

(No Model.)

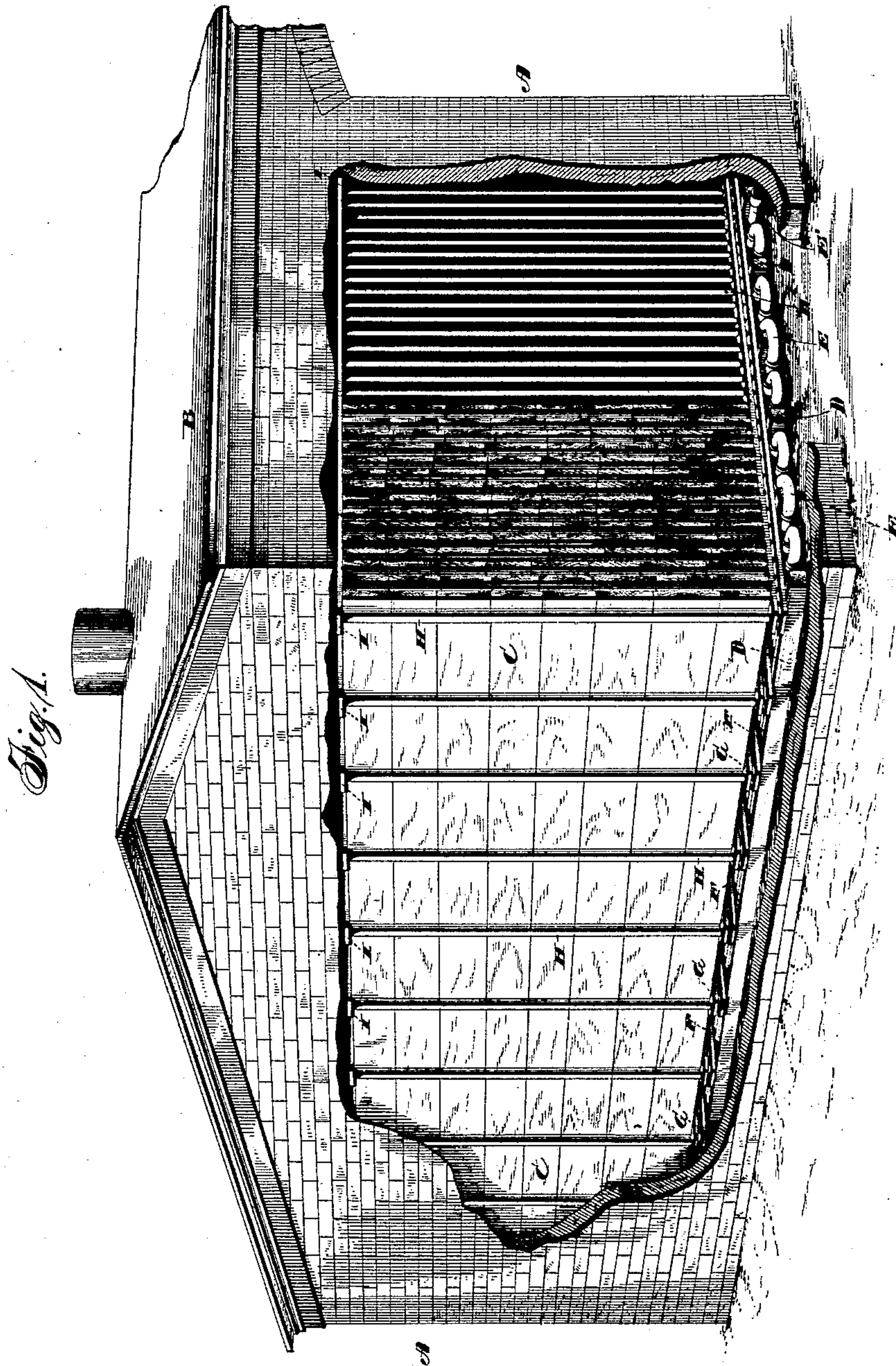
2 Sheets—Sheet 1.

A. M. SCHILLING.

LUMBER DRIER.

No. 327,322.

Patented Sept. 29, 1885.



Witnesses:
Chas. J. Williamson.
Jas. C. Hutchinson.

