

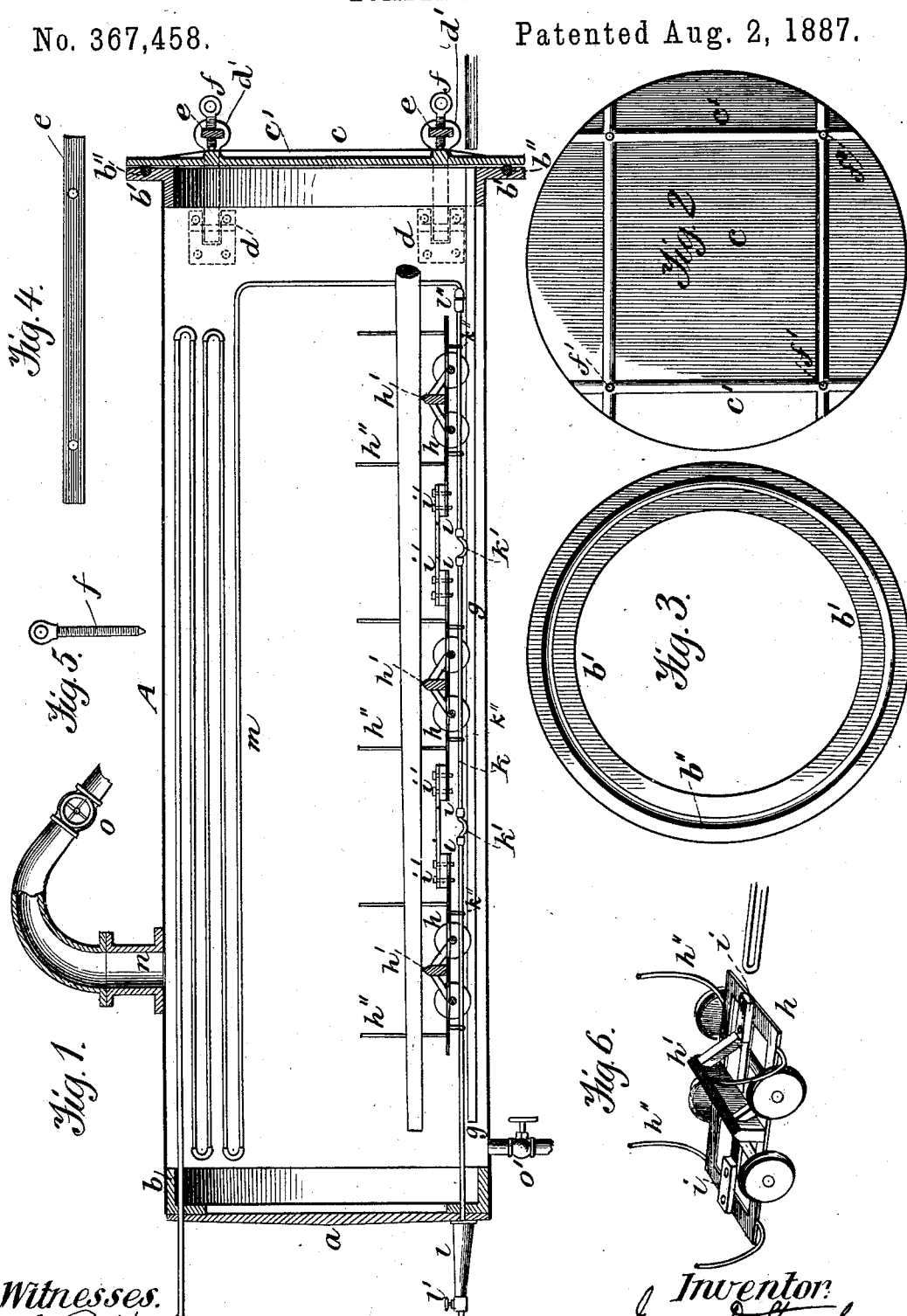
(No Model.)

J. D. STANLEY.

LUMBER DRIER.

No. 367,458.

Patented Aug. 2, 1887.



Witnesses.
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E. Hickinlooper,

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UNITED STATES PATENT OFFICE.

JAMES D. STANLEY, OF EASTOVER, SOUTH CAROLINA, ASSIGNOR TO
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LUMBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 367,458, dated August 2, 1887.

Application filed July 7, 1886. Serial No. 207,369. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. STANLEY, of Eastover, in the county of Richland and State of South Carolina, have invented certain new and useful Improvements in Apparatus for Drying Timber, Phosphate Rock, and other Materials, of which the following is a specification, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

In the accompanying drawings, Figure 1 is longitudinal section of my invention. Figs. 2, 3, 4, and 5 are details, hereinafter specified. Fig. 6 is a perspective view of a further detail.

Similar letters of reference indicate similar parts in the respective figures.

