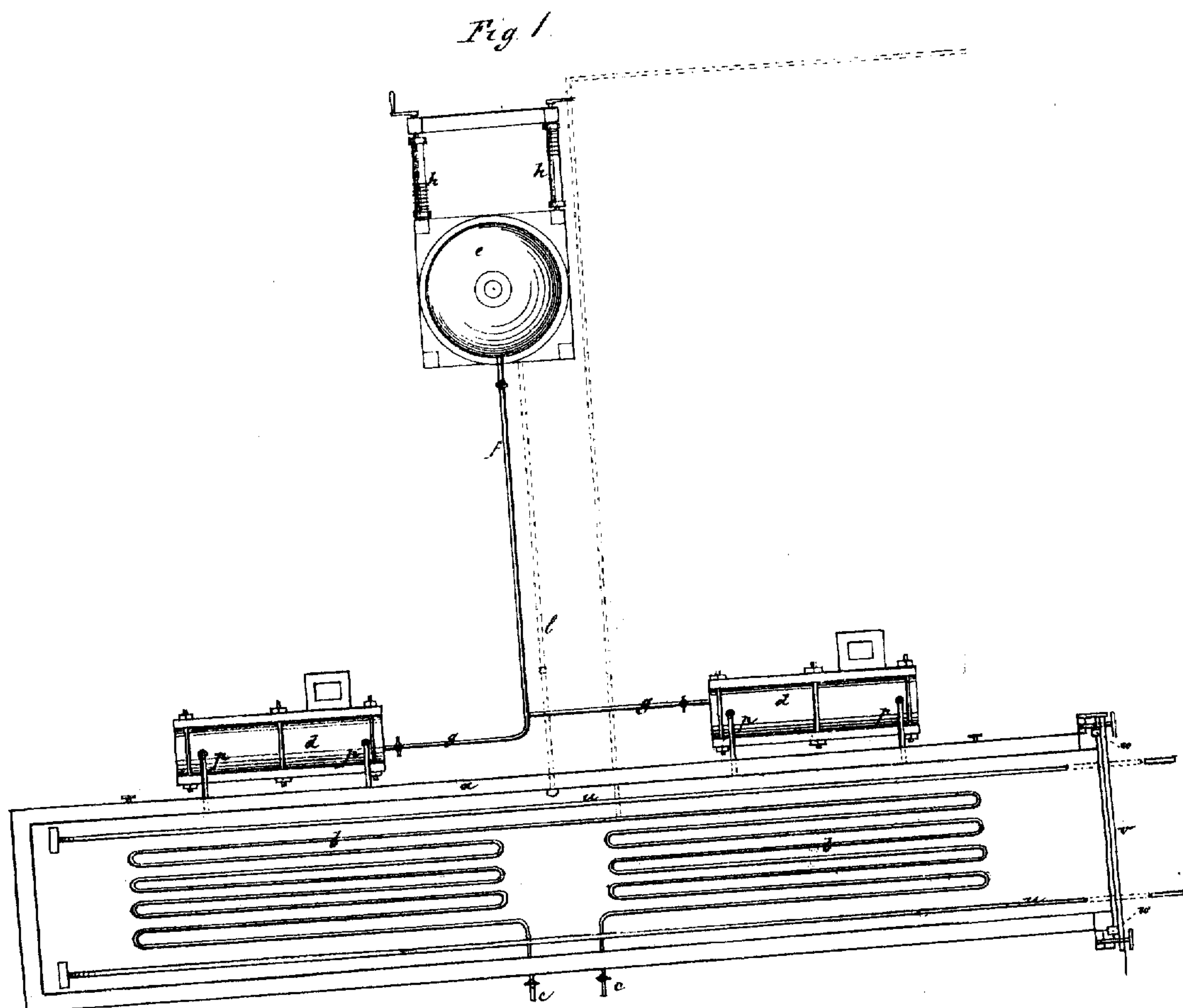


JOHN W. FIELDER.
Improvement in Apparatus for Preserving Wood
by the Robbins' Process.

