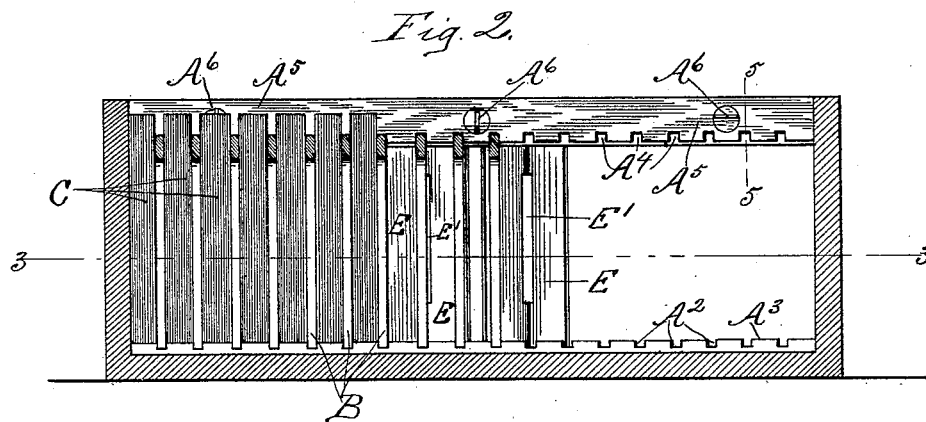
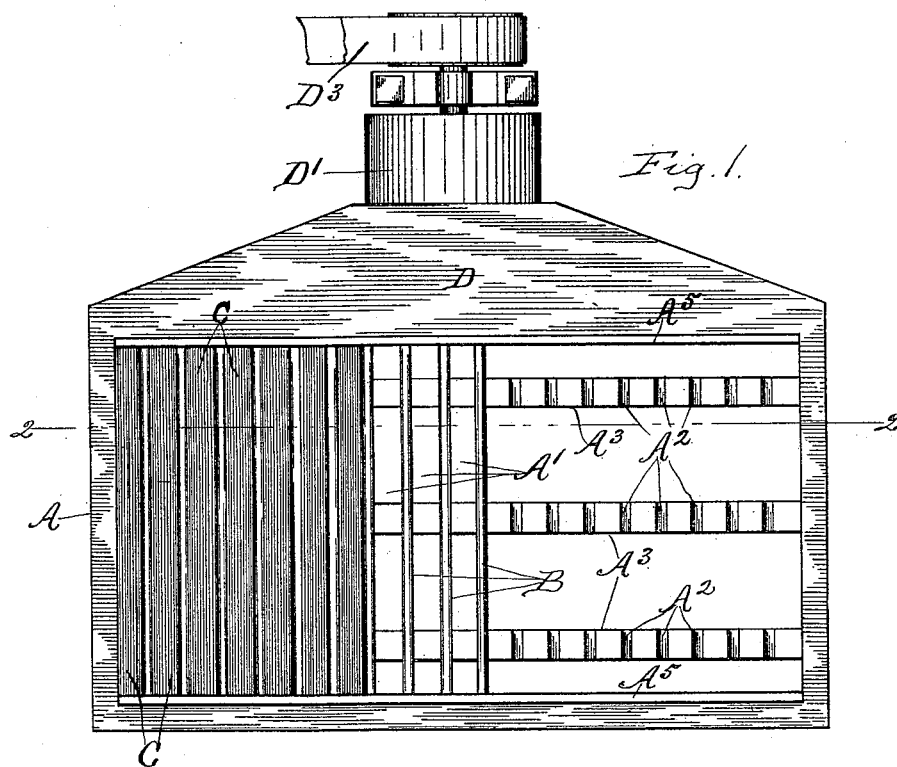


S. E. BAKER.
APPARATUS FOR DRYING PAPER BOARD.

No. 493,467.

Patented Mar. 14, 1893.



Witnesses:
Frank C. Curtis
A. Delaney

Inventor:
Stewart E. Baker
by Geo. A. Mowbray
Atty.

