

(No Model.)

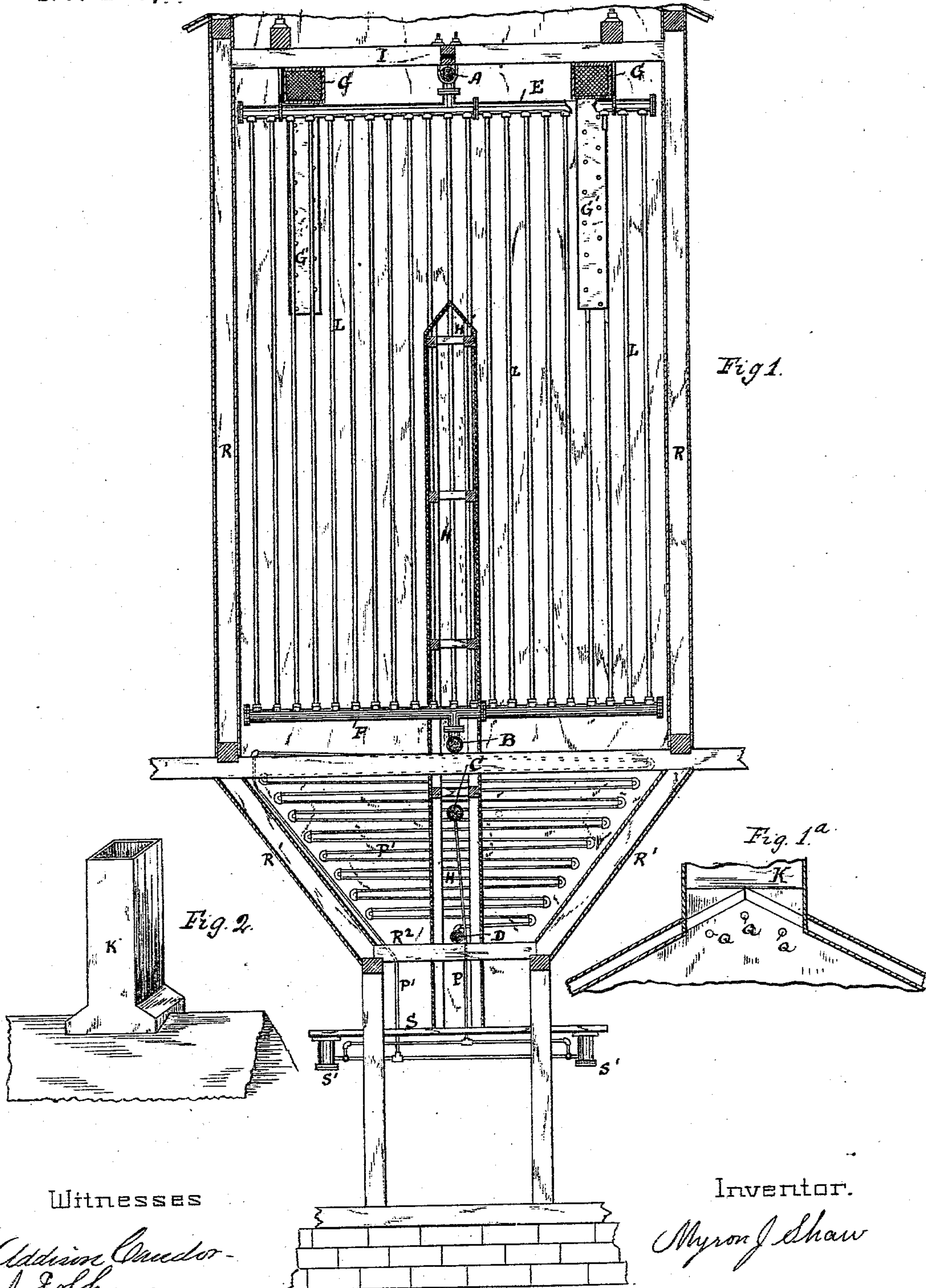
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M. J. SHAW.

KILN FOR DRYING KINDLING WOOD.

No. 283,673.

Patented Aug. 21, 1883.



Witnesses
Uddison C. C. C. C.
J. J. J. J.

