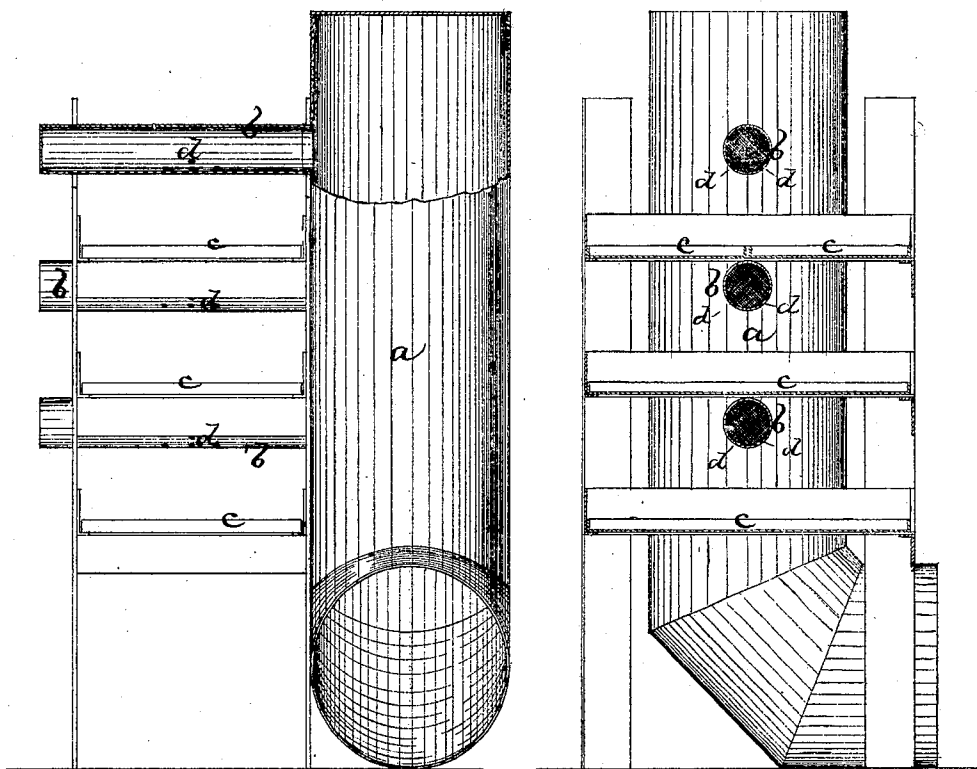


John J. Manning.
Imp'd Drying Apparatus.

117905

PATENTED AUG 8 1871



Witnesses.
M. W. Frothingham.
P. B. Liddell.

John J. Manning.
By his Atty.
Crosby & Gould.

UNITED STATES PATENT OFFICE.

JOHN J. MANNING, OF ROCKPORT, ASSIGNOR TO HIMSELF, WILLIAM N. MANNING AND F. TARR, JR., OF SAME PLACE, AND F. W. HOMANS, AND FRIEND & SMITH, OF GLOUCESTER, MASSACHUSETTS.

IMPROVEMENT IN DRYING GLUE.

Specification forming part of Letters Patent No. 117,905, dated August 8, 1871.

To all whom it may concern:

Be it known that I, JOHN J. MANNING, of Rockport, in the county of Essex and State of Massachusetts, have invented an Improved Drying Apparatus; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention, sufficient to enable those skilled in the art to practice it.

My invention relates particularly to the construction of an apparatus to be used in the manufacture of glue for drying the glue or evaporating the moisture therefrom, although the invention is applicable to other drying or evaporating purposes.

The ordinary method of drying glue is to expose the semi-liquid glue in pans to the action of the atmosphere. During damp and muggy weather glue will not dry by such exposure, and in warm weather it frequently spoils before there is sufficient dry weather to cure it.

In my invention I make use of an air-blast, (preferably hot or warm air,) and by means of suitably-arranged pans and air-tubes this air is projected or blown with force down upon the pasty glue in the pans and quickly evaporates the moisture therefrom. My invention consists in combining, with an upright cylinder or air-chamber, supplied with air by a suitable pressure-blower, tubular arms extending horizontally from said cylinder, and over pans into which the liquid glue-stock is run, each tube being provided with air-outlet orifices, through which the air is impelled, the tubes and pans being so arranged that the currents of air impinge against the glue and quickly evaporate the moisture therefrom. It is in this construction of a drying apparatus that the invention consists, or in a main air-cylinder provided by any suitable blower or blast apparatus with air under pressure, and having horizontal tubes or hollow arms, into which the air is driven, and from which, escaping through suitable orifices, it is impelled against the material placed in pans or on racks beneath the tubes.

The drawing represents an apparatus embodying the invention.

a denotes the main air-cylinder provided with air under pressure from a suitable blower, the head of the cylinder being tight. *bb* denote the

series of hollow arms projecting from and opening out of the main cylinder. *cc* denote series of pans, preferably arranged in pairs, one pair under each tube. In the bottom of each tube are air-orifices *d*, and these are so constructed or arranged that the currents of air projected from each tube are thrown in angular directions, so as to impinge upon a large area of the material placed in the tubes to be dried.

In practice I find that in treating liquid glue spread in the pans three thirty-seconds of an inch in depth I can reduce it two-thirds or to one thirty-second of an inch, and to dry condition in about four hours; whereas, by simple exposure to the atmosphere, as in the common method of treating the glue, it would take from thirty-six to seventy-two hours, and in much of the weather it could not be dried at all and would spoil in the pans.

In treating glue I prefer to use a main air-tube of a foot in diameter, with air-tubes *b b* three inches in diameter and twelve feet long, placing beneath each tube a series of pans, consisting of two rows of twelve pans each, each pan being one foot wide and fifteen inches long, and there being three or any other suitable number of tubes *b*, according to the height of the room and other circumstances. But this arrangement may, of course, be varied, as circumstances may require.

I am aware that it is not new in drying glue to subject it to the action of blasts or currents of air impelled against it; and I make no claim to such treatment, but confine myself to an apparatus substantially like that shown and described.

I claim—

A drying apparatus, consisting of the main air-tube *a*, supplied with air under pressure by any suitable blast apparatus, the horizontal tubes *b* extending from and opening out of said cylinder, and having air-outlet orifices *c* through which the air is impelled upon the material placed in pans under the tubes, all substantially as shown and described.

Executed March 11, 1871.

JOHN J. MANNING.

Witnesses:

AZOR KNOWLTON, JR.,
WM. HASKINS.