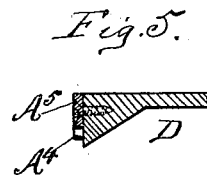
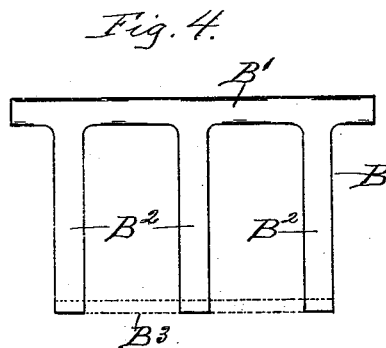
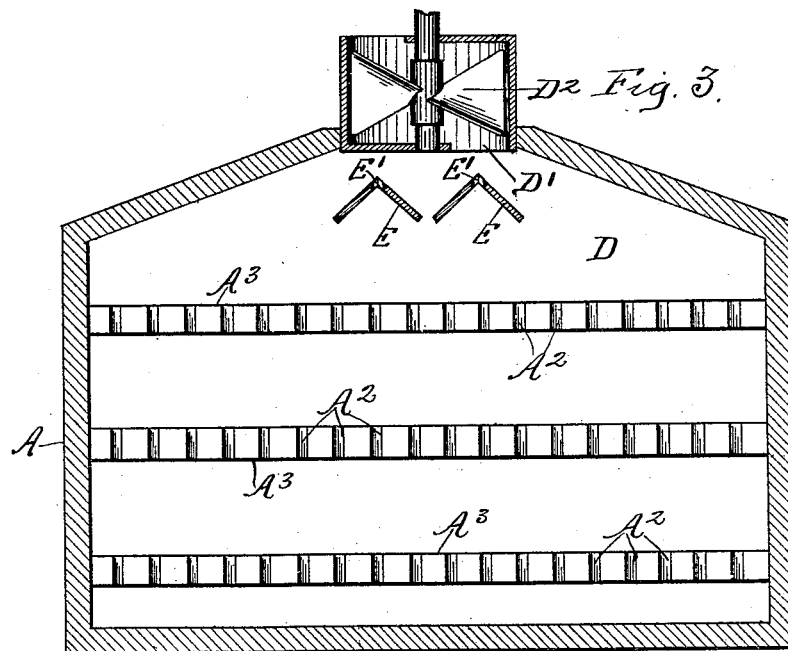
(No Model.)

2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

STEWART E. BAKER, OF TROY, NEW YORK.

APPARATUS FOR DRYING PAPER-BOARD.

SPECIFICATION forming part of Letters Patent No. 493,467, dated March 14, 1893.

Application filed April 12, 1892. Serial No. 428,765. (No model.)

To all whom it may concern:

Be it known that I, STEWART E. BAKER, a citizen of the United States, residing at Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Apparatus for Drying Paper Boards, of which the following is a specification.

My invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a top plan view of my improved apparatus for drying sheets of pasted paper board. Fig. 2 is a vertical cross-section of the same, taken on the broken line, 2—2, in Fig. 1. Fig. 3 is a horizontal section of the same taken on the broken line, 3—3, in Fig. 2, the pasted sheets and supporting partitions being removed. Fig. 4 is a side elevation of one of the partition-frames detached. Fig. 5 is a section taken on the broken line, 5—5 in Fig. 2.

My improved apparatus comprises an inclosure or box open to the atmosphere on one side, containing a partitioned drying compartment adapted to receive and support on edge, a plurality of sheets of pasted paper board, or sheets of other material, to be dried; and an air-chamber. The drying compartment opens exteriorly to the atmosphere on one side and opens on another side to the air-chamber. The air-chamber is also provided with an inlet opening for the introduction of an air-blast, and deflectors for directing the blast of air to the various partitions.

A— is the box which is open on its upper side, the opening comprising the whole upper side of the drying compartment. This compartment is divided into smaller compartments, A', by the detachable partitions or frames, B. These frames are conveniently formed of a cross-bar, B', provided with three upright supports or legs, B², as shown in Fig. 4. The lower ends of the legs are inserted

in the cross-grooves, A², formed in the cleats, A³, secured to the bottom of the case. The upper edge of the several cross-bars is adapted to enter and fit the cross-grooves, A⁴, in the cleats, A⁵, secured to the opposite side-walls of the box. The partition-frames are first placed in position and then secured by fastening one or both of the cleats, A⁵, to the side-wall of the box, as by screws, A⁶, with the frame cross-bars in their respective grooves. One of the cleats, A⁵, may be permanently fixed to a side-wall of the box, and the other detachably secured, as by the screws, whereby the partition frames can be changed or some of them removed to vary the size of the partitioned compartments, as desired.