A is a plate-iron cylinder of any suitable dimensions for the purposes in view—say, six feet in diameter and thirty to sixty feet long. The cylinder A is provided at each end with a head, one head, *a*, being permanently secured to the cylinder by means of bolts which attach to the angle-iron *b*. The other head, *c*, is removably attached to the angle-iron *b'*. The angle-iron *b'* (see Fig. 3,) is provided with an annular groove, *b''*, (shown in Figs. 1 and 3,) which receives an asbestos or other packing, against which the flat or plain inner surface of the head *c* fits. The head *c* is provided at its outer side with strengthening-ribs *c'*. (Shown in Fig. 2.)

The cylinder A is provided with plates *d*, bolted to its exterior, in each of which plates is hinged a slotted eye, *d'*, through a pair of which eyes passes a bar, *e*. (Shown in Fig. 4.) The head *c* is forced up to the angle-iron *b'* by screw-eyebolts *f*, (shown in Figs. 1 and 5,) which eyebolts are tapped into the bars *e'* and enter conical depressions *f'*, formed in the head *c*. The cylinder is provided at its lower side with a track, *g*, upon which cars *h*, which support the timber or rock to be dried, run. The cars are preferably made short, so that several may be coupled together to occupy the entire length of the cylinder. The track communicates at the end of the cylinder having the removable head with a permanent track. The cars are constructed entirely of iron, and may be of any suitable make for the purposes in view, a car being

shown in perspective in Fig. 6. Preferably I construct each car with a central bearing-point, *h'*, and with standards *h''*, said standards being rounded to conform to the shape of the cylinder. Where the cars are to be used for phosphate-rock, their bodies will have to be modified in shape. The cars are attached together by couplings *i*, each coupling having at each end two bolts, *i'* *i''*, the coupling being slotted, so that where two cars are coupled together they are firmly held in line.

Each car is provided with a section of pipe, *k*, attached to the bottom of the car by hangers *k''*. These sections of pipe are adapted to be coupled together between the cars, as shown at *k'*. The section of pipe attached to the first car, or that nearest the back end of the cylinder, is extended beyond the front of the car and communicates with a permanent escape-pipe, *l*, secured to the head *a*, said pipe being reduced in diameter at its outer end and provided with a valve, *l'*. The pipe attached to the rear car, or that nearest the front end of the cylinder, is furnished with a union coupling, *l''*, by means of which a connection is made with a coil of steam-pipe, *m*, which leads to a coil within a furnace. At the upper part of the cylinder is an escape-aperture, *n*, which leads to a condenser, the condenser-pipe being provided with a cock, *o*. A delivery-valve is shown at the lower side of the cylinder by *o'*.

The operation is as follows: The cars having been coupled together in the manner described, and the timber, phosphate-rock, or other material placed upon the cars, they are run into the cylinder, and the head *c* is closed. The coil *m* having been coupled with the pipes *k* of the series of cars, and the outer section of the pipe *k* having been caused to enter the escape-pipe *l*, superheated steam is admitted to the coil and car-pipes and escapes at *l*. The interior of the cylinder is thus brought to a high degree of heat, and the work of drying the material placed upon the cars proceeds, the vapor escaping through the aperture *n* to the condensing-pipe. The drying having been completed, the head *c* is removed, the pipes are uncoupled, and the cars withdrawn.

Should it be desired to use the apparatus

for creosoting, oiling, or otherwise treating timber, the material to be used may be admitted through the aperture *n* and discharged through the valve *o'*.

- 5 The cylinder is made of sufficient strength, and, if necessary, braced to withstand the requisite internal pressure. The cylinder is mounted upon a solid brick foundation, and is a permanent structure in connection with the
10 permanent track.

- The advantages of attaching the steam-pipes to the cars instead of having them attached to the bottom of the cylinder are as follows: If the steam-pipes are attached to the bottom of
15 the cylinder, the water dripping from the timber or other material and accumulating on the bottom of the cylinder will cover the steam-pipes, cause a vapor to rise, and prevent the dry heat from coming in contact with the ma-
20 terial to be dried. At the same time the water will have a tendency to cool the pipes, and thus prolong the time necessary to effectually dry the timber or other material. Whereas, by attaching the steam-pipes to the cars di-
25 rectly under the material to be dried and some six or eight inches above the bottom of the

cylinder, a dry heat is brought in contact with the material to be dried and the operation is accomplished in much less time. Again, by withdrawing the heated steam-pipes from the
30 cylinder with the cars the cylinder will cool more rapidly, and, as the pipes will not be in the way, the cylinder can be more easily and quickly cleaned out and made ready for the next operation.

Having described my invention, I claim— 35

A cylinder having a track, steam-pipes, removable head, and escape-aperture, combined with cars, each car being provided with a section of steam-pipe adapted to be coupled with
40 the section on the adjacent car, the section on the rear car being also adapted to couple with the coil of pipe in the cylinder, and the section on the first car being extended beyond the front of the car and adapted to enter the es-
45 cape-aperture, substantially as set forth.

In testimony whereof I hereunto set my hand and seal.

JAMES D. STANLEY. [L. S.]

Witnesses:

GEO. H. HOWARD,
PHILIP MAURO.