

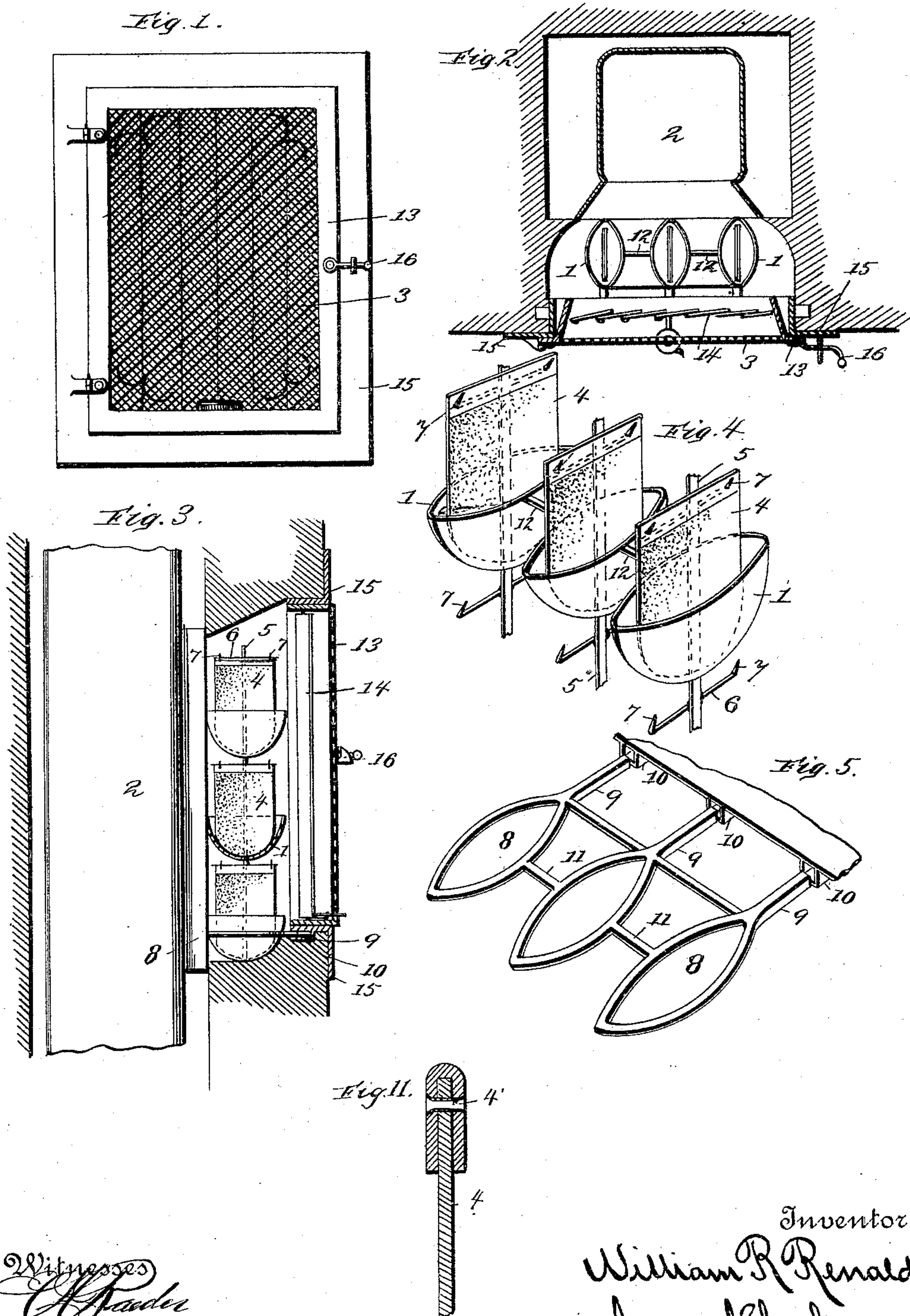
(No Model.)