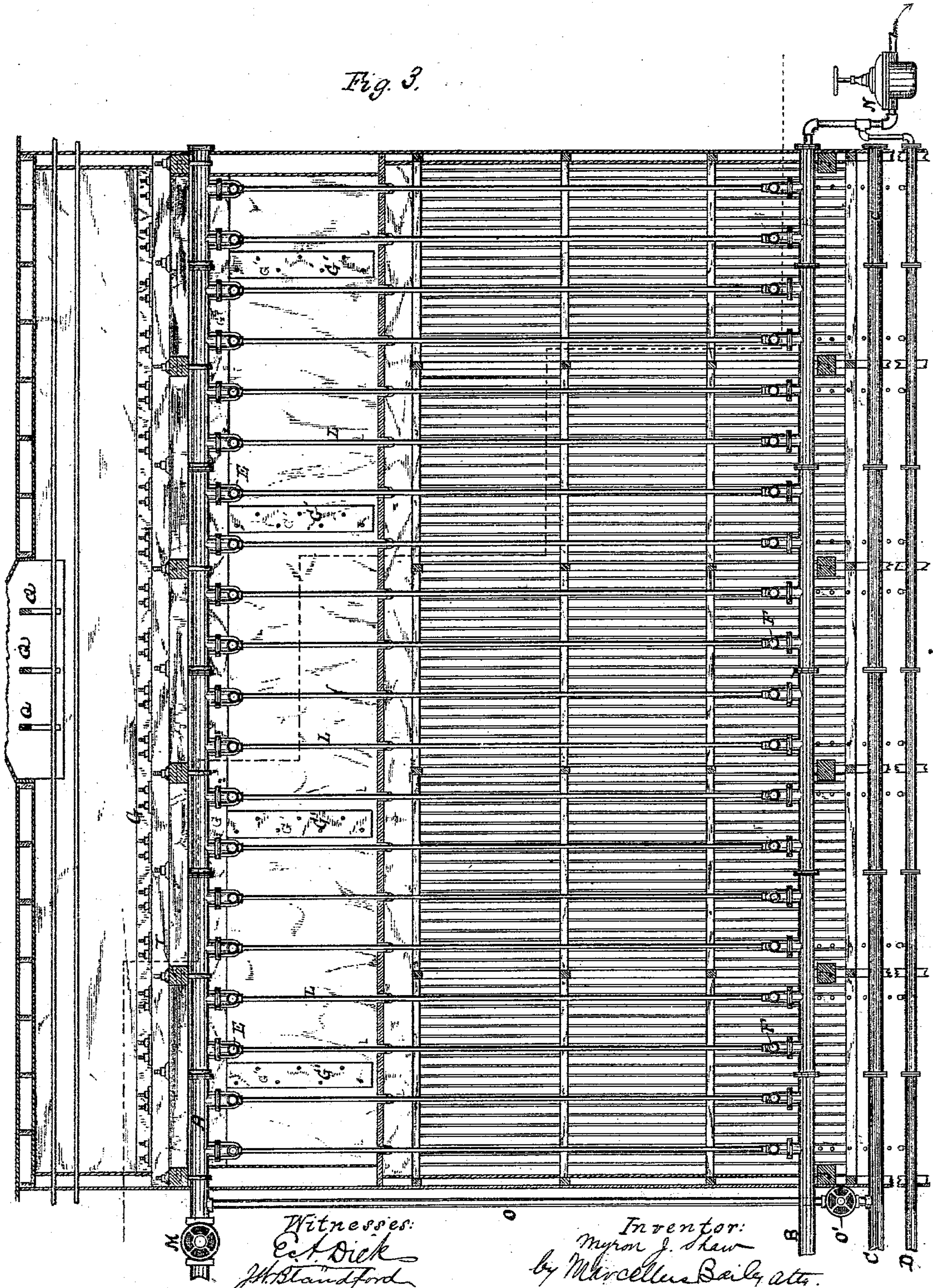
Inventor.
Myron J. Shaw

(No Model.)

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Fig. 3.



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(No Model.)

