

(No Model.)

J. B. EDSON.

FRAME FOR DRYING SUBSTANCES IN SHEETS.

No. 277,693.

Patented May 15, 1883.

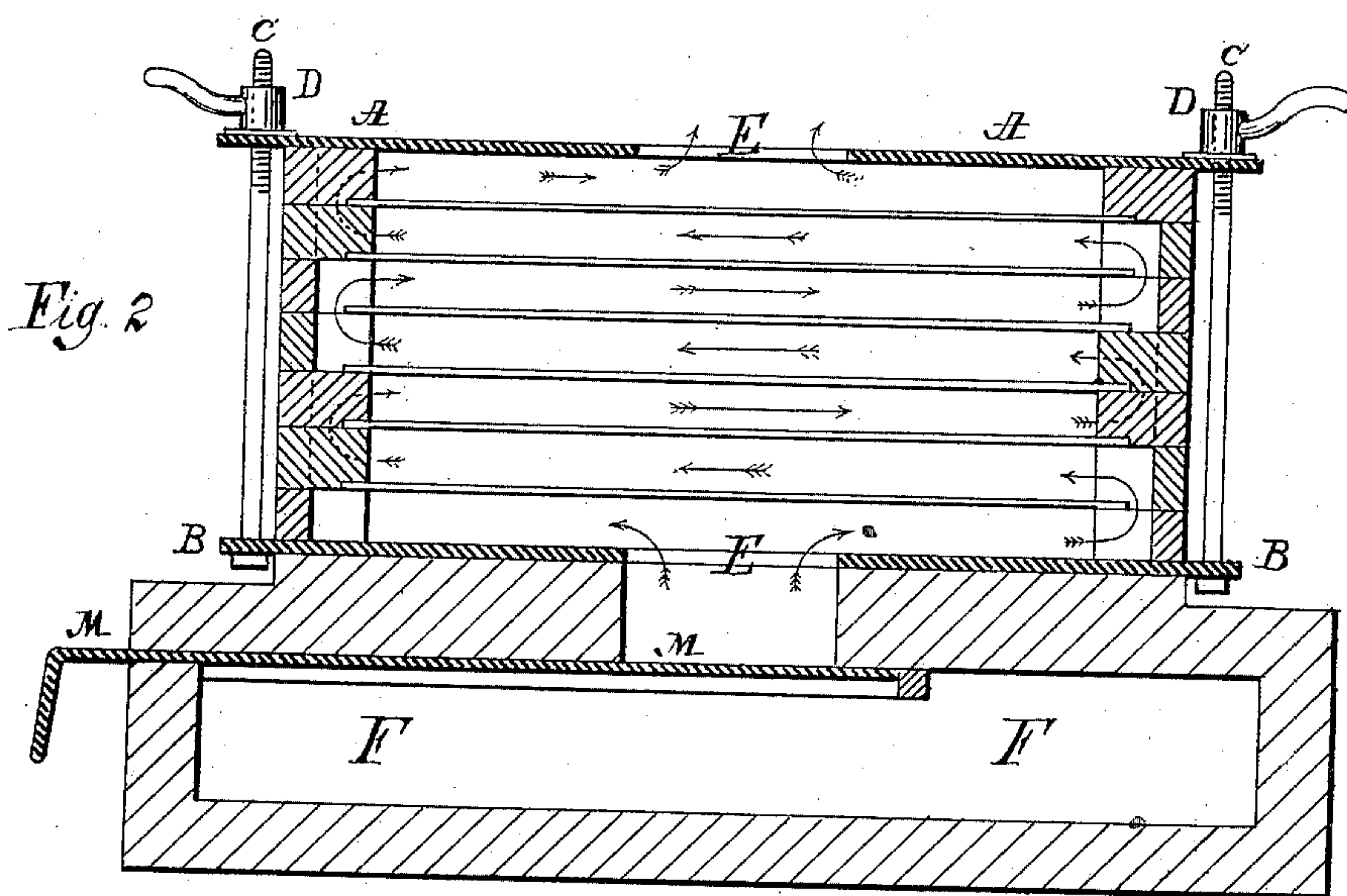
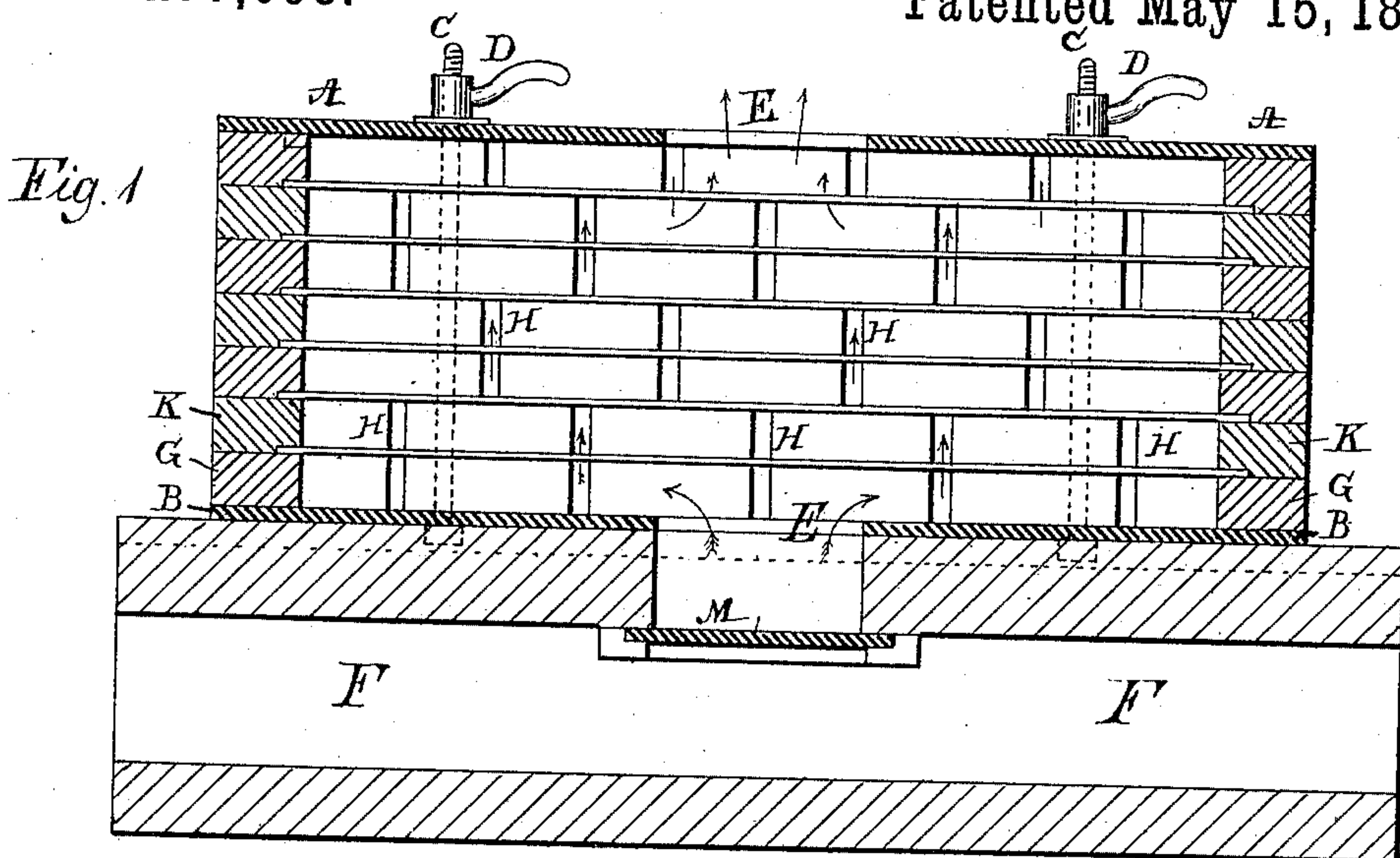


