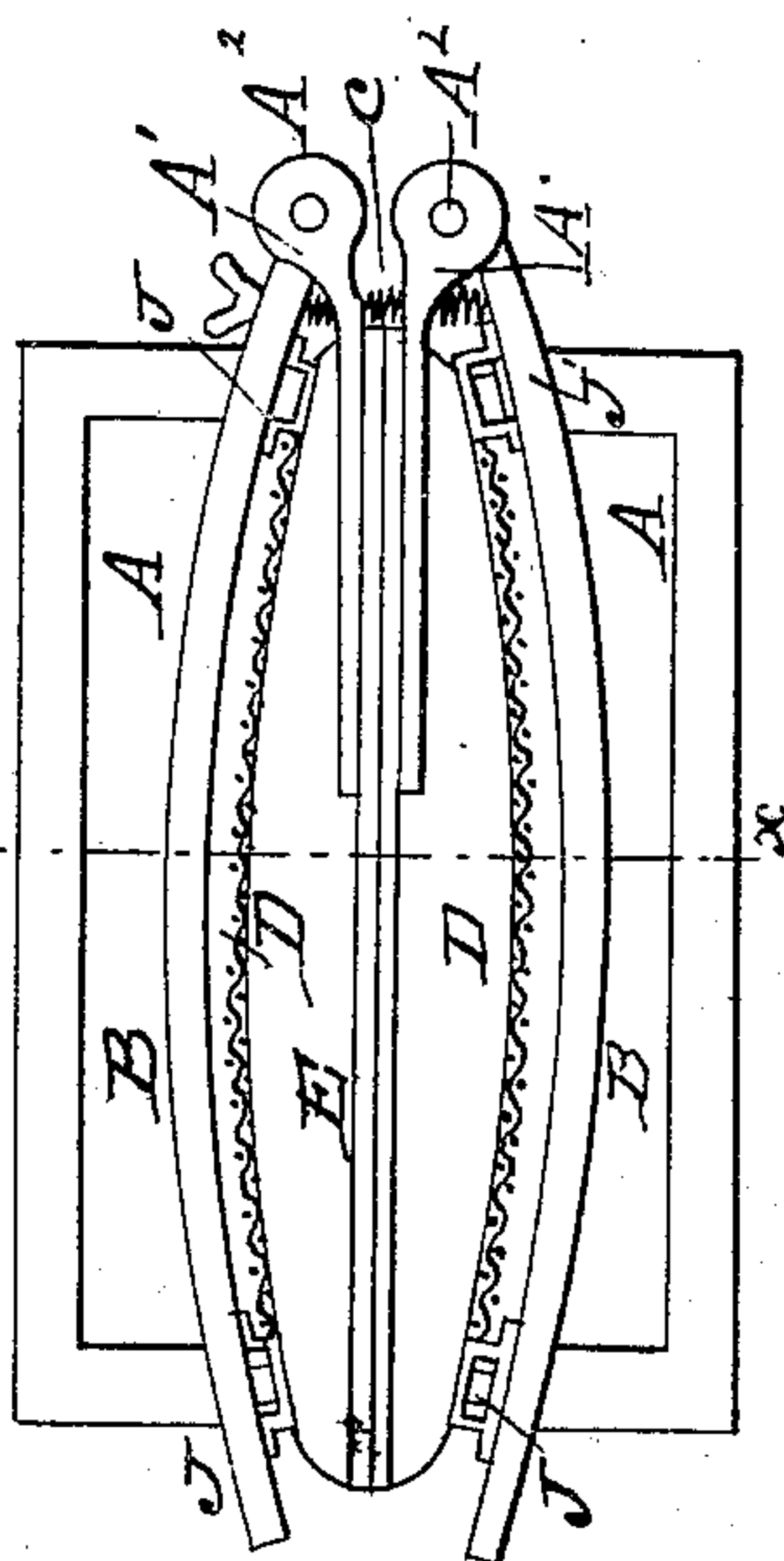


Apparatus for Drying Straw Boards.

Patented Oct. 3, 1865.



INVENTOR
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN APPARATUS FOR DRYING STRAW-BOARDS.

Specification forming part of Letters Patent No. 50,280, dated October 3, 1865.

To all whom it may concern:

Be it known that I, WILLIAM H. SEVERSON, of Cohoes, in the county of Albany and State of New York, have invented a new and useful Improvement in Apparatus for Drying Straw-Boards; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of an apparatus made according to my invention. Fig. 2 is an elevation seen from the left-hand end of Fig. 1. Fig. 3 is an elevation of a vertical section taken on the transverse line *x* of Fig. 4. Fig. 4 is a plan or top view.

Similar letters of reference indicate like parts.

This invention has for its object to dry straw-board and other articles of similar character.

