(No Model.) 2 Sheets—Sheet 1.

R. H. HEALEY.

APPARATUS FOR DRYING MATRICES.

No. 520,642. Patented May 29, 1894.

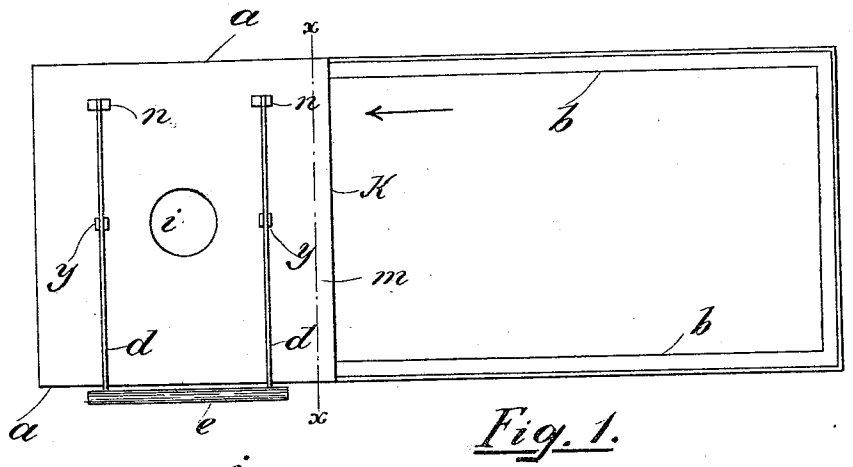

Fig. 1.

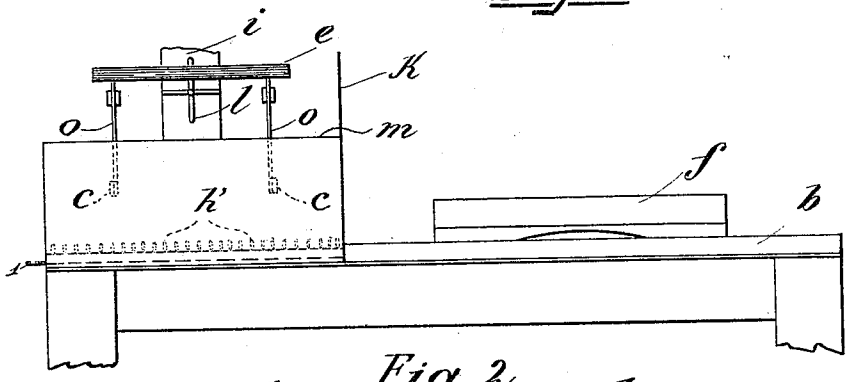

Fig. 2.

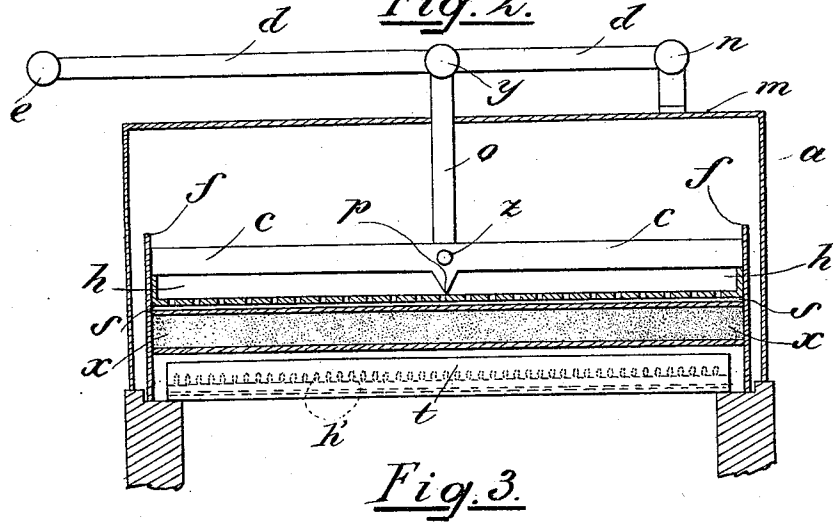

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

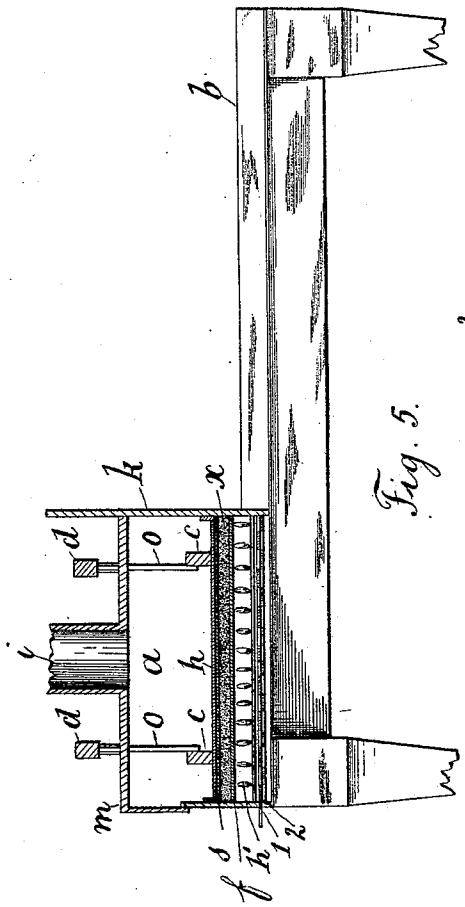
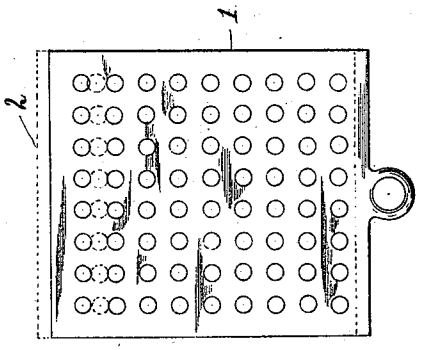


Fig. 5.