Fig. 3

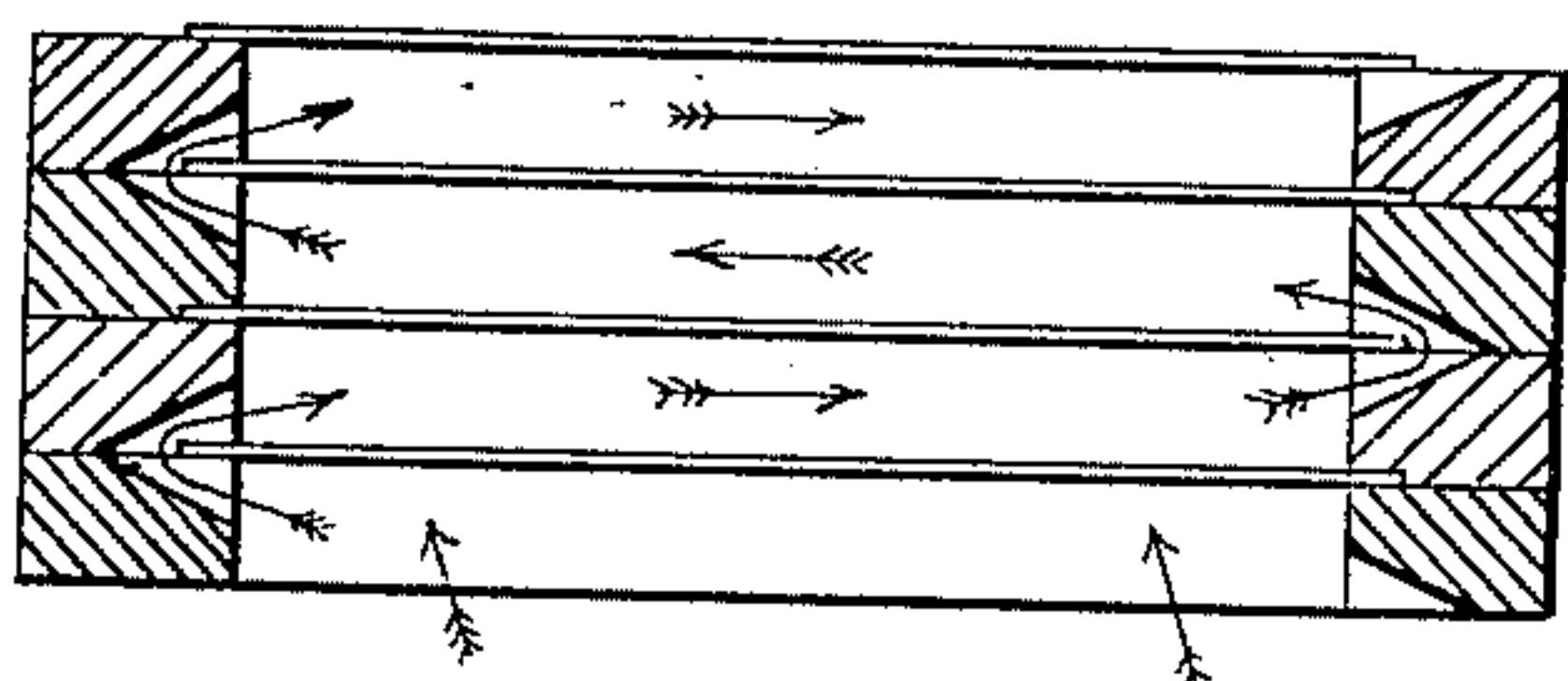
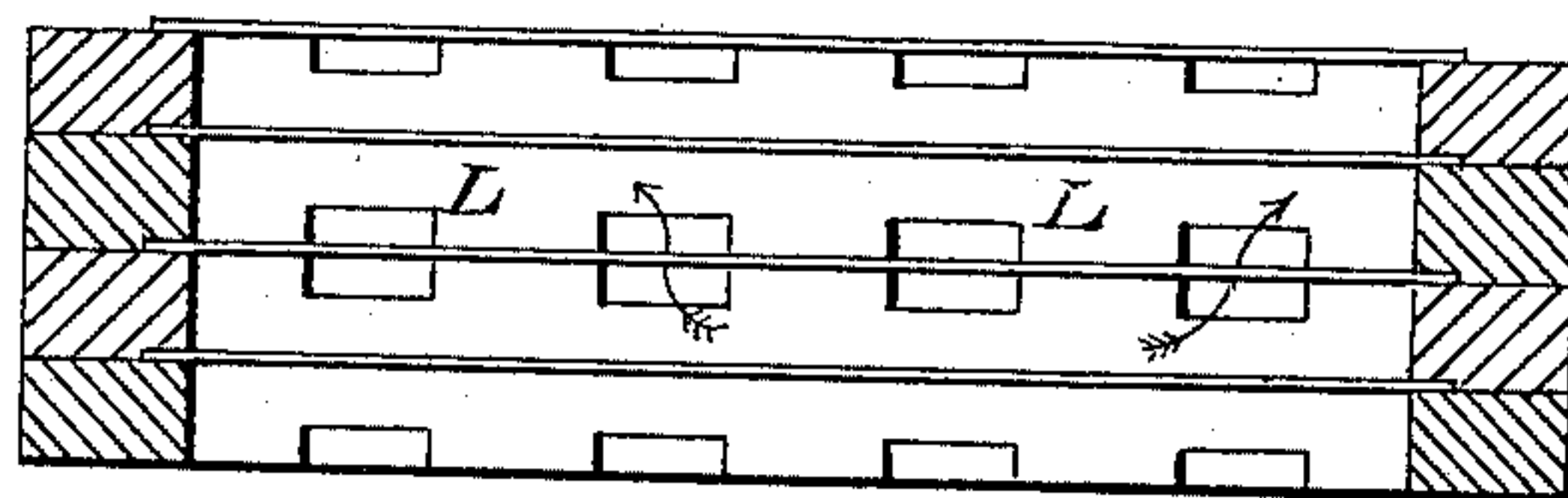


Fig. 4



Witnesses:
Eugene N. Eliot
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UNITED STATES PATENT OFFICE.