2 Sheets—Sheet 1.

W. R. RENALDS.
AIR MOISTENING APPARATUS.

No. 432,837.

Patented July 22, 1890.



Witnesses
A. P. Pader
T. C. Turpin

Inventor
William R. Renalds
James Sheehy
Attorney

(No Model.)

2 Sheets—Sheet 2.

W. R. RENALDS.
AIR MOISTENING APPARATUS.

No. 432,837.

Patented July 22, 1890.

Fig. 6.

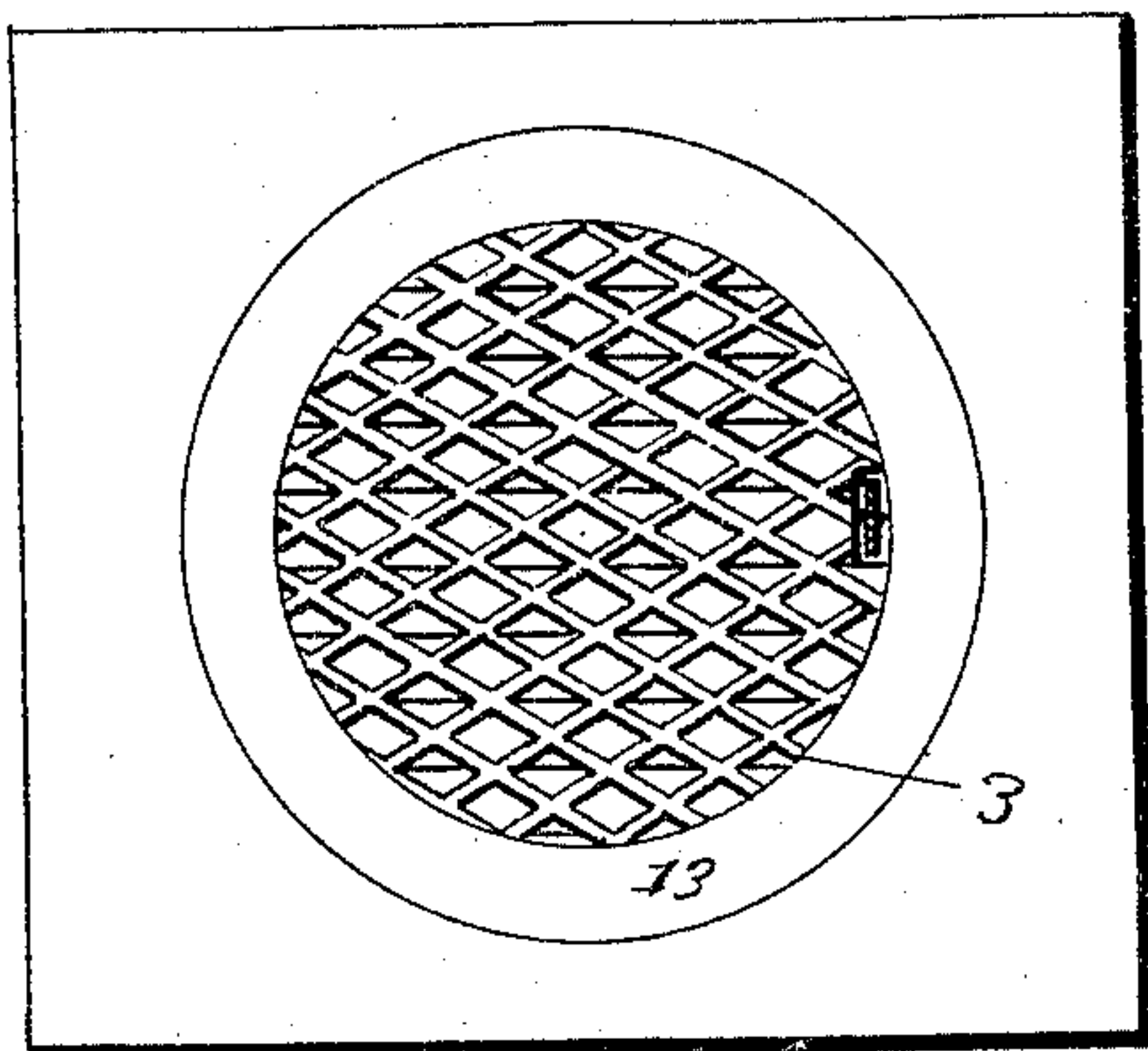


Fig. 7.

