(No Model.)

E. STOSCH.

PAPER MATRIX DRIER.

No. 324,496. Patented Aug. 18, 1885.

Fig. 1.

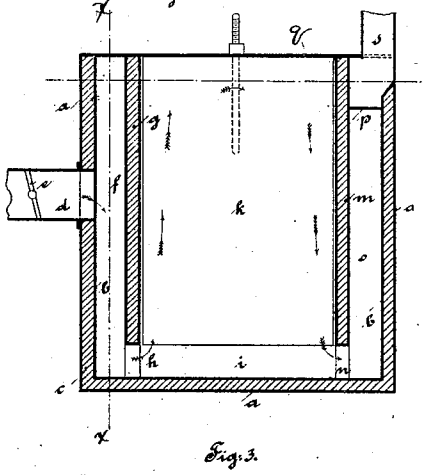


Fig. 2.

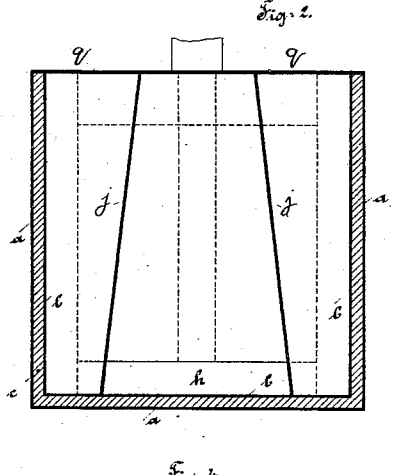


Fig. 3.

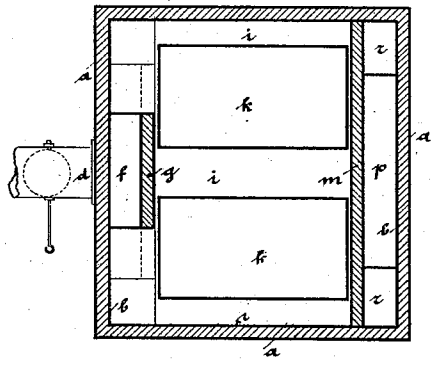


Fig. 4.

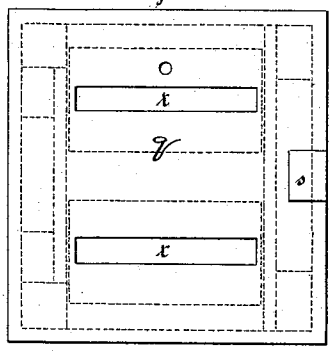


Fig. 5.

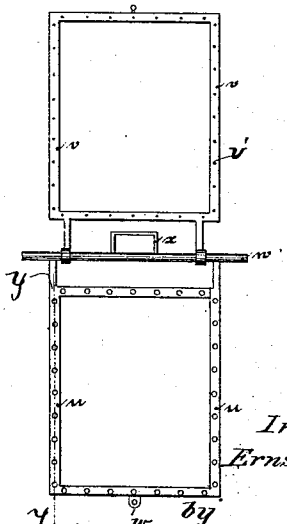


Fig. 7.

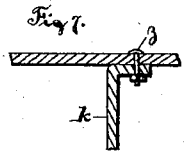
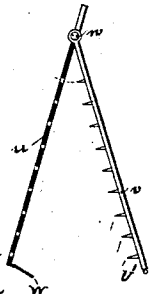


Fig. 6.



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UNITED STATES PATENT OFFICE.

ERNST STOSCH, OF STETTIN, GERMANY, ASSIGNOR TO HENRY HARTT, OF CHICAGO, ILLINOIS.

PAPER-MATRIX DRIER.

SPECIFICATION forming part of Letters Patent No. 324,496, dated August 18, 1885.

Application filed April 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, ERNST STOSCH, of Stettin, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Apparatus for Drying Stereotype Matrices; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My invention has for its object to provide an improved drying apparatus for stereotype matrices; and it consists in certain novel details of construction and combinations of parts which I will now proceed to describe.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of a drying apparatus constructed in accordance with my invention. Fig. 2 is a sectional view on the line *x x* of Fig. 1. Fig. 3 is a horizontal sectional view. Fig. 4 is a top plan view. Fig. 5 is a view of one of the frames for holding the matrices, and Fig. 6 is a sectional view of the same on the line *y y* of Fig. 5. Fig. 7 is a view showing the manner of connecting the chambers *k* to the top of the drier.

Similar letters of reference in the several figures indicate the same parts.

In the making of matrices for stereotyping printed matter, heretofore it has been the practice to place the papier-maché wet upon the surface of the type, press it down, remove the papier-maché, and place in an oven, so that the matrix may be dried; but the objection to this is the matrix will dry quicker on the upper than on the lower side, and is liable to warp; but my invention is designed to obviate the objections to this form by suspending the matrices in a suitable drying-chamber and supporting them at the edges only, so that they may be dried equally on all sides and will be less liable to warp out of shape.