Straw-board has hitherto been dried by passing it in its green state around heated cylinders by means of strong canvas bands which are made partly to encompass the cylinders.

My invention consists in the use of stationary steam-chests, against whose surfaces the articles to be dried are held by means of hinged pressers, consisting of frames whose bodies are composed of cloth or other suitable material, which shall be of an open texture to admit the passage of vapor through it.

In summer straw-board is usually dried in the open air, but in winter some mills use artificial means for drying their products. One kind of drying apparatus so used consists of a series of hollow cylinders arranged in the same horizontal plane, rotating on hollow journals and heated by steam or in some other way. A strong canvas band is passed beneath each cylinder, being returned to the next cylinder in the series over wooden stretcher-rollers. When the band has passed the last cylinder in the series it returns beneath them all to the front of the machine. There are many disadvantages attending this mode of drying straw-board. One is that if the band runs off the rollers or cylinder it becomes torn and soiled, and since a large-sized band costs about one hundred dollars, such accidents, which frequently happen, entail a heavy loss on the mill. Another is, that the band, which needs to be very stout, is too close to permit free evaporation from the straw-board, and therefore the board

cannot be dried as rapidly as if the texture were more open. There are other disadvantages belonging to such drying-machines, especially when they are contrasted with my invention—such as their great relative cost, the large space they occupy in a mill, the power required to drive them, the great number of wearing parts which require frequent repairs, the number of stuffing-boxes required, and the large waste of steam, and also the frequency with which the boards being dried get torn to pieces by running off the cylinders.

A designates a frame which supports my apparatus.

E is a steam-vessel with flat or curved sides, (according to the shape given to the pressers,) whose surfaces may be of the size of the sheets of board to be dried, or a little larger. Steam is admitted therein and discharged therefrom through pipes F, and the top and bottom of the vessel and its ends may be jacketed, if desired, in order to prevent the loss of heat and to make attendance thereon more convenient to the operatives by lessening the direct radiation of heat from those parts.

A' A' designate brackets which extend from the top and bottom of the steam-chest on one of its edges to form bearings for pressers B B, one of which is placed on each side of the steam-vessel. There are two pairs of these brackets or hinges, and they receive vertical rods A² A², to which are connected the hinges of the pressers B. The pressers B are made of skeleton frames whose height and breadth are nearly as great as the sides of the steam vessel or heater.

The letters D designate the sides of the pressers. In this example of my invention the sides are made of canvas of open texture; but they may be of wire-gauze, cloth, or any other porous or open material which will permit a free evaporation to take place through its body while it holds the straw-board or other substance or article to be dried up to the surface of the steam-heater E.

The canvas or other material can be attached to the frame of the pressers in any proper way, and in order to keep it distended I have in this example fastened it only to the upright pieces of the frames, which pieces are connected to the horizontal or string pieces by means of tenons on the former fitting into mortises J J' made in or formed upon the latter. The mortises J, the two upper ones only being

seen in the drawings, are long enough to permit the said tenons to move laterally therein, and in order to adjust them to the required positions in their mortises I employ wedges or keys I, which in this instance are made elastic, having the character of springs. By this means the upright pieces of the frames are crowded toward the left, (observing Fig. 1,) and the flexible sides D of the pressers made more taut. The frames of the pressers, moreover, are curved to the contour of the heater E, so that their flexible sides may embrace the curved sides of the heater. The pressers are made to vibrate on their hinges by means of foot-levers H G and rods G', one series for each presser, the levers H G being elbow-levers pivoted to the front of the platform A and connected to the lower front edges of the pressers by means of connecting-rods G'.

C C designate springs which are attached to the straps of the hinges of the pressers so as to draw the pressers toward the heater E after each operation of the levers H G.

In operating the apparatus the pressers are drawn away from the surfaces of the steam vessel or heater by means of the foot-levers H G, to allow the straw-board or other article to be dried to be put between the sides of the pressers and the heater. When this is done

the levers are released, and the pressers will be drawn toward the heater by the tension of the spring C, which may be adjusted to more or less tension by means of their thumb-screws. (See Fig. 4.)

It is not material whether the pressers be opened in the way described or by other suitable means, and the steam-pipes may enter and depart from the heater at other points than those here shown; also, instead of porous sides D, the pressers may have perforated sides without departing from the principle of my invention.

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

1. In driers for treating straw-board and other articles to be dried, the use of stationary drying-vessels, substantially like that shown at E, with hinged pressers whose sides are flexible and porous or open, substantially as above described.

2. The hinged pressers, composed of adjustable frames, and flexible porous sides D distended on said frames, constructed and operating substantially as above described.

WM. H. SEVERSON.

Witnesses:

HORACE FISHER,
H. D. FULLER.