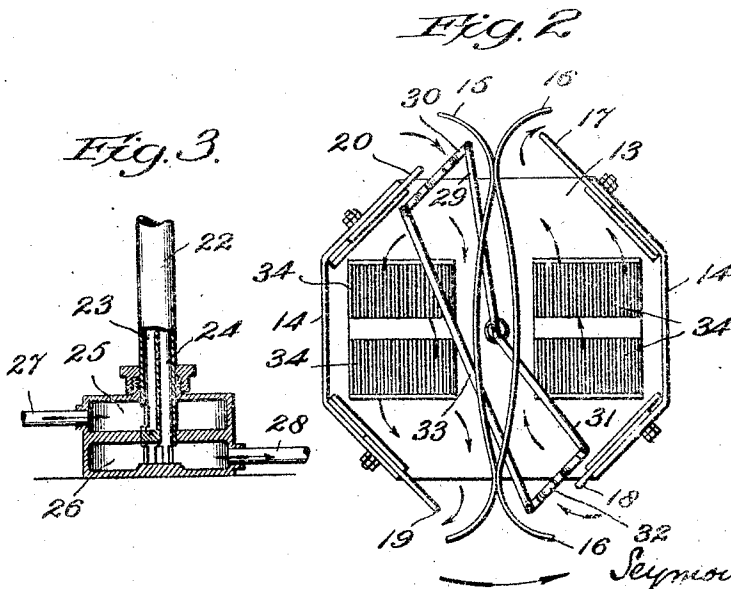
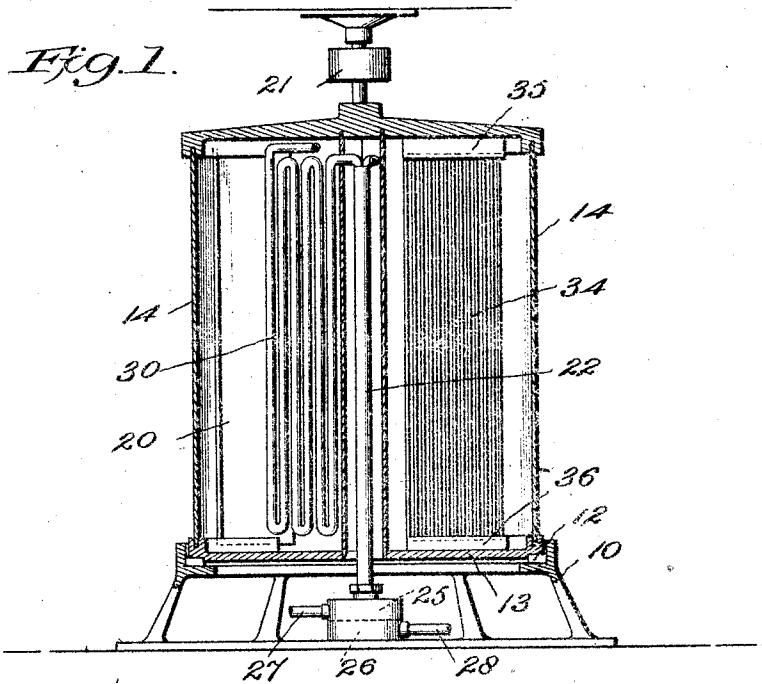


S. W. BONSALE.
 ROTARY DRIER.
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1,047,610.

Patented Dec. 17, 1912.



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UNITED STATES PATENT OFFICE.

SEYMOUR W. BONSALE, OF RYE, NEW YORK.

ROTARY DRIER.

1,047,610.

Specification of Letters Patent. Patented Dec. 17, 1912.

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To all whom it may concern:

Be it known that I, SEYMOUR W. BONSALE, a citizen of the United States, residing at Rye, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Rotary Driers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention has for its object, the provision of efficient means whereby various materials may be quickly dried, and particularly to means especially suited to the drying of lumber in various forms.

The invention is an improvement upon the general type of device set forth in my application for United States Patent for improvement in driers, filed November 17th, 1911, Serial No. 660,819.

In a preferred embodiment the invention is shown in the accompanying drawings, wherein—

Figure 1 shows a vertical sectional view of the device with boards in place on the right side, Fig. 2 is a plan of the same viewed from above after removal of the top of the machine, and Fig. 3 is a detailed sectional view, making clear the means for conveying and removing steam.

The particular form, shape and proportions shown in the drawings are not essential and are shown merely by way of illustration. It is also to be understood that it is not essential to my invention to employ steam or other heating means.

Upon a base 10 the principal chamber is mounted upon suitable rollers 12 or other non-frictional supports. The chamber is provided with a floor 13 and walls 14 and, in the particular form shown, is separated into two similar halves by a cross partition whose ends form scoops in both horizontal directions, which scoops extend beyond the limits of the chamber.

The preferred construction shown involves two suitable bent partitions 15 and 16 placed back to back and giving room for the introduction of the steam pipes hereinafter described. The outer vertical edges of these partitions are bent or curved so as to form scoops extending in both directions as viewed vertically. This is clear from Fig. 2.