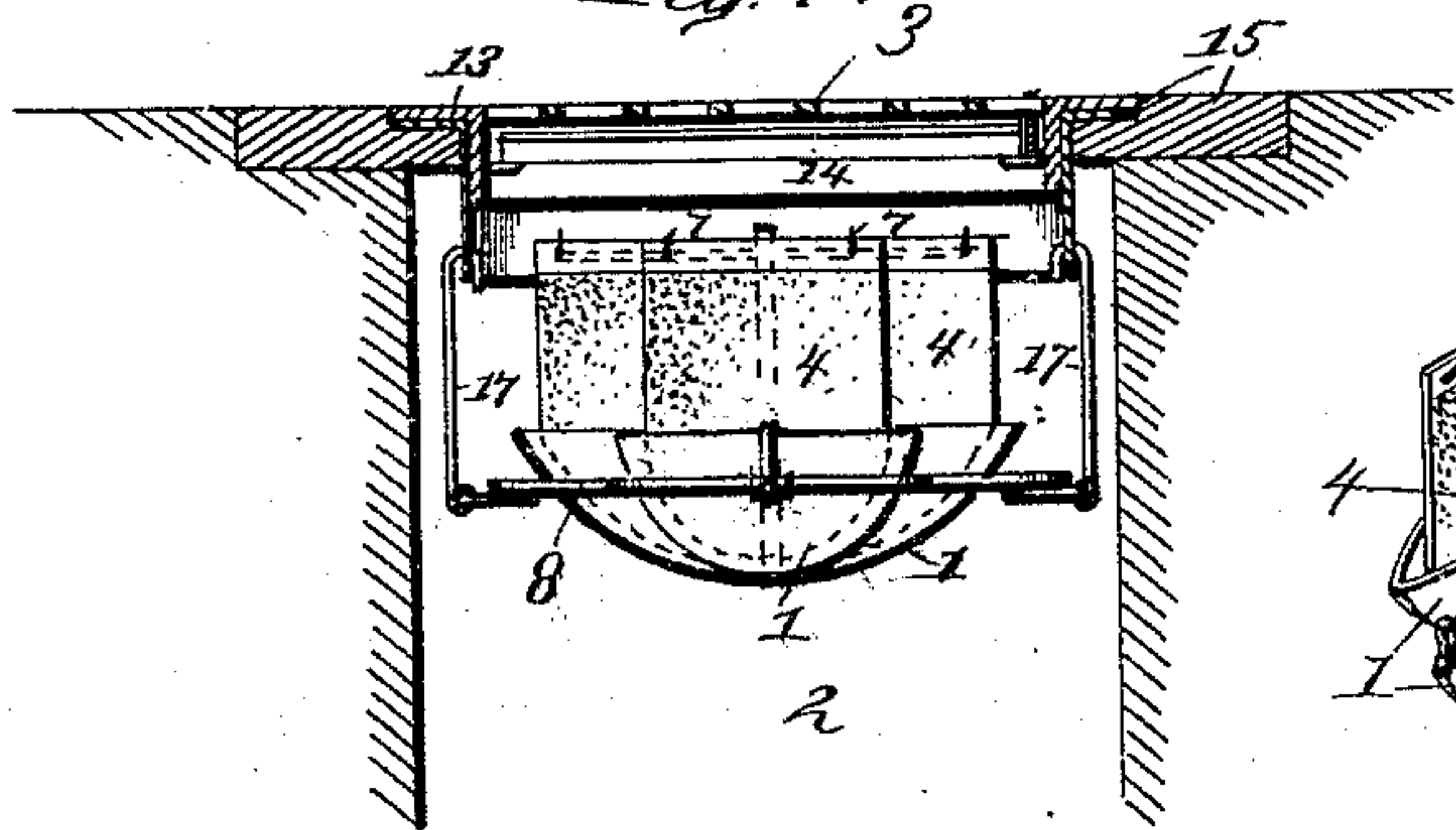


Fig. 10.