Inventor
A. M. Schilling
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Attorneys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

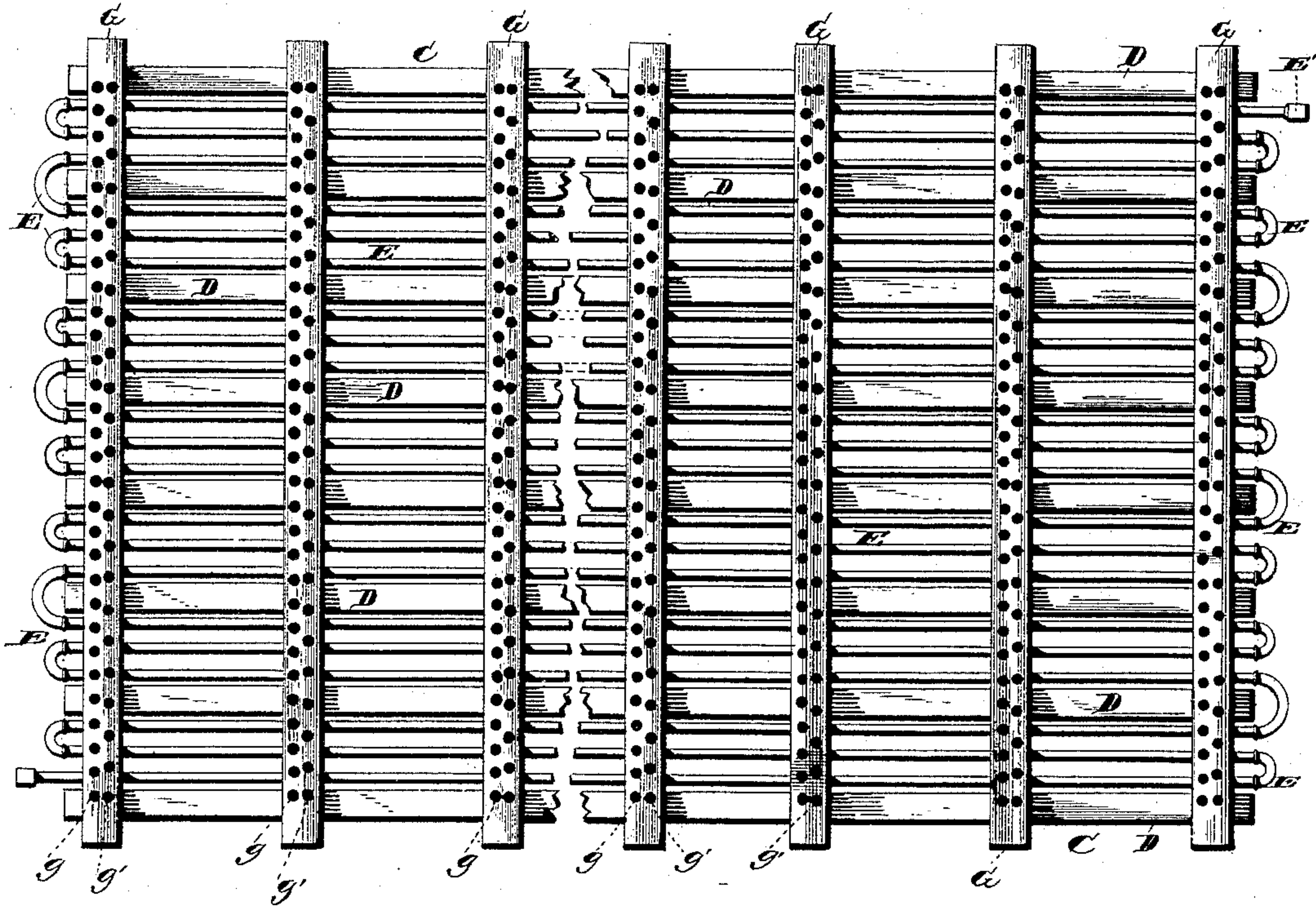


Fig. 3.