The chamber is provided with openings on both sides just behind each bent or scoop-

shaped outer edge of the partitions 15 and 16. These openings are clearly shown in Fig. 2, being closed respectively by the sliding doors 17, 18, 19 and 20, whereby the extent of each opening may be accurately determined for the purpose hereinafter described.

Assuming now that the chamber is rotated, as for instance by the pulley 21 in the direction of the large arrow at the bottom of Fig. 2, it will be seen that the scoop-shaped edge of the partition 16, which is opposite the door 18, will act to force inward a strong current of air indicated by the small arrows, while the opposite scoop-shaped edge of the same partition, that is to say the one opposite the door 17, will by its movement create continually a vacuum in front of itself whereby the movement of air is further accelerated. By opening the door 18 to a greater extent than the door 17, the air within may be compressed to such an extent, within limits, as may be desired, and this operation will be found useful in the drying of lumber and of other articles wherein the moisture is more or less deeply seated. It is obvious that the scoop-shaped vertical edges of the partition 15 will have the same effect as that of the partition 16, save that the air will be forced in through the opening opposite the door 20 and will leave the device opposite the door 19, as indicated by the small arrows. Where quick drying is desired or where the air is apt to be moist, it will be found well to use a heating system of some kind in connection with this device and for this purpose I have shown a steam heating system of peculiar construction. The vertical pipe 22 contains two compartments 23 and 24 communicating permanently with the chambers 25 and 26 respectively, within which the entire pipe 22 revolves with the drying chamber. Steam is introduced into the chamber 25 by the pipe 27 and passes out of the chamber 26 through the pipe 28. All this is shown in Fig. 3. One of the compartments 23 has an extension 29 which leads to a coil 30, in one of the entrance openings while the other compartment 24 has an extension 31 leading to a similar coil 32 in the other entrance opening, the opposite end of which coil is connected by the pipe 33, with one end of the coil 30, as shown in Fig. 2. It is obvious that by this means a circulation of steam is produced through the apparatus, whereby

the air is heated and caused to become a more efficient drying agent.

The material to be dried may be secured in the path of the current of air produced in any appropriate manner and as an example of this, I have shown the boards 34 placed upright in the two sides of the revolving chamber and held by suitable racks 35 and 36 at the top and bottom of the device respectively.

It will be seen that my entire device is comprised of two similar units either one of which embodies my particular invention. The use of two of such units in the manner shown is advisable in order to produce a perfect balance in the apparatus for obvious reasons.

Various changes may be made in this device without departing from the invention and I do not limit myself to the details herein shown and described.

What I claim is—

1. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, said chamber having an inlet opening on one side having a scooping edge extending forward with reference to the direction of rotation and also having an exit opening whose edge projects outward on the forward side so as to create a partial vacuum during rotation, substantially as described.

2. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, said chamber having an inlet port opening in the direction of intended rotation and an outlet port opening away from the direction of rotation, substantially as described.

3. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, said chamber having an inlet port opening in the direction of intended rotation and having an outlet port opening away from the direction of rotation and an adjustable door in one of said ports, substantially as described.

4. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, said chamber having an inlet port opening in the direction of intended rotation and an adjustable door therefor, and having an outlet port opening away from the direction of rotation and an adjustable door therefor, substantially as described.

5. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, having an outlet and an inlet opening, and a wall extending from outlet to inlet, said wall being extended to form a scoop open in the direction of intended rotation near the inlet opening and to form a scoop open away from the direction of rota-

tion near the outlet opening, substantially as described.

6. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, having sliding doors on opposite sides, and a wall extending from door to door and having scoop-shaped outer edges both of which are inclined toward their respective door openings, substantially as described.

7. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, said chamber having openings at opposite sides, and a scoop inclined toward each opening, substantially as described.

8. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, said chamber having openings at opposite sides, a scoop inclined toward each opening, and heating means mounted within said chamber and located in the intended path of the entering air current, substantially as described.

9. A rotary drier comprising a suitable chamber mounted so as to be capable of rotation, said chamber having openings at opposite sides, a scoop inclined toward each opening, heating coils near each intended inlet opening and means entering said chamber near the center thereof for supplying a suitable heating medium to and withdrawing it from said coils, substantially as described.

10. A balanced rotary drier comprising a revoluble chamber of symmetrical cross section having oppositely placed openings, and a cross partition extending from one opening to another and shaped to form oppositely inclined scoops at both of said openings, substantially as described.

11. A balanced rotary drier comprising a revoluble chamber of symmetrical cross section having oppositely placed openings, a cross partition extending from one opening to another and shaped to form oppositely inclined scoops at both of said openings, and a separate adjustable door opposite and near to each of said scoops, substantially as described.

12. A balanced rotary drier comprising a revoluble chamber of symmetrical cross section having oppositely placed openings, and two cross partitions extending from one opening to another placed back to back, said partitions being inclined away from each other at their extreme edges to form scoops, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

SEYMOUR W. BONSALL.

Witnesses:

H. GREIFF,
EDW. HADCOCK