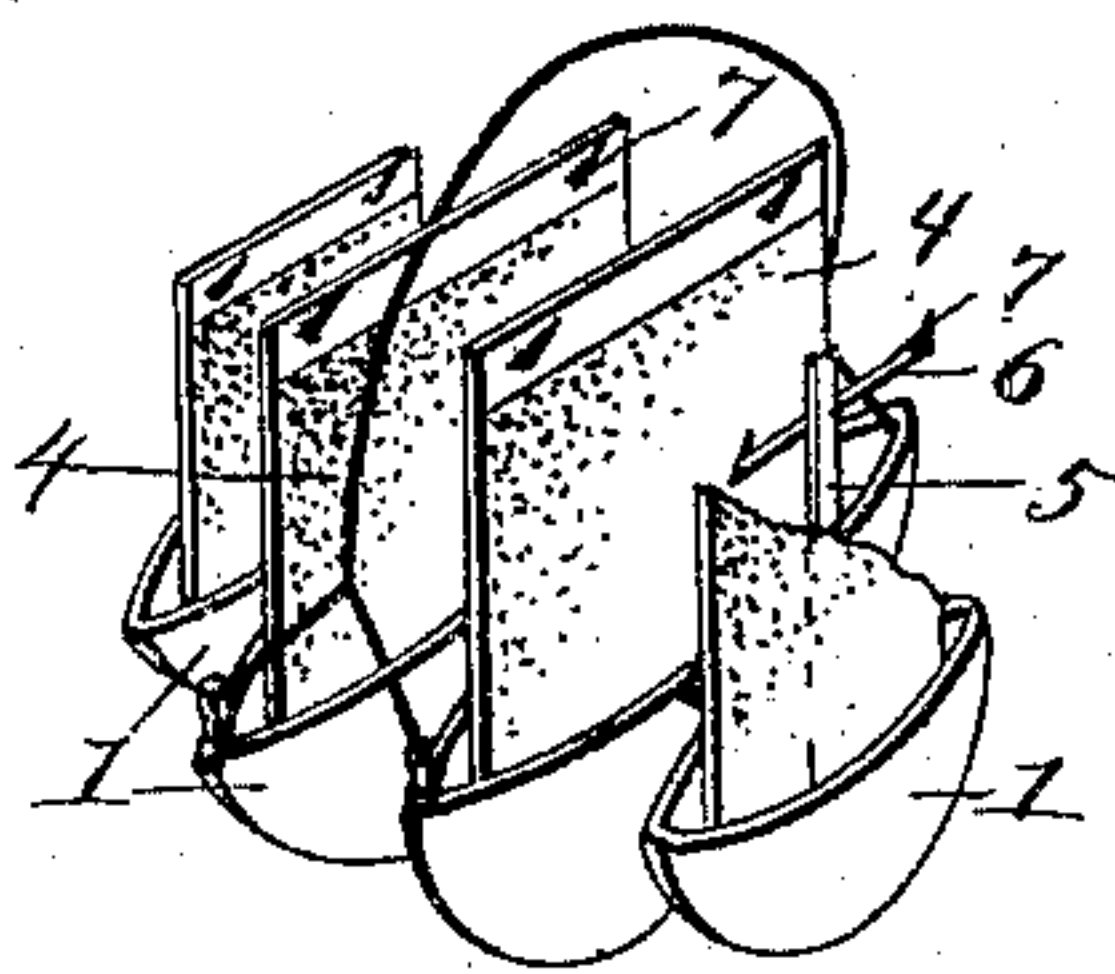


Fig. 8.