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UNITED STATES PATENT OFFICE.

REUBEN HERBERT HEALEY, OF LONDON, ENGLAND.

APPARATUS FOR DRYING MATRICES.

SPECIFICATION forming part of Letters Patent No. 520,642, dated May 29, 1894.

Application filed March 13, 1891. Serial No. 384,884. (No model.)

To all whom it may concern:

Be it known that I, REUBEN HERBERT HEALEY, of 54 Blackfriars Road, London, England, have invented a certain new and useful Apparatus to be Used for Drying the Matrices Used for Stereotyping Purposes, of which the following is a specification.

This invention consists of a special apparatus for drying matrices for stereotyping.

The present practice is to dry the matrix while still on the surface of the type, but this method is injurious to the type, which have to be heated every time.

The method I adopt is, to remove the matrix from the type while damp, and insert it in the special drying apparatus, which I will now proceed to describe, with reference to the accompanying drawings, in which—

Figure 1 shows a plan view of the drying apparatus. Fig. 2 is a side view in elevation showing the carrier drawn out. The ends of the pressure bars and parts of the links and the gas jets are dotted in to show their different positions. Fig. 3 is a sectional elevation on enlarged scale showing the lever bars *d*, *d*, pressed down and the pressure bar *c*, bearing on the center and edges of the tray *h*, equal pressure being applied at its two edges and in the middle at the point *p*. Beneath the tray *h*, is the matrix *s*. Fig. 4 represents a side view of the apparatus, the oven being shown in section, and illustrating the position of the two perforated plates beneath the gas burners. Fig. 5 represents a top view of the two sliding perforated plates, the lower plate being shown in dotted lines.

Below the lines which represent the matrix *s* is the powder *x* resting on the bottom of the carrier *f*.

The letter *h'* designates the gas jets, which are situated below the carrier *f* when the same is in position in the oven, and are preferably distributed in a square so as to heat equally all parts of the bed of powder *x* on the carrier *f* above the same, and below these gas jets are the two perforated plates 1 and 2, one of which slides over the other, so as to vary the admission of air to the oven to feed the gas flames, by varying the size of the orifices through said plates 1 and 2, accordingly as the perforations therein do or do not register fully with one another, and the perforations in said plates are preferably similar in number to the gas jets, and when in position each of such perforations is preferably located immediately below one of such gas jets.

The letter *t* designates a sort of baffle-plate, which is of barely sufficient height to allow the carrier *f* to pass easily over the same, which plate abuts against the square of gas jets at the front or open end of the oven, and serves to cause the heated air to pass in a thin stream against the bottom of the carrier *f*, and between the same and said plate *t* as it passes from beneath the said carrier.

a, is the outer case.

b, *b* are the runners for the carrier *f*.

i is the chimney.

d, *d* are the lever bars fulcrumed at *n*, *n* for elevating or depressing the pressure bars *c*, *c*.

e is the handle to *d*, *d*.

c, *c* are the pressure bars which press on the tray or plate *h*, and thus exert a uniform pressure on the matrix *s*.

h is the perforated tray or plate. It has turned up edges on two sides so that the pressure on the ends of the pressure bar shall be equal to that exerted on its center by the pointed part *p*.

s is the matrix above which blankets are placed. It is put face downward into the powder *x*.

f is the containing carrier which slides to and fro on the runners *b*, *b*.

p is the pointed center of the pressure bar *c* which presses on the center while its ends press on the turned up sides of the tray *h*, and *k* is the outside door which slides up and down.

l, is the contrivance for turning off or on the draft.

y and *z* are two loose pivot joints by which the links *o* are held whereby the lever bars *d*, *d*, are connected to the pressure bars *c c*, so as to allow them to adapt themselves to the angle that the tray *h* may lie in.

m, is the top-plate of the oven to which the pivot bars or fulcrum *n*, of the lever-bars *d*, are fixed. The oven *a*, contains a powerful atmospheric gas burner, or other arrangement for heating, capable of raising the temperature as high as 750° in a short time.

When available I prefer to adapt my oven for burning gas owing to its convenience, but it is obvious that the necessary heat can be

obtained from oil, or steam, or from any other kind of fuel with suitable arrangements for its application and regulation. Beneath the gas burner above described are two sliding perforated plates 1 and 2 for regulating the admission of air.

The mode of working my invention is as follows:—The damp matrix is taken off the type and laid on a special bed of light dry powder inside the carrier *f*, and is then placed within the oven, being first covered with the usual blanket over which is placed a perforated metal plate, which plate is pressed tightly down by the pressure bars and levers *c*, *c*, *d*, *d*. This pressure is easily applied by the operator from outside the oven by means of the handle *e*. The interior of the oven is then heated to a temperature sufficient to insure the rapid drying of the matrix, which is effectually completed in a few minutes as my heating arrangement provides for a thorough distribution of heat over the entire area of the oven.

The result is that after being thus heated in the oven for about five minutes the matrix is withdrawn and found to be thoroughly dry and yet perfectly level and fit for receiving the melted type-metal used to form the stereo-plate.

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

The combination with a receiving table of an oven arranged in connection therewith and provided with a door, a carrier adapted to fit within the oven and to rest upon the table, pressure bars arranged within the oven, levers fulcrumed outside of the oven, and links by which the pressure bars and the levers are connected substantially as described.

Signed at London, England, this 12th day of February, A. D. 1891.

REUBEN HERBERT HEALEY.

Witnesses:

GEO. BLACK,

W. S. BROMHEAD.