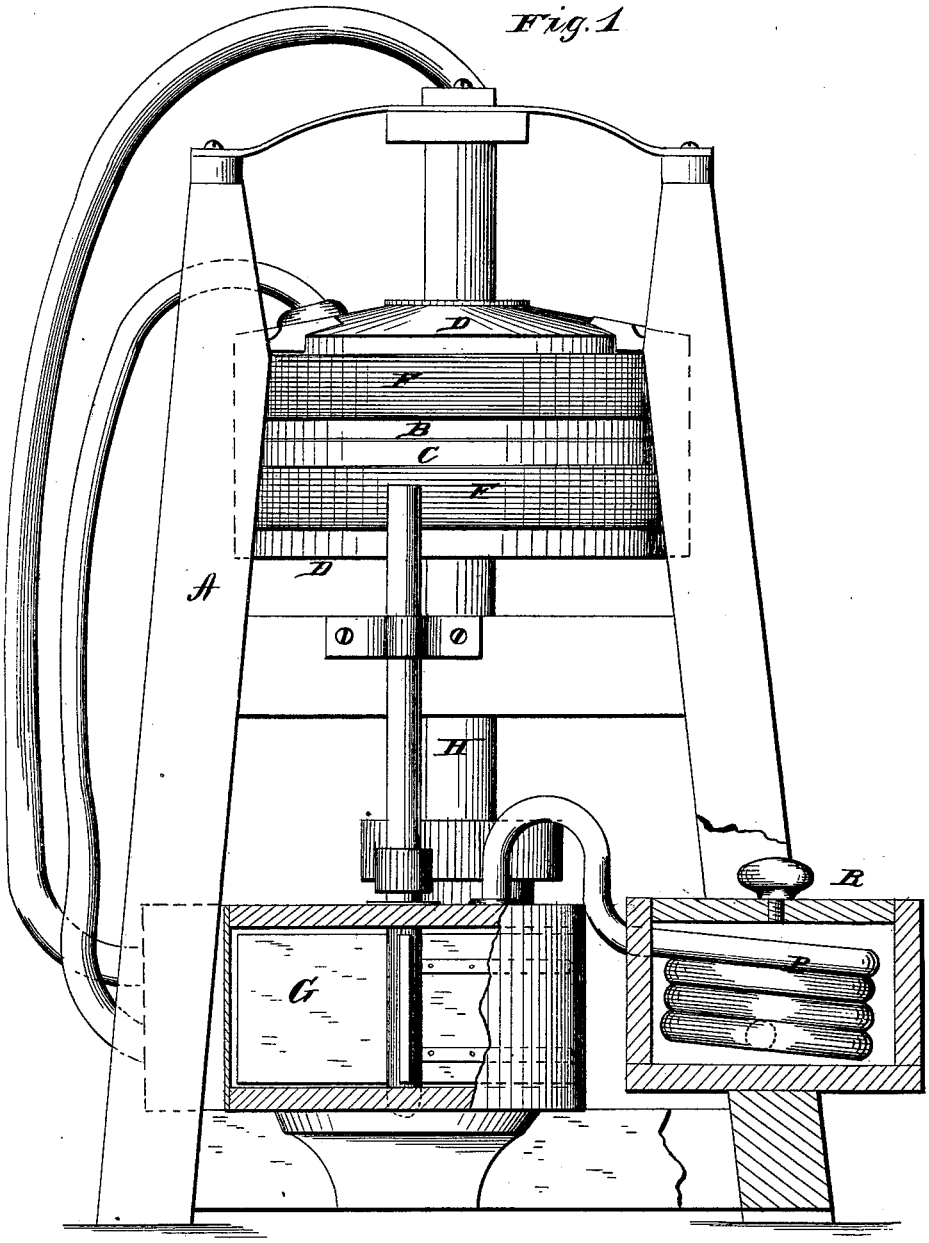
W. DANIELS. 2 Sheets—Sheet 1.

Millstone-Cooling Apparatus.

No. 204,542. Patented June 4, 1878.

Fig. 1



WITNESSES

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2 Sheets—Sheet 2.

