

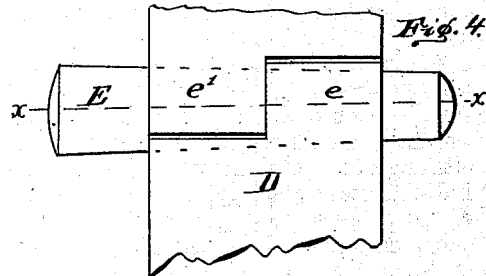
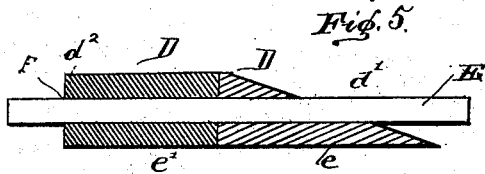
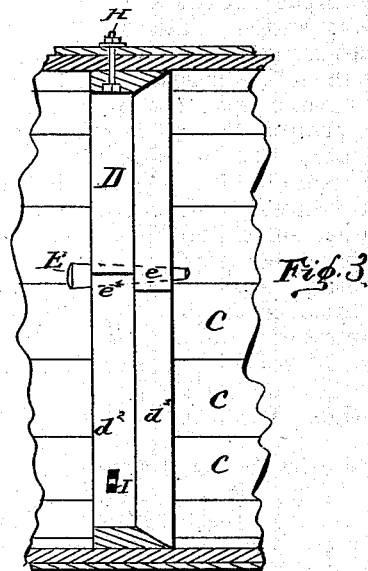
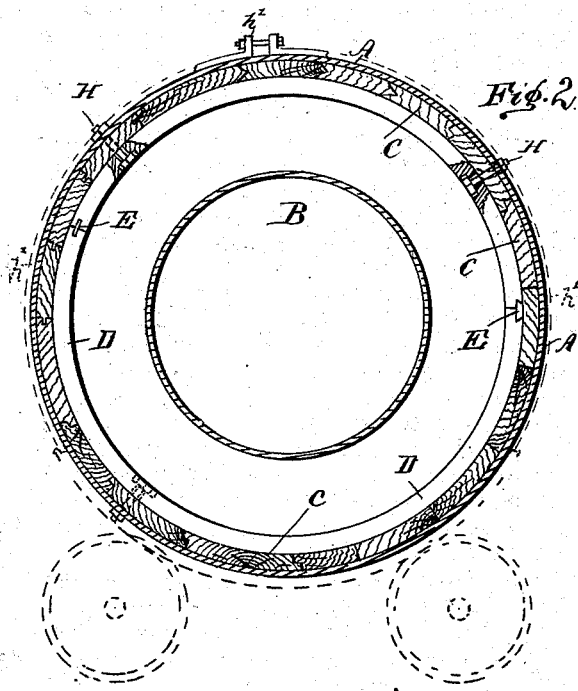
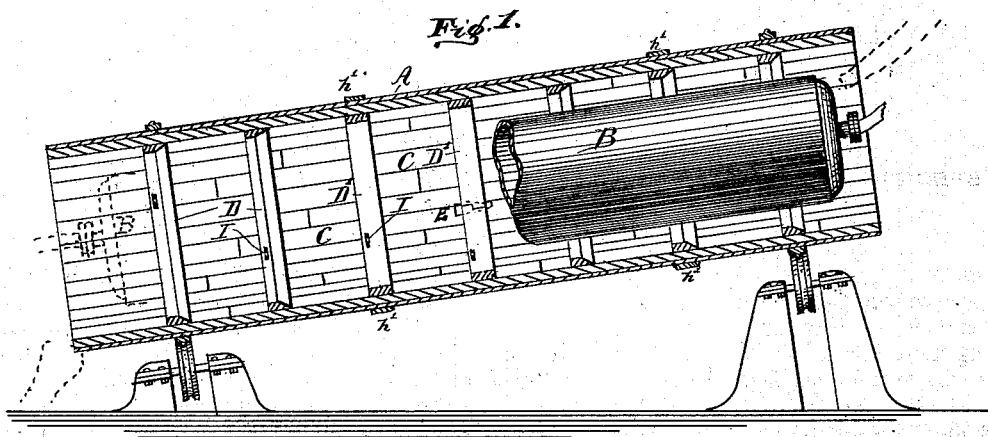
(No Model.)

C. T. BARTLETT.

SALT DRIER.

No. 384,953.

Patented June 26, 1888.



Witnesses,
W. H. Brown.
Frank. Drown.

Inventor,
C. Talleyrand Bartlett.

By his Attorney,
Wallace A. Bartlett.

UNITED STATES PATENT OFFICE.

C. TALLEYRAND BARTLETT, OF WARSAW, NEW YORK.

SALT-DRIER.

SPECIFICATION forming part of Letters Patent No. 384,953, dated June 26, 1888.

Application filed April 11, 1887. Serial No. 234,375. (No model.)

To all whom it may concern:

Be it known that I, C. TALLEYRAND BARTLETT, residing at Warsaw, in the county of Wyoming and State of New York, have invented certain new and useful Improvements in Salt-Driers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to driers especially intended for use in drying salt.

The invention consists in certain improvements in the construction of the wooden lining of the metallic shell of a drying-cylinder, its combination with the shell, and the mechanism for retaining it in position in the shell.