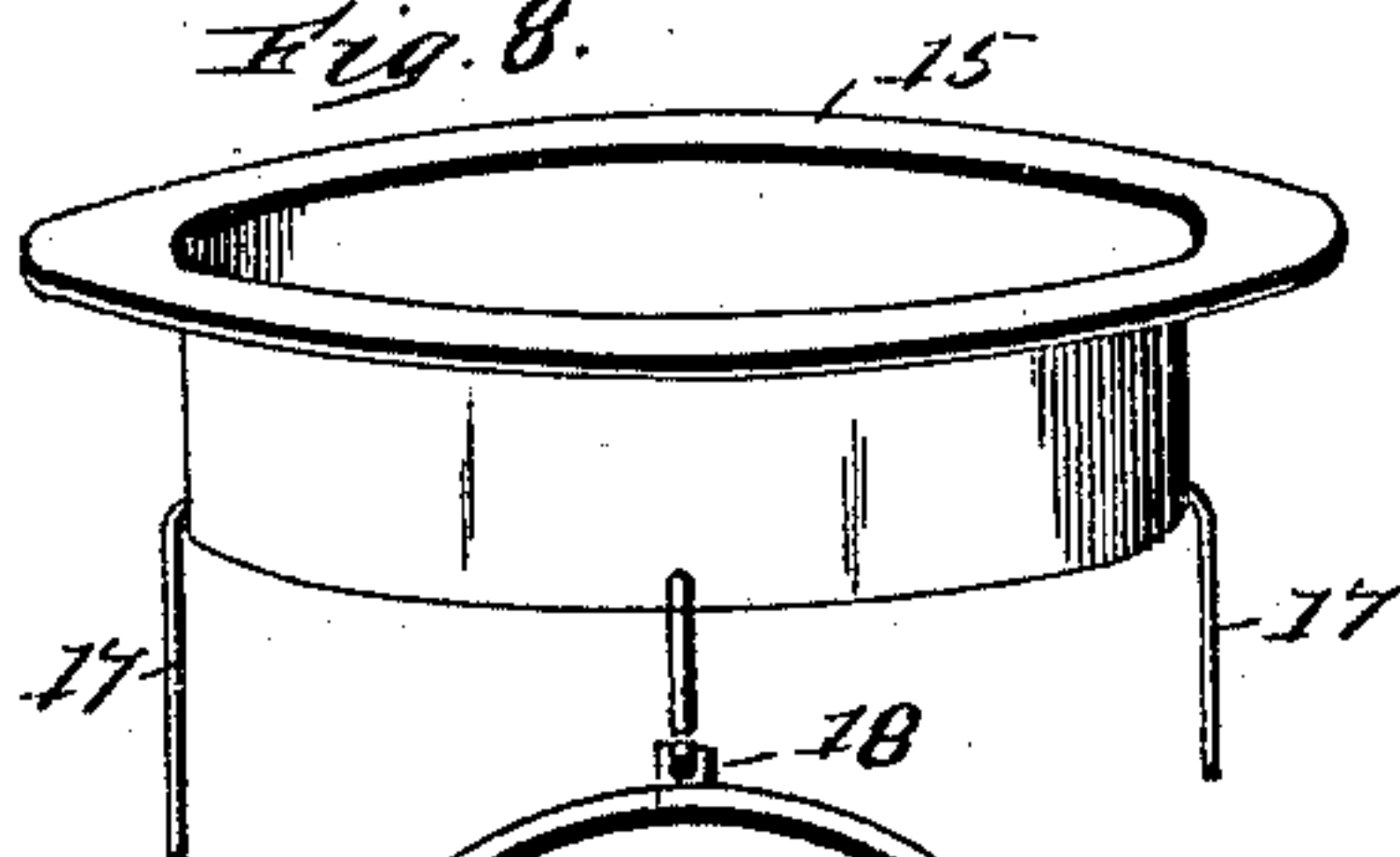