In carrying out my invention I provide a chamber or receptacle of any suitable size constructed with the walls composed of sheet-metal shells *a a*, with a filling between them of non-conducting material *c*, so that no heat from the drier will be lost by radiation, and within the chamber thus formed are two partitions, *g m*, one at either end, the former, *g*, at the forward end, and extending from the top to a position near the bottom of the chamber, leaving a space, *h*, as shown. Sheet-metal pieces *j j* are provided extending from the top of this partition down to the bottom of the chamber, slightly diverging near the bottom, as shown. The partition *m* at the other end of the chamber extends from the top nearly to the bottom, leaving a space, *n*, corresponding to the space *h* under the other partition, and near the upper end of it a deflecting or retarding plate, *p*, is provided, extending nearly across the passage-way formed between the partition and the end of the chamber, a small space, *r r*, being left at each end. The object of this deflecting-plate is to retard somewhat the draft through the chamber and prevent the steam or hot air passing off without heating the chambers *k*.

k k represent two chambers or boxes closed at the bottom and secured to a lid or cover, *q*, in any suitable manner, and projecting down into the main chamber to about a level with the end of the partitions, and slots *t t* are provided in the covers of these chambers for the insertion and removal of the frame supporting the matrices. *d* represents a pipe or tube provided with a valve, *e*, for regulating the amount of hot air or steam permitted to enter, and *s* a flue or aperture through which it finds an exit.

In Fig. 7 I have shown one manner of connecting the chamber *k* to the top *q* of the drier, in which the chambers are made of sheet metal, and are provided with the outwardly-turned flanges, as shown, through which and the top or lid the bolts *z* pass; but it is obvious that the chambers may be connected in any other suitable manner.

It will be observed that the chambers *k* are supported only at their upper ends, thus permitting a free circulation of air or steam around them in the space *i i i*.

In Figs. 5 and 6 are represented the frames in which the matrices are held and supported, each consisting of two portions, the one, *u*, connected with the cross-bar *n*, and provided with the handle *w* and the perforations around it, and the other, *v*, hinged to the cross-bar *n*,

and provided with the teeth v', corresponding to the perforations in the frame u.

The papier-maché matrices to be dried are placed upon the frame u, and the section v is then forced down and its teeth pushed through the matrix and through the perforations in the co-operating sections, the two sections, with the matrix between them, being held together by means of a suitable spring-catch, w, at the lower ends.

The frame containing the wet matrix is now inserted in the slots t in the cover of the chamber, with the ends of the bar resting on the top and the matrix wholly within the chamber k. Steam or hot air is now admitted through the pipe d, and, striking the partition g, descends and passes through the aperture h, rises and circulates around the chambers k in the spaces i, containing the matrices, heating them, and, becoming cooler, falls to the bottom, passes under the partition m, rises, and, striking the deflecting-plate p, passes through the openings $r\ r$, thence to the exit-flue s.

It will be observed that the frames and matrices hang in a vertical position, which is also a great advantage over laying them horizontally, as the hot air in circulating will pass up both sides, carrying off the moisture and permitting them to dry more evenly.

While I have described only two chambers for containing the matrices and frames, it is obvious that a greater number can be employed and the large chamber increased in size indefinitely, so as to accommodate them, and also that the proportions and positions of the parts can be varied without departing from the spirit of my invention.

With the temperature in the chambers k at 120° Fahrenheit I find that I can dry matrices for ordinary newspaper pages in a few moments, and this is a great advantage where a newspaper is to be printed, no time being lost in waiting for the matrices to dry before stereotyping.

I claim as my invention—

1. In a drying apparatus for stereotype-matrices, the combination, with the heating-chamber provided with the partitions g and m, of the chamber or chambers for containing the matrices, located within the heating-chamber, substantially as described.

2. In a drying apparatus for stereotype-matrices, the combination, with the heating-chamber provided with the partitions g and m and the retarding-plate p, of the chamber or chambers for containing the matrices, located within the heating-chamber, substantially as described.

3. In a drying apparatus for stereotype-matrices, the combination, with the heating-chamber, a valve for regulating the amount of hot air or steam admitted, and partitions or abutments for preventing the direct passage of the steam or hot air through the chamber, of the chamber or chambers for containing the matrices, located within the heating-chamber, substantially as described.

4. A frame for supporting stereotype-matrices, consisting of the two sections provided with the retaining hooks or teeth and adapted to support the matrix between them and at the edges only, substantially as described.

5. A frame for supporting stereotype-matrices, consisting of the two sections hinged together, provided with retaining hooks or teeth and adapted to support the matrix between them and at the edges only, substantially as described.

6. A frame for supporting stereotype-matrices, consisting of two sections hinged together at one edge, and one provided with teeth, and the other provided with co operating perforations, substantially as described.

7. A frame for supporting stereotype-matrices, consisting of two sections hinged together at one edge, the one provided with the cross-bar and handle and the perforations, as shown, and the other section hinged to the former and provided with the teeth or projections co-operating with the perforations in it to hold the matrix at the edges only, substantially as described.

8. The combination, with the heating-chamber in which the hot air or steam circulates, of the series of drying-chambers for containing the matrices, located within the heating-chamber, and the frames for supporting the matrices at their edges only, adapted to be suspended within the drying-chambers, substantially as described.

9. The combination, with the heating-chamber, of the drying-chamber located within it and containing the matrix, the frame for supporting the matrix at the edges only placed in a vertical position, whereby the two sides of the matrix will be heated and dried equally, and it will be prevented from warping, substantially as described.

10. The combination, with the heating-chamber, of the drying-chamber located within it and adapted to contain the matrix, having the slot in its top for permitting the insertion and removal of the matrix-frame, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNST STOSCH.

Witnesses:
GEO. F. LINCOLN,
JULIUS DITTMER.