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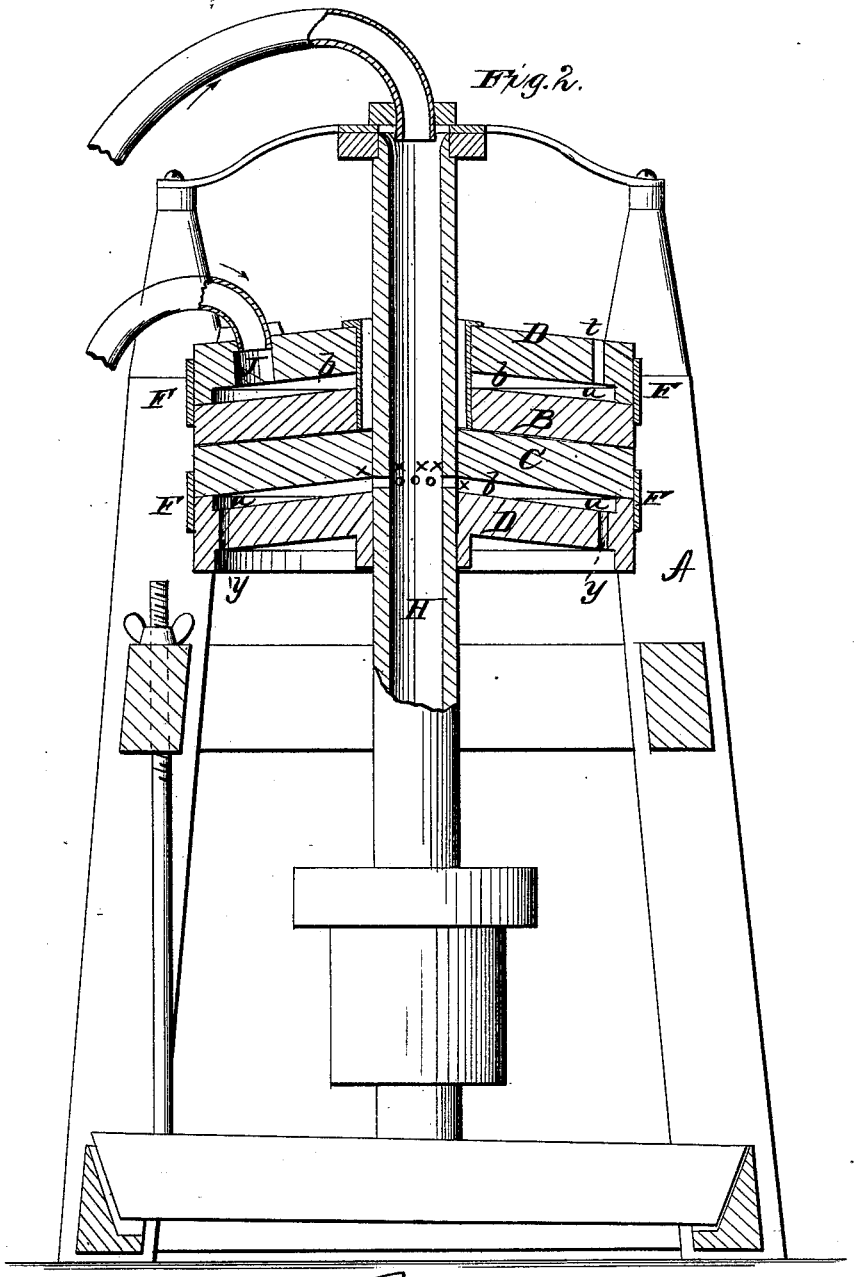
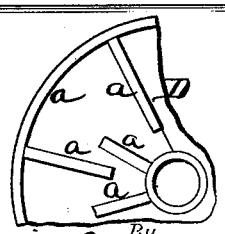
Millstone-Cooling Apparatus.

No. 204,542. Patented June 4, 1878.

Fig. 2.





WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM DANIELS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MILLSTONE-COOLING APPARATUS.

Specification forming part of Letters Patent No. **204,542**, dated June 4, 1878; application filed May 15, 1878.

To all whom it may concern:

Be it known that I, WILLIAM DANIELS, of Brooklyn, in the county of Kings and in the State of New York, have invented certain new and useful Improvements in Devices for Cooling Millstones; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a device for cooling millstones, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation, partly in section, of a grinding-mill embodying my invention. Fig. 2 is a central vertical section of the same.

A represents the frame-work of the mill. B is the upper or stationary stone, and C the lower or running stone. D D represent circular castings of the same size as the stones, each casting being formed with ribs *a a* or their equivalents for supporting the stones. The stones are fitted to these castings, and made fast by shrinking on a heavy wrought-iron band, F. There is thus formed an air-chamber, *b*, by the casting on one side, and the stone on the other, through which cold air can pass and come in contact with the entire surface of the stone, except where it is in contact with the ribs *a*.

The air is forced by means of a fan, G, connected by pipes or hose, into the chamber of the bottom or running stone C down through the shaft or spindle H, the hollow of which is intersected by small holes *x x* leading into the air-chamber and discharging through holes *y* at the verge or skirt of the casting. To the top or stationary stone the air is supplied at J and discharged at *t*.

R represents a refrigerator containing a coil of pipe, P, which is connected to the fan, and through which it receives its supply of air. This refrigerator is to be used in hot weather and warm climates, and is to be cooled with ice or chemicals used for producing cold or any freezing mixture.

The mill shown in the drawings is slightly conical, and is intended for grinding paints; but my invention is applicable to all forms of mills, conical and flat, both top and under runners, also vertical and roller mills. The air-chamber in the roller-mill is formed by making the rollers hollow, the air to be forced in through a hollow shaft or spindle.

The stone-supporters *a* in the air-chambers may be made in the shape of rings, posts, or ribs, or in any manner not obstructing the free passage of air.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of grinding-stones provided with interior air-chambers, a fan or bellows, a refrigerator with coiled pipe cooled with ice or other material, and pipes or hose connecting the coiled pipe with the fan and the fan with the air-chambers, for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of April, 1878.

WM. DANIELS.

Witnesses:
J. W. DANIELS,
JOS. H. BURRILL.