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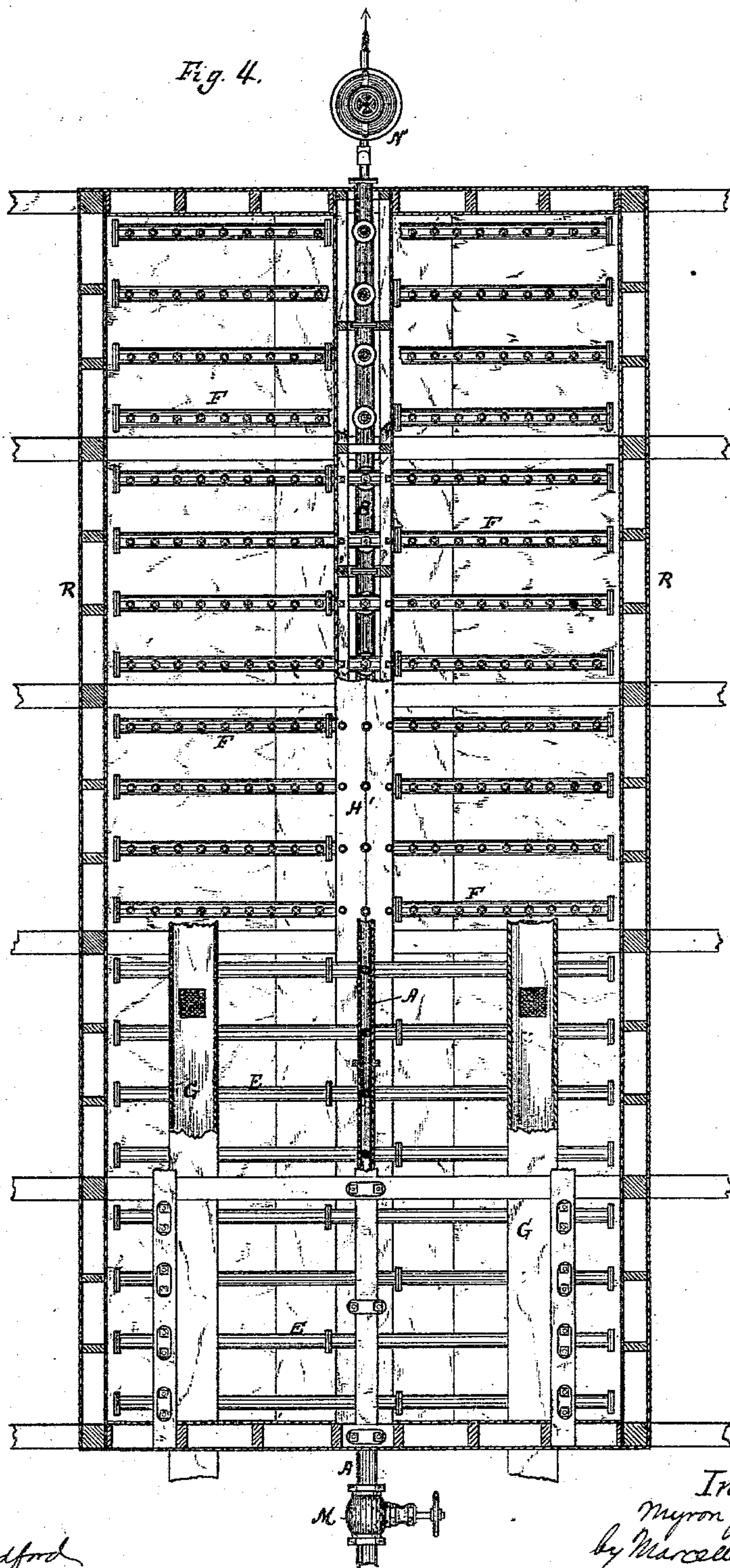
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Fig. 4.



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UNITED STATES PATENT OFFICE.

MYRON J. SHAW, OF WILLIAMSPORT, PENNSYLVANIA.

KILN FOR DRYING KINDLING-WOOD.

SPECIFICATION forming part of Letters Patent No. 283,673, dated August 21, 1883.

Application filed May 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, MYRON J. SHAW, of the city of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Kilns for Drying Kindling-Wood, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a transverse vertical section of a kiln embodying my improvements. In this figure the roof of the kiln is removed, and the upper part of the same is represented in section in Fig. 1^a. Fig. 2 is a perspective view, representing a portion of the roof and the chimney. Fig. 3 is a longitudinal vertical central section of the kiln, with the exception of the lower hopper-like portion of the same. Fig. 4 is a section on the dotted line 4 4, Fig. 3.

In this kiln the wood is to be dried by means of steam-piping. I shall first describe the construction of the apparatus and the manner of using the same, and will then point out the features therein, which I deem to be new and of my invention.

The body of the kiln or drying-chamber is shown at R. Its walls are double, for the purpose of preventing the escape of heat. It is surmounted by a roof of similar construction, and at its lower end has the form of a hopper, as indicated at R'. The pieces of wood which are to be dried are put into the kiln from the top, and they thence descend gradually through the kiln into the hopper-like part R', whence they can be removed as wanted. They can, for instance, be taken out through a side opening or door at the point R², or they may be permitted to descend still lower to the table or platform S, which, in practical use of this apparatus, carries the machines for bundling the dried kindling-wood. The machines which I prefer to employ for this purpose are what I term "steam-bundlers"—that is to say, the follower or compressor, which acts to compact the bundle, is connected to and moves with the steam-piston of the machine. In Fig. 1, I have indicated at S' the steam-cylinder of two such machines. Live steam is supplied to these cylinders from pipe C through pipe P, and the exhaust-steam from the cylinders is carried through a coil, P', to exhaust-pipe D. The coil P' is arranged in the hopper part R', so as

to utilize its heat for the purpose of more effectually drying the wood. Pipes C and D are in the hopper portion R' of the kiln, and extend lengthwise thereof through the hot-air chamber H, hereinafter referred to, thus serving as instrumentalities for heating the air in said chamber.