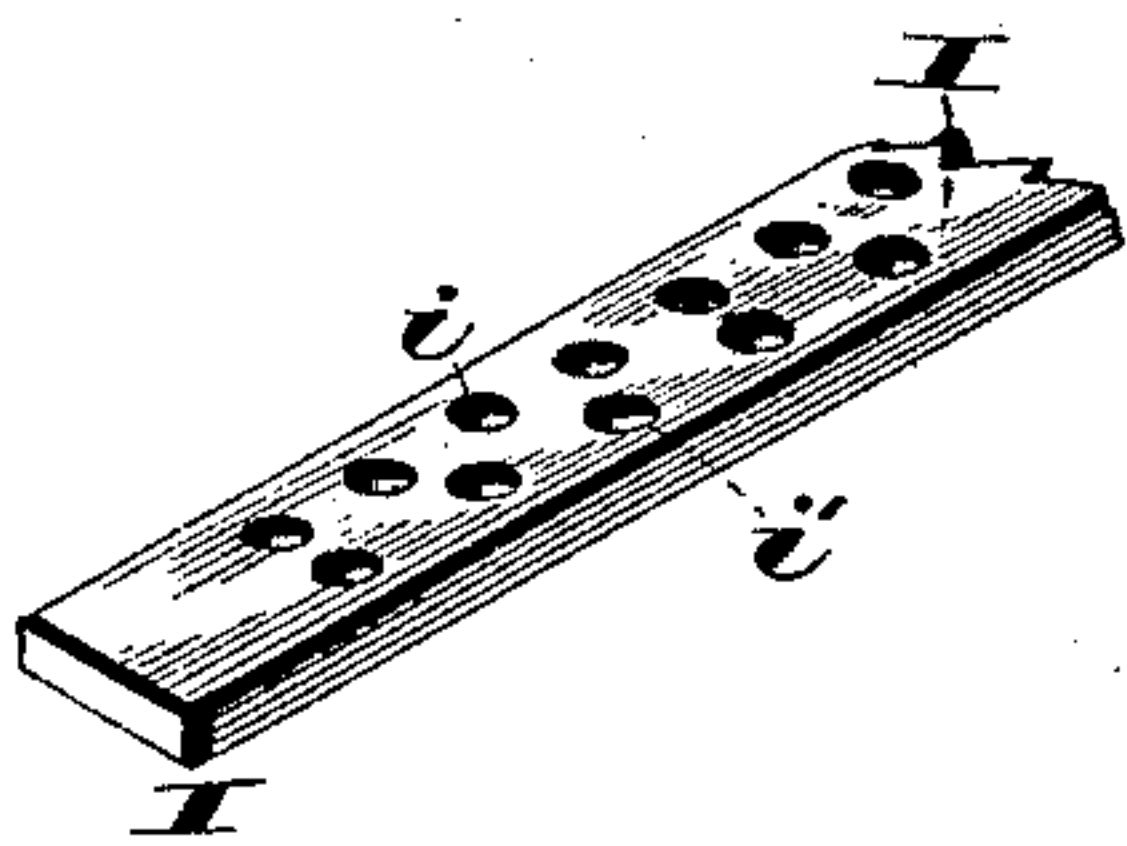
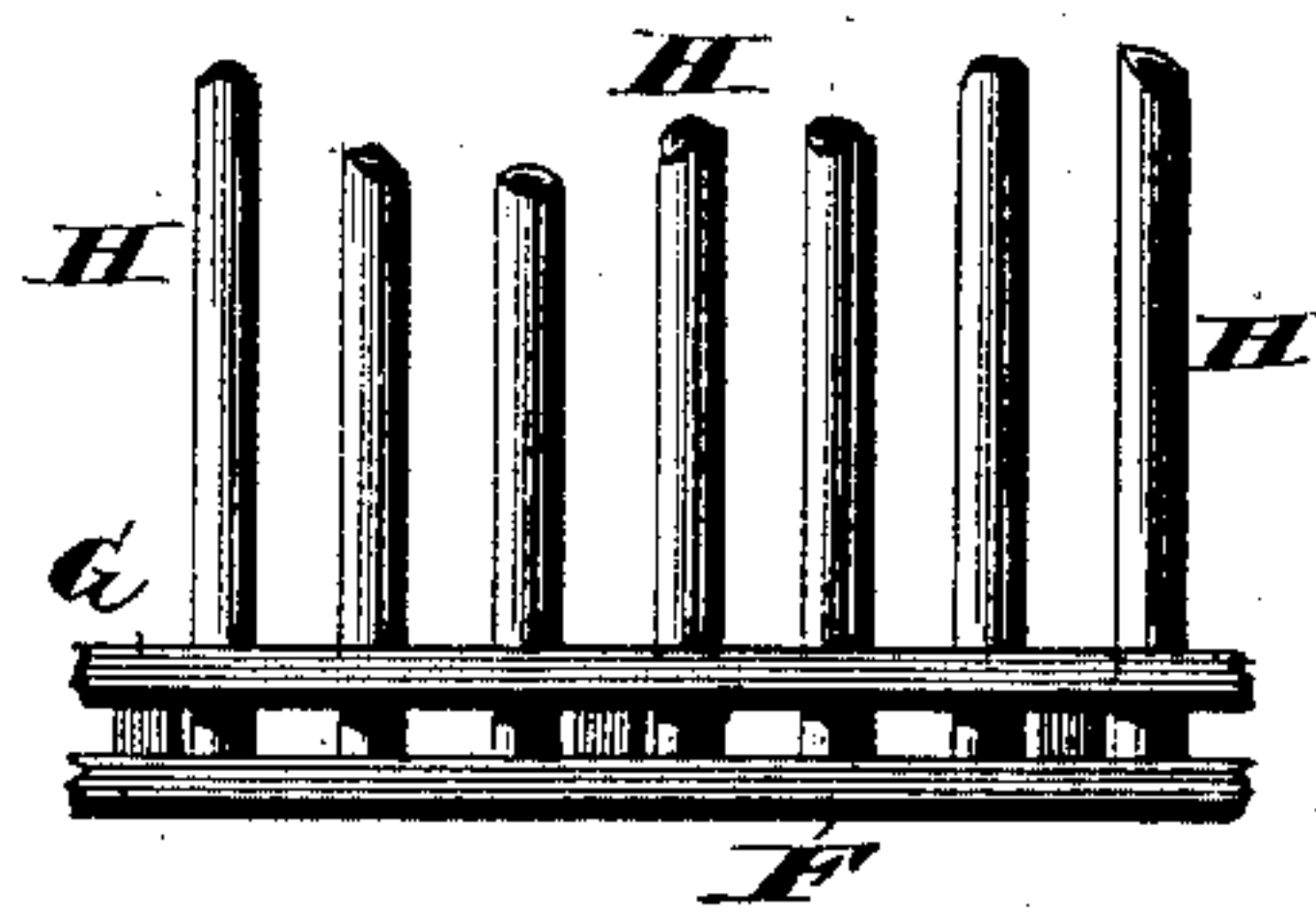