No 115.946.

Patented June 13, 1871.



Witnesses:
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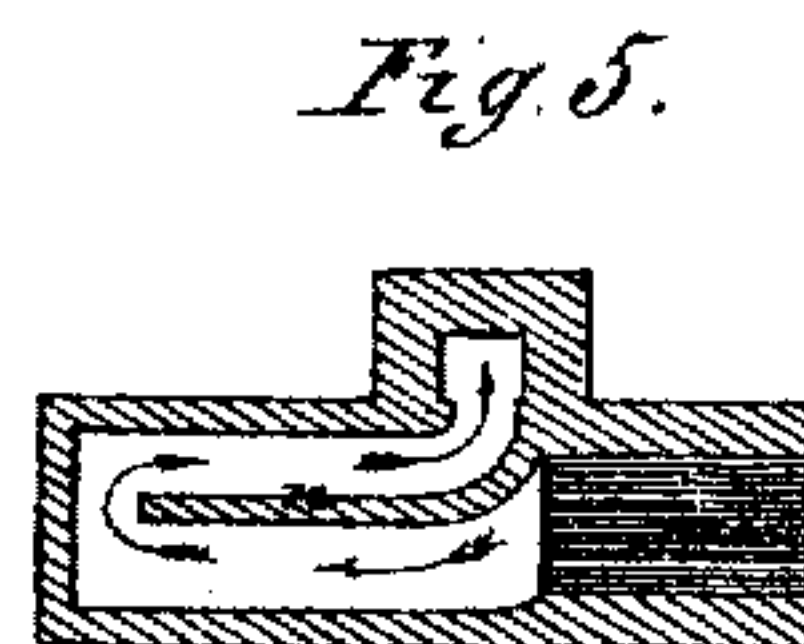
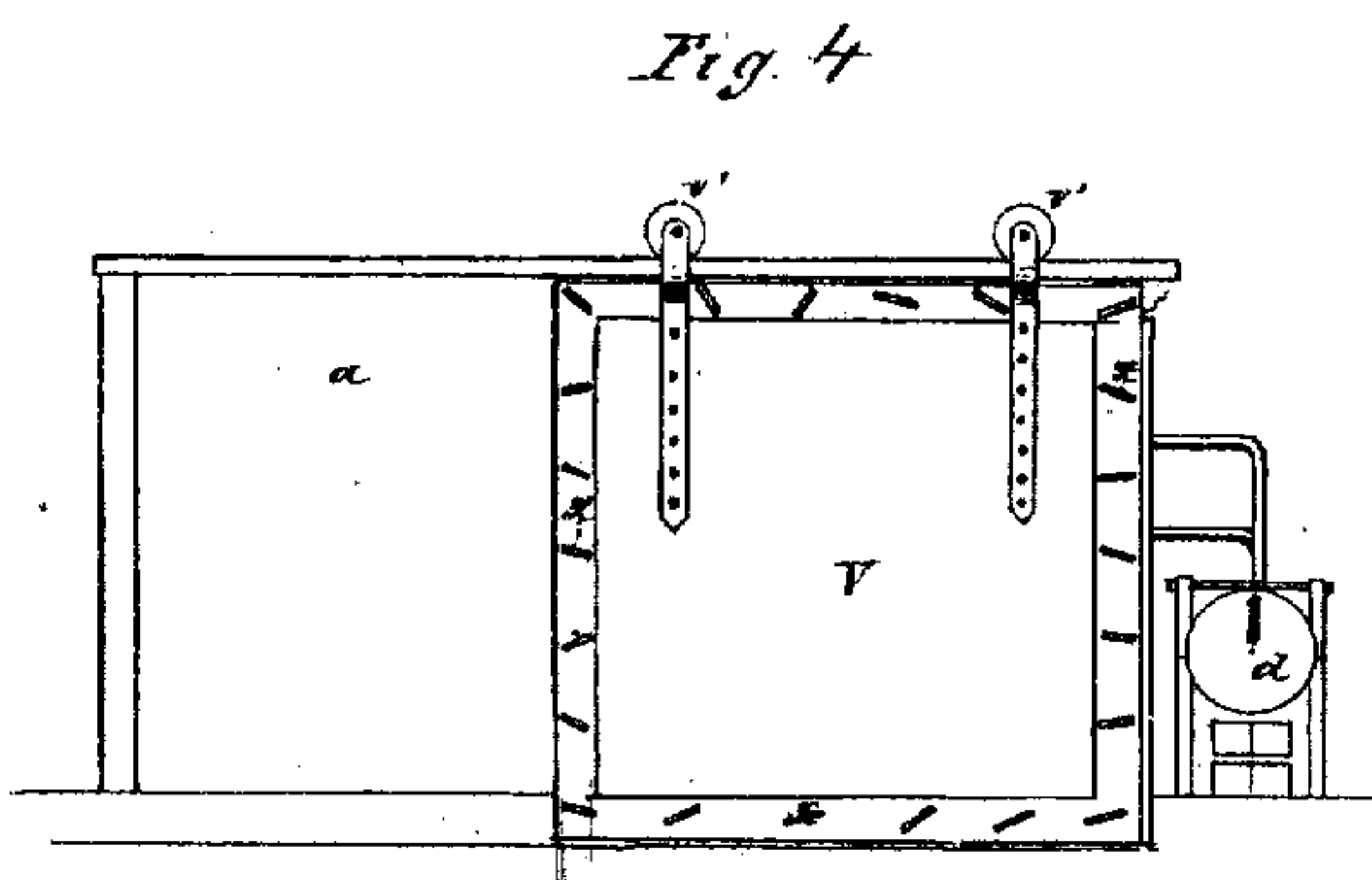