In Figs. 1 and 2, I have shown some of the compartments, A', filled with paste-board sheets, C, standing vertically on one edge, some of the compartments empty, and some of the partition frames removed.

D— is the air-chamber, and D', the inlet opening or conduit leading from the fan or blower D², which may be of any known form or type.

D³— is a portion of the belt employed to drive the fan.

The air-chamber connects directly with one end of the compartments, A', and is provided with one or more deflectors consisting of an upright frame, E, wedge-shaped on the side facing the inlet-opening leading from the fan. These deflectors are preferably made of two boards arranged in the form of a V-shaped trough with a narrow slot, E', at the apex to admit part of the blast to the compartments just back of the deflector. Any desired number of deflectors may be employed. I have obtained good results from the use of two arranged as shown in Fig. 3. The roof or upper side of the air-chamber is preferably inclined downward on the side contiguous to the drying compartment, as shown in Fig. 5, to form a deflector for directing the current of air downward against the floor of the drying compartment at an oblique angle. When so directed, the air-current is reflected from the floor of against the vertical side wall of the drying compartment, and thence passes out of the compartment to the atmosphere, the reflected current passing in a backward

direction above the roof of the air-chamber. The air is thus made to traverse an angular and elongated path through the drying compartment, and passes between the pasteboard sheets in several directions, insuring thorough contact of the air with the damp surface of each pasteboard. Should two sheets have their contiguous edges adjacent to the air-chamber in contact so as to prevent the air from entering between them, the current of air, when reflected from the floor would pass between the bottom edges of such sheets, or when reflected from the closed side of the drying compartment, would pass between the opposite side edges of the sheets, and approaching from several different directions would thoroughly dry the same. The pasted boards or sheets are inserted in the small compartments with one edge of the sheets on the bottom, and air forced into the air-chamber, whence it passes into the small compartments, in between the several sheets in the compartments, against the opposite vertical wall of the box, and out at the top-opening, quickly absorbing the moisture from the damp sheets of pasteboard.

In the manufacture of paste-board boxes for shirts, collars and cuffs, as well as other articles, quite large sheets of board are frequently employed, which are covered or lined with paper pasted thereon to give the boxes a better finish. Heretofore the sheets of pasteboard were lined and spread out on the floor or hung up to dry, necessitating the use of large rooms in carrying on such branch of the business. When so treated the sheets would warp and twist, making it necessary to press them in presses before they were ready to be used. They come from my improved dry-box in condition suitable for immediate use.

As usually only one side of the pasteboard is lined, the sheet is more or less curved or

warped when inserted in the drying compartment in a damp condition; but as I place as many sheets in each small compartment as can be contained without crowding, the warping is limited by the confinement, while the sheets separate sufficiently to permit the entrance of the air between them. To sufficiently confine the sheets in their compartments without crowding them tightly together and thereby preventing their contact with the air-current, it is necessary that the skeleton partitions forming the compartments should be firmly secured at determined intervals, as by the grooved cleats secured to the walls of the box as before explained.

I do not wish to limit the exterior opening in the box to the upper side, as it may be the bottom side or the side opposite the air-chamber.

When desired the lower ends of the legs or supports B², of the partition frames may be united by a cleat or cross-bar as indicated by dotted lines B³, in Fig. 4.

What I claim as new, and desire to secure by Letters Patent, is—

In an apparatus for drying paper-boards, the combination with a partitioned drying compartment closed on the bottom and a contiguous side and open on the top and other side respectively to the atmosphere and an air-chamber, of an air-chamber having a downwardly inclined roof adapted to direct air from such chamber downwardly against the bottom of the drying compartment at an oblique angle thereto, and means for forcing air into the air chamber, substantially as described.

In testimony whereof I have hereunto set my hand this 24th day of March, 1892.

STEWART E. BAKER.

Witnesses:

FRANK C. CURTIS,
A. E. DELANEY.