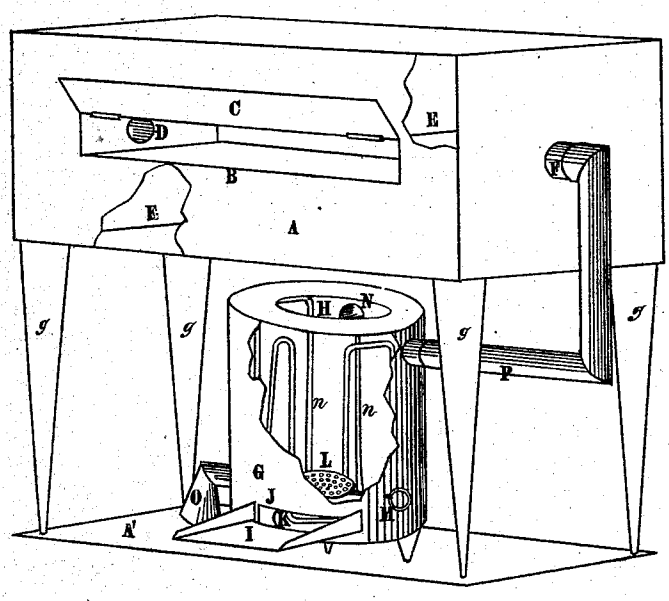
W. J. JOHNSON.

Drying-Apparatus.

No. 158,590. Patented Jan. 12, 1875.

Fig. 1.



Witnesses;

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN DRYING APPARATUS.

Specification forming part of Letters Patent No. **158,590**, dated January 12, 1875; application filed November 10, 1874.

To all whom it may concern:

Be it known that I, WILLIAM J. JOHNSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Drying Apparatus, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is an isometrical perspective view, showing my improvement.

My invention relates more especially to that class of drying apparatus used in printing establishments for drying matrices; and consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a more effective device of this character is produced than is now in ordinary use.

In nearly all daily-newspaper establishments where the paper has a very large circulation, it is found necessary to stereotype or reproduce the forms, in order to delay going to press as long as possible, and then work off the addition in time or with sufficient rapidity.

The matrices or molds in which such stereotypes are cast are produced by taking an impression of the form by means of a pulpy composition applied to the face of the type under pressure, which composition is afterward carefully removed and dried.

It will be obvious that the whole operation of producing the matrix in that manner and under such circumstances must necessarily be a very rapid one, in order to make it available; but by the ordinary process vexatious and expensive delays frequently occur on account of the difficulty experienced in drying the matrices properly and in season.

My invention is designed to obviate this difficulty, and to that end I make use of an improved apparatus, which I will now proceed to describe.

In the drawing, B represents a hot-air compartment or oven, which is entirely surrounded upon its ends and three sides by the casing A, which is supported by the legs *g g* upon the base or floor A, and is broken away at E E to show its interior construction. The oven is closed by the door C, and is also provided with the eduction-pipe D and induction-pipe F. Beneath the chest there is a stove or furnace, G, provided with the draft apparatus J K, hearth I, grate L M, port H, and funnel N. Within the stove there is a coiled or bent pipe, *n n*, connected at one end with the blower-pipe O, and at the other with the pipe F, being incased between the stove and pipe F by the funnel P, to avoid cooling. The case A forms a steam-chest around the oven B, and is designed to be supplied with steam in any convenient manner to heat the oven. The pipe O is also designed to be connected with an ordinary fan-blower, by which air may be forced through the pipes *n n* into the oven B.

From the foregoing the nature and operation of my invention will be readily understood by all conversant with such matters.

In using my improved apparatus, steam is let into the case, and a fire made in the stove, the blower connected with the pipe O being also put in operation, forcing the air through the stove, where it becomes highly heated, and is discharged into the oven in a continuous current, from which it passes through the pipe D. The matrix to be dried is then placed in the oven and the door tightly closed, the heat from the steam causing the moisture in the matrix to be rapidly evaporated, and the current of dry heated air from the pipes *n n* absorbing the same, and carrying it from the oven through the pipe D.

In this manner a matrix may be dried in a very few minutes, and in a more perfect manner than by any other process with which I am acquainted.

It will be obvious that the stove may be omitted, and a current of heated air supplied to the oven by any other convenient method; also, that instead of steam hot air or any other convenient means may be employed to heat the oven without departing from the spirit of my invention.

Having thus described my invention, what I claim is—

The internal hot-air chamber B, provided with induction and eduction pipes F D, and the stove or furnace G provided with the pipe O, in combination with the steam-chest A surrounding the chamber B, substantially as and for the purpose described.

WILLIAM J. JOHNSON.

Witnesses:

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