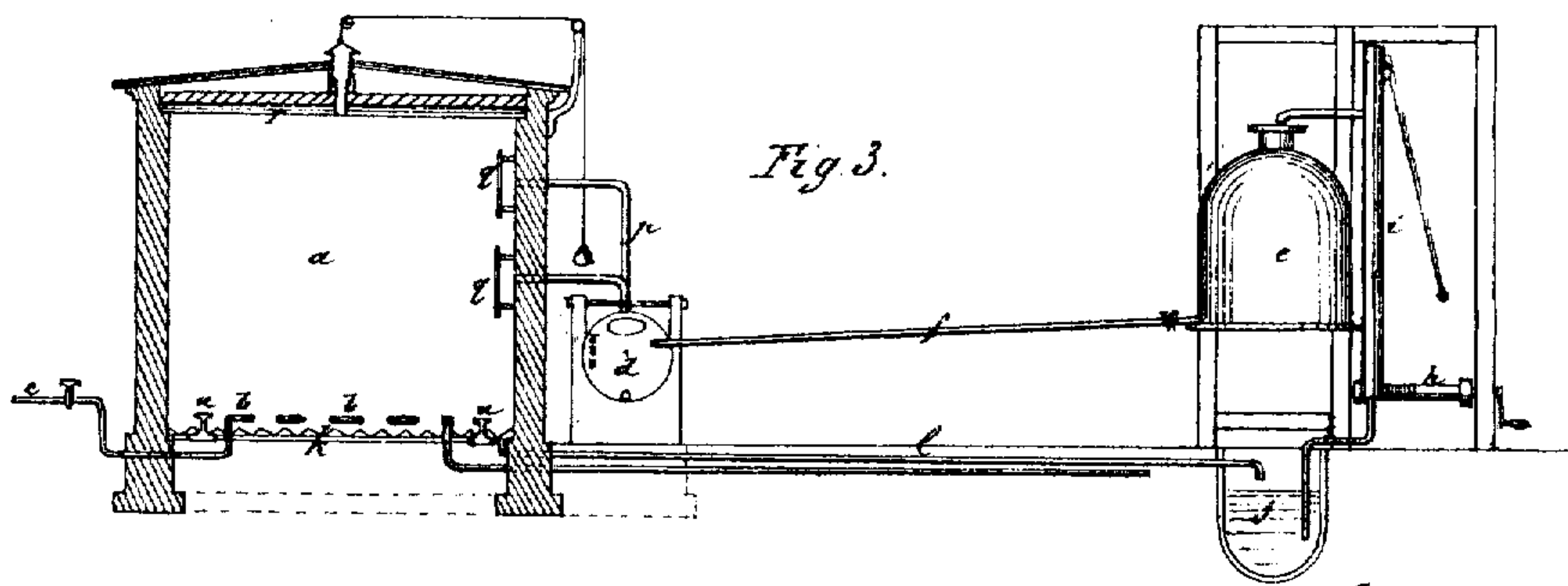
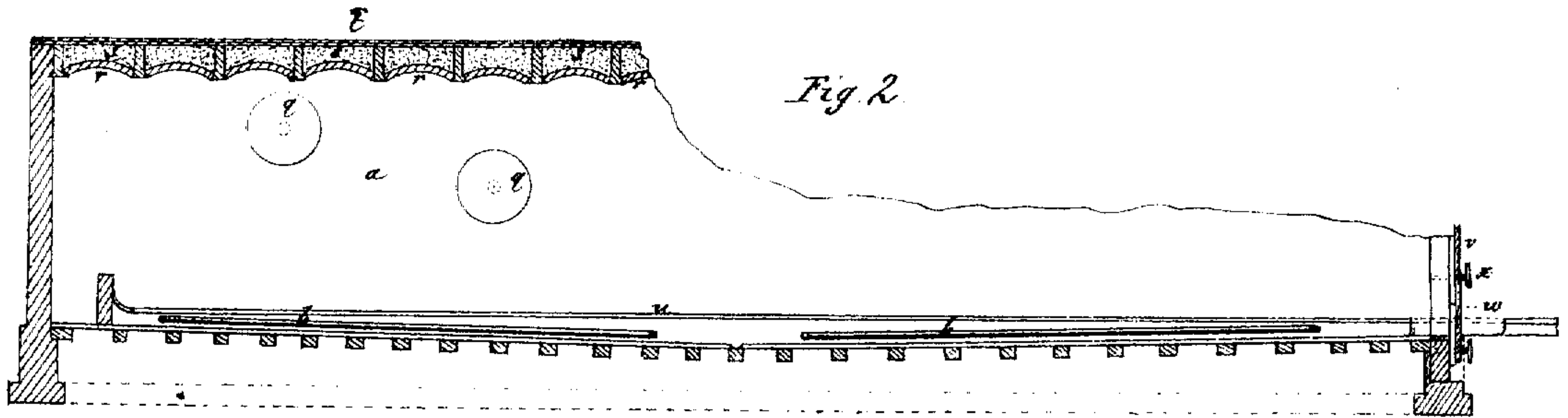
Scale: 1 inch to 8 feet.