In the upper part of the kiln, and extending longitudinally and centrally thereof, is the main header-pipe A, supported by hangers attached to the cross-beams I. Vertically beneath and in line with A is a similar pipe, B, which is within the hot-air chamber, and extends throughout the length of the same. Attached to and communicating with pipe A are cross header-pipes E, and attached to and communicating with the lower pipe, B, are similar placed crossed header-pipes F. Between each pair of top and bottom crossed header-pipes E and F, and communicating therewith, are a number of vertical pipes, L, which pipes should be in practice connected with the cross-header-pipes by couplings or equivalent means, which will permit any one of the vertical pipes to be removed without interfering with the others. Under this arrangement it will be seen that the kiln or drying-chamber will contain throughout its extent a large number of vertical pipes set closely together, but not too near to one another, however, to prevent the kindling-wood from descending gradually through the kiln, and that these pipes, when steam-heated, furnish in the aggregate a very extensive heating-surface, to act upon the wood in all parts of the kiln. Steam for this purpose may be supplied to the pipes in various ways. I propose in practice to connect the main header-pipe A with the exhaust of the engine, which will generally be used at the works, the admission of the steam being controlled by valve M. Steam entering the pipe A will be distributed therefrom to the upper cross header-pipes, E. From the latter it will pass down through the vertical pipes L into the lower cross-header pipes, F, whence it will pass into pipe B, which leads out of the kiln through the trap N.

It may be desirable at times to supply pipe A with live steam from steam-pipe C, which supplies live steam to the bundlers. For this purpose I connect pipe A with C by a pipe,

O, controlled by a valve, O'. If communication be opened between C and A, valve M should of course be closed.

For the purpose of gathering the vapors 5 which arise during the drying process, and of conducting them out from the kiln, I make use of one or more air-flues or trunks, G, (two are shown in the drawings,) which extend lengthwise in the building of the upper portion, and 10 are provided with a number of perforated pendent branches, G', which extend down into the mass of kindling-wood in the kiln. These flues lead out from the kiln, and may be connected with suction-fans or other air-exhausting de- 15 vices for drawing off vapors. For the same purpose I also make use of the chimney K. In some instances I find it useful to create an artificial upward draft in this chimney by means of steam-pipes Q, which are placed in the 20 chimney-opening, and have jets through which steam is discharged in an upward direction. The hot-air chamber H, hereinbefore referred to, is provided with a roof, H', and with vertical slatted or equivalent formed sides, to per- 25 mit the escape therefrom into the drying-chamber of the heated air. It extends centrally and lengthwise of the building, and has openings at the bottom for the admission of outside air.

30 The kindling-wood which is to be dried is first, of course, sawed up and cut into pieces of proper size, and is dumped into the kiln from the upper part until the body of the kiln is full. Steam being turned on and heat applied, 35 the wood is allowed to remain in the kiln—say for two or three days—until that part of it in

the lower portion of the kiln is dry enough to be taken out. Then the wood is gradually re- 40 moved by taking it out from the lower portion of the hopper, thus permitting the wood in the upper part of the kiln gradually to descend, and making room for fresh supplies of wood, which are dumped into the top of the kiln. After the kiln is once started the operation is 45 practically continuous, the dried wood, which is taken out at the bottom of the kiln, being replaced by undried wood, which is put in at the top.

What I claim as new and of my invention is as follows: 50

The combination, with the drying room or chamber having lower hopper-like portion, R', of the main steam-supplying header-pipe A, main exhaust-pipe B, top and bottom series of cross-header pipes E F, vertical connecting- 55 pipes L, vapor trunks or flues G, provided with perforated pendent branches G', the central hot-air chamber, H, provided with air-admitting openings at the bottom, and with vertical slatted or equivalently-formed sides ex- 60 tending up into the drying-chamber and inclosing portions of the steam-supply and heating pipes, the whole being constructed and arranged for joint operation, as hereinbefore 65 shown and set forth.

In testimony whereof I have hereunto set my hand this 30th day of March, 1883.

MYRON J. SHAW.

Witnesses:

J. E. SHAW,
ADDISON CANDOR.