Fig. 4.



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UNITED STATES PATENT OFFICE.

AUGUST M. SCHILLING, OF CHICAGO, ILLINOIS.

LUMBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 327,322, dated September 29, 1885.

Application filed May 29, 1885. (No model.)

To all whom it may concern:

Be it known that I, AUGUST M. SCHILLING, of Chicago, in the county of Cook, and in the State of Illinois, have invented certain new and useful Improvements in Drying Lumber; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a perspective view of a dry-house provided with my invention, the walls of the kiln being broken away to show the arrangement of the parts within; Fig. 2, a plan view of the bottom of the drying-room and the perforated bottom plates of the lumber-rack. Fig. 3 shows a detail view of a portion of one of the top cross-bars of the rack, and Fig. 4 a detail view showing in elevation the method and means of fastening and holding the ends of the upright tubular rods in place in the rack.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide an improvement in kilns or drying-houses; and to this end it consists in the construction, arrangement, and combination of parts, as hereinafter specified.

In the drawings, A A designate the walls or casing of the dry-house, which I prefer to make of brick, but do not limit myself to any material therefor.

It is to be provided with a roof, B, of suitable material, and with doors of such size and so situated as to admit ready access to the room within, and so that the lumber can be readily and quickly put in place in the rack C within the room, as hereinafter described. Upon the floor of the room are placed the parallel timbers or beams D D, situated at regular distances apart, as shown, and running from front to rear of the room, but not extending quite up to the front and rear walls. Between these timbers are run the steam-pipes E E. I prefer to arrange them as shown in the drawings. In such arrangement the pipe beginning at E' at one end of one side of the series of timbers, and preferably receiving the steam at that point from a suitable source of supply, runs just inside of the outer beam to its rear end, then doubles and runs back to the

front again, then doubles and runs back to the rear end of the room, and then extends around the rear end of the second beam D in the series. It then runs forward close to the side of such beam along in the space between it and the third beam. After passing three times through the length of such space it passes around the forward end of the third beam, and so on throughout the series of beams and spaces. With this arrangement each space receives the heat from three lengths of pipe. Across the series of timbers or beams D D, and resting upon them, are the transverse plates F F, preferably of iron. These plates are arranged parallel to each other and at equal distances apart. Directly above these plates are iron plates G G, corresponding in number, position, and size with the series of bars or plates F F.

The plates G G can be fastened directly to plates F F, or to distance-blocks placed upon plates F F. Plates G G are, as shown in Fig. 2, provided with two longitudinal series of holes, (designated by *g* and *g'*.) The holes in series *g* are one inch apart, and those in series *g'* are farther apart, preferably one inch and a half. Into the holes of one or the other of the series in each plate G, according to the thickness of the lumber to be dried, are inserted the lower ends of the round iron tubes H H, the upper ends of which are inserted into corresponding holes, *i i* or *i' i'*, in the upper transverse plates or bars, I I, which are, like plates G G, preferably of iron, but can be of any desired material.

Instead of iron tubes H H, I contemplate using, if desired, tubes of other metal, or round iron or wooden rods; but I prefer the iron tubes, as shown and described.

In practice, as the lumber to be dried requires, the lower and upper ends of the tubes H H are inserted in corresponding series of holes, *g g* and *i i* or *g' g'* and *i' i'*, in the lower and upper plates, G G and I I, so that the spaces between the upright tubes will be just wide enough to admit the lumber when turned up on edge. The lumber is then thrust or shoved in endwise between the tubes, one piece or board being shoved in on top of the other until the rack is sufficiently full. The upright tubes will then hold the lumber be-

tween them, turned up edgewise, with the faces vertical.

As the tubes are round, they can, if they touch the faces of the lumber, only be in contact with a very small portion of each piece, really little more than a line. They do not then interfere with the free access of the hot air passing up through the rack between the vertical series of pieces of lumber to both sides or faces of the lumber.

There is another advantage in having the uprights of the rack round, and that is that they then offer no obstacle to quickly and readily shoving the boards or pieces of lumber in edgewise between them. The rack then does not have to be built up each time it is used, by the inserting in place of several uprights after a portion of the lumber has been put in place, as has been done heretofore.

I have found that where, as in my rack as described, the lumber is placed and held upon its edge within the drying-room, about one-half the time is necessary for thorough drying which is requisite for drying lumber placed the usual flat way with cleats or slats between the pieces.

The heat rising from the steam-pipes on the bottom of the room, below the rack, in rising strikes equally on both sides of the lumber so as to prevent any warping, and then passes up unobstructed to and above the top of the rack and away from the lumber, carrying the moisture removed from the lumber with it.

Where thinner or thicker lumber is to be treated, the tubular rods can easily and quickly be taken out and inserted into the other corresponding series of holes in plates H H and I I.

The lower plates, F F, below plates G G, serve to support the lower ends of the tubes inserted into the holes in the plates G G.

At the top of the kiln or drying-room there should of course be one or more flues or pipes for allowing the escape of the air from the room after it has passed up through the rack and between the pieces or upright tiers of lumber therein.

Such flues might be situated as shown in Fig. 1; or could be in the center of the roof of the kiln, if desired.

I do not claim herein, broadly, a rack for lumber - driers having movable uprights adapted to be adjusted to hold the boards or planks closely and firmly between them, as such a rack is, broadly, not new.

Having thus described my invention, what I claim is—

1. In a rack for a lumber drier or kiln, the

combination of the upper and lower plates provided with corresponding series of holes and the uprights having their opposite ends inserted and held in the holes in the plates, substantially as and for the purpose described.

2. The lumber-holding rack for a drier or kiln, consisting of the upper and lower plates and the tubular uprights having their ends inserted and held in holes in the plates, substantially as and for the purpose described.

3. In combination with the corresponding upper and lower plates, each provided with a series of holes at a distance apart substantially equal to one thickness of lumber to be treated and with another series at a distance apart equal to that of another thickness of lumber, the round tubular uprights adapted to have their ends inserted and held in the holes of either of the opposite series of holes in the upper and lower plates, substantially as and for the purpose described.

4. In a lumber drier or kiln, in combination with the longitudinal supporting-timbers, the steam or other heating pipes between the same, the transverse plates supported upon these timbers, the transverse plates supported upon these plates and provided with longitudinal series of holes, the round tubular uprights having their lower ends inserted in the holes in such plates, and the upper transverse plates having longitudinal series of holes receiving and holding the upper ends of the tubular uprights, substantially as and for the purpose described.

5. In combination with the drying-room, the longitudinal parallel timbers upon the floor thereof, the steam-pipes extending longitudinally back and forth between them, the transverse iron plates supported upon and extending across these timbers, the transverse iron plates above these plates provided with two or more series of holes, in which the holes of different series are different distances apart to correspond with the different thicknesses of timber to be dried, the top transverse plates having series of holes corresponding with those in the lower plates, and the round iron tubes having their ends inserted and held in corresponding holes in the upper and lower plates, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of May, A. D., 1885.

AUGUST M. SCHILLING.

Witnesses:

ALBERT H. LARNED,
EUGENE G. HENRY.