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Improvement in Apparatus for Preserving Wood
by the Robbins' Process.

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Patented June 13, 1871.



Witnesses:

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Scale: 1 inch to 8 feet.

UNITED STATES PATENT OFFICE.

JOHN W. FIELDER, OF PRINCETON, NEW JERSEY.

IMPROVEMENT IN APPARATUS FOR PRESERVING WOOD BY THE ROBBINS PROCESS.

Specification forming part of Letters Patent No. 115,946, dated June 13, 1871.

To all whom it may concern:

Be it known that I, JOHN W. FIELDER, of Princeton, in the county of Mercer and State of New Jersey, have invented a new and Improved Kiln for the Treatment and Preservation of Wood by the Robbins Process; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a top view of the kiln, (with the roof removed,) the boilers, and the reservoir. Fig. 2 is a sectional elevation of the kiln. Fig. 3 is a transverse section of the kiln, showing also the reservoir. Fig. 4 is an end elevation of the kiln, and Fig. 5 is a top view of the furnace.

This invention relates to an apparatus for preserving wood by what is known as the Robbins process—that is to say, by placing wood in an air-tight kiln and introducing thereinto the vapor of creosote oil, which vapor drives moisture and air out of the pores of the wood, coagulates the albumen of the sap, thus preventing its putrefaction, and fills the pores with oil, thus rendering it secure from decay.

Referring to the drawing, *a* is the air-tight chamber, the same being constructed of any suitable material. On the floor of the chamber is laid a series of serpentine pipes, *b*, which are intended to receive steam or oil-vapor from the outside for the purpose of heating the chamber to the required degree previous to or at the time of introducing oil-vapor into the kiln. The exhaust-pipes of the series *b* are shown at *c*. Boilers, *d*, of any desired size, are located outside the chamber *a*, which boilers receive oil from a reservoir, *e*, through a main pipe, *f*, and branch pipes *g*. The reservoir *e* is situated above the level of the boilers, so that the oil will flow into the latter of its own accord when the cocks are open. Oil is supplied to the reservoir in the first instance from barrels, which are hoisted to the top of the reservoir by windlasses *h*. The supply is kept up in the reservoir by means of a pump, *i*, Fig. 3, which elevates the oil from the receptacle *j*, into which it runs from the kiln after having entered the same in the form of a vapor and been condensed therein, that part of the oil not absorbed by the wood collecting

in the gutters *k*, Fig. 3, that are formed in the surface of the floor and covered with sheet-iron. The floor and gutters slope from both ends toward the center, as shown in Fig. 2. The pipe which conducts the oil from the gutters *k* to the receptacle *j* is shown at *l*, Fig. 3. The furnace under each boiler *d* is built as shown at Fig. 5, wherein *m* is the grate; *n*, a dividing-wall running lengthwise of the furnace; and *o*, the chimney. The wall *n* forces the products of combustion to travel once back and along the whole length of the boiler *d* above, thus economizing heat.

The vapors generated in the boiler *d* pass out of the same into the chamber *a* through pipes *p*, of which there are two to each boiler. These pipes pass through the side wall of the chamber *a* at any desired points of height. Opposite to their ends are situated fenders, *q*, suitably secured to the wall, whose office is to disseminate the vapors as they issue from the pipes. Pouring around the fenders the vapor fills the chamber and produces the desired effect upon the wood. That part of the vapor not absorbed passes off, as above explained.

The roof of the kiln is constructed of brick arch-work *r*, Figs. 2, 3, with a filling, *s*, of non-conducting material above, and finally the roof proper, *t*. There is a railway, *u*, on the floor of the kiln to facilitate the introduction of the wood. The door *v* of the kiln is hung on rollers *v'*, so that it may readily slide away. A rubber packing, *w*, is secured in a groove in the end of the kiln outside the door-way, extending entirely around the same, and when the kiln is to be fastened up the door *o* is pressed tightly against this packing by means of screws *x* passing through the door and into the kiln.

Instead of steam, vapor from the boilers *d* may be made use of to effect the preliminary heating of the kiln, by means of tubes connecting the boilers with the series *b*. The latter would in this case exhaust into a reservoir which should communicate with the receptacle *j*.

To obviate too great pressure within the kiln a safety-valve, *y*, resting in a cup of water or oil, *z*, Fig. 3, is set in the roof and connected with a weight, *z'*. The vapor, when the pressure is excessive, rises through the valve and

water, and the latter prevents air from entering the kiln.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the kiln *a*, boilers *d*, reservoir *e*, receptacle *j*, and pipes *f l*, as specified.

2. The combination of the kiln *a*, pipes *p*, and fenders *q*, as described.

3. The kiln *a*, provided with gutters *k* in the floor, sloping from each end toward the center, as explained.

4. The kiln *a*, packing *w*, door *v*, and screws *x*, combined, as set forth.

JOHN W. FIELDER.

Witnesses:

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SOLON C. KEMON.]