JARVIS B. EDSON, OF NORTH ADAMS, MASSACHUSETTS.

FRAME FOR DRYING SUBSTANCES IN SHEETS.

SPECIFICATION forming part of Letters Patent No. 277,693, dated May 15, 1883.

Application filed February 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, JARVIS B. EDSON, of North Adams, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in Frames for Drying Substances in Sheets, of which the following is a specification.

The object of this invention is to hold sheets of paper or gelatine or zylonite, &c., firmly stretched while being dried, so that they will be smooth and flat when the operation is fully completed; and the invention consists in forming the frames of the proper size to clamp the edges of the sheet on its opposite sides between two of them, forming a pile or numbers of them one upon another, thereby practically forming a box when clamped together, and providing openings or chamfers on the inner edges of the frames in such a manner that when the pile is placed over an opening in an air-flue the hot or dry air may pass alternately from the under to the upper sides of the sheets, and thence out at the top, as will hereinafter appear.

In the drawings, Figure 1 is a vertical section of the pile and in the direction of the length of the air-flue. Fig. 2 is a vertical section at a right angle to Fig. 1, or across the air-flue. Figs. 3 and 4 are also sections of a modified form of the chamfers or openings for the passage of the air.

The pile of frames is preferably made by having a bottom and top plate of metal, A and B, formed with projections or lugs, through which the clamping-rods C extend to hold the frames in position by the binding-screws D. These plates have large holes in their centers at E—the one at the bottom to admit the air from the flue F, and the other at the top to permit the air to escape. The bottom frame, G, is placed on the bottom plate, and it has narrow slits cut in its inner edge at H, which are enlarged as they extend back in the frame to form air-passages back of the edge of the sheet and to connect with corresponding holes in the frame K above; but the opposite inner edge of the lower frame has a less or greater number of holes or slits to correspond with the same number in the frame above, for the purpose of breaking joints or passages between the frames on opposite sides, so that the air is

forced to pass around the edge of the sheet on one side only, and then up over the edge of the next sheet above it and across to the opposite edge, and then over the next sheet, and so alternately under and over each sheet until it reaches the top plate, where it escapes at the hole in the center plate. The arrows in Fig. 2 show the direction of the movement of the air back and forth between and over the sheets.

In the modification represented at Figs. 3 and 4, short chamfers, as at L, are made in the inner edge of the frames, to permit the passage of the air over and around the edges of the sheets; but the other form of notches or slits is preferable, as less of the front edge of the frame requires to be cut away, and hence a greater amount of bearing or clamping surface of the frame is thereby furnished. The advantages of such a construction of the frames are, that they may be clamped together in large numbers and set over the holes in the air-flue, which is provided with a cut-off slide, M, at each hole to stop off the air when not required, and the air can be forced to any degree of pressure without danger of injuring the sheets, as the currents between the sheets balance the pressure, and as the air escapes from the top hole its degree of dryness may be easily ascertained by holding a mirror over it, so that each pile may be examined without disturbing the others, and its degree of dryness easily determined.

I am aware that sheets of various kinds of substances have been dried by being fastened upon and between frames and exposing them to currents of dry air when the air is caused to pass across the sheets in one direction; but I am not aware of any arrangement for drying sheets stretched or held between frames having openings on the inner edges of the frames for conducting the air to and fro across the sheets from the lower to the top one, thereby practically making a flue or drying-chamber of the pile of frames, as hereinbefore set forth.

I therefore claim—

1. In an apparatus for drying sheets of paper, gelatine, zylonite, and other materials, and in combination therewith, two or more frames, between which the sheets are held at their edges, and said frames having at their inner

opposite edges slits or chamfers for the passage of air alternately, substantially as described.

2. In an apparatus for drying sheets of paper, gelatine, zylonite, and other materials, and in combination with a series or pile of frames for holding the sheets to be dried at their edges, an air-flue under the bottom of the pile, and passages or slits in the inner opposite
10 edges of the frame for conducting air to and fro across the sheets, all constructed and arranged substantially as described.

3. The combination of a series or pile of

frames for holding sheets to be dried, clamped between plates by binding-screws, and with 15 holes in the bottom and top plates to allow the passage of the drying agent to and fro over the sheets, as hereinbefore set forth.

In witness whereof I have hereunto subscribed my name and affixed my seal in the 20 presence of two subscribing witnesses.

JARVIS B. EDSON. [L. S.]

Witnesses:

EUGENE N. ELIOT,

HERMAN T. C. KRAUS.