In the drawings, Figure 1 is a longitudinal central section of a salt-drier, the steam-cylinder being shown partly in elevation and part being broken away. Fig. 2 is a cross section of the same on a larger scale. Fig. 3 is an interior view of a broken piece of the cylinder, lining, and retaining-hoop. Fig. 4 is an elevation of a joint of the hoop and its expanding-wedge. Fig. 5 is a section on line *x x*, Fig. 4.

A indicates the usual metallic cylinder used in salt-driers. This cylinder is mounted so as to stand in an inclined position, and is provided with mechanism for rotation, as is usual in this class of devices, and with supply and delivery chutes or spouts, in a manner well known in the art.

B is the interior heating-drum, which is supplied with steam or hot air. This drum is preferably composed of or coated with some metal which is but little affected by salt or brine, although the drum may be of iron.

C C indicate staves of wood, which may be tongued and grooved at their edges or not, as found most convenient. These staves serve to cover the entire inner surface of the cylinder A.

D D, &c., indicate wooden hoops, which are expanded against the inner face of the staves C, which form the lining of the cylinder, in manner hereinafter explained. These hoops are by preference beveled to a thin edge on one side, (the upper side in the cylinder,) as at *d'*, so that they present but little obstruction to the movement of grains of salt passing from the upper to the lower end of the cylinder; but at the other edge, *d''*, the hoops have

square shoulders, so that grains passing down the inside of the cylinder will fall over this square edge. The hoops are of a single piece of wood bent round, or of a number of pieces either bent or sawed in segments of rings. The abutting ends of the hoop or hoop-section may be halved together, as at *e e'*, or joined in any other suitable way to hold the ends in line with each other. A slot, F, extends across the abutting or adjacent ends of the hoop-sections, so that a wedge, E, may be inserted and have a bearing for its inclined faces against the sides of the slot forming the adjacent ends of the hoop sections. It is preferable that the sides of the slot be beveled.

Now, when the wooden hoop is applied to the interior of the cylinder, as shown in Figs. 1, 2, and 3, the wedges E may be driven in, and the hoops may be expanded and brought to a firm bearing against the interior of the staves C, and the staves will be held firmly against the shell A of the cylinder. After the hoops have been expanded to place they may be more firmly secured by bolts H passing through elongated holes in the hoops and through the staves and shells. The holes I, through which the bolts pass, are slightly elongated, so that the hoop may be allowed to expand uniformly when the key E is driven in.

The hoops D serve as a basis to which conveyer flights or wings may be attached to lift the salt in the rotation of the cylinder. These flights, when employed, should be of wood.

It will be understood that the expansible hoop forms a strong and simple means for holding the staves against the cylinder, and that by contracting the hoops any one of the staves may be removed from the cylinder.

I am aware that it is not broadly new to line a metallic cylinder with wooden staves. I am not aware, however, that wooden staves have been held against the interior surface of a metallic cylinder by expansible rings prior to my invention.

The wooden lining prevents damage to salt by corrosion of the interior surface of the cylinder. The wooden lining is cheap and can be easily removed and replaced. The wooden rings form sufficient obstruction to the onward passage of the salt during the rotation of the cylinder to break up lumps which might otherwise form.

In some cases the exterior shell, A, may be composed of wood, paper, or similar material. In such case the exterior will be strengthened by hoops *h'*, Fig. 1, which hoops may be made compressible, in manner well known in the art. The outer and inner hoops in such case will preferably be so adjusted as to register with each other. Whether the shell be of wood or metal the lining will take the wear from it.

The expansible inner hoops, or some of them, may be made with both edges square, as shown at D' in Fig. 1. These hoops serve a good purpose as lifters in carrying up the salt as the cylinder rotates, owing in part to the inclined position of the cylinder. The more the salt is agitated and the different crystals separated the more thoroughly, speedily, and uniformly it will dry.

I am aware that a metallic cylinder has been lined with staves overlapping each other at their ends, similar to the shingles of a house. This is objectionable, since it requires a special construction of staves tapering from end to end; also, in that it affords a space between the staves and the metallic cylinder for the lodgment of salt unless all the cracks between the staves be covered, which is a difficult thing to do, and then fine salt is apt to sift between the staves. Further, as the staves are not supported by the walls of the shell, except for a very small part of their length, and as they leave spaces between the shell and lining, they are liable to warp and open the joints between them.

I claim—

1. A metallic drying-cylinder and mechanism to rotate the same, a lining for said cylinder consisting of wooden staves held in contact with the inner surface of said cylinder,

interior rings for retaining said staves in position, and a heating-drum passing longitudinally through the cylinder, all in combination substantially as described.

2. The combination, with a drying-cylinder, of a wooden lining consisting of staves and expansible hoops lying in contact with the interior surface of the staves, substantially as described.

3. The combination, with a metallic drying-cylinder, of a wooden lining consisting of staves lying in proximity to the inner surface of the cylinder, and divided wooden rings in contact with the staves, said rings expansible by means of a wedge between the proximate ends, substantially as described.

4. The combination, with the inner surface of a drying-cylinder having a wooden lining, of a series of expansible wooden rings having beveled edges, substantially as described.

5. The combination, with the metallic cylinder and staves, of a sectional wooden ring bearing against said staves, said ring having a slot through its proximate ends and a wedge lying in said slot, as set forth.

6. The combination, with the metallic drying-cylinder, the wooden lining for the same, and the interior hoops having expanding mechanism, substantially as described, and having elongated perforations therethrough, of bolts passing through the holes in the hoops, staves, and cylinder, substantially as described.

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

C. TALLEYRAND BARTLETT.

Witnesses:

C. L. MORRIS,
L. L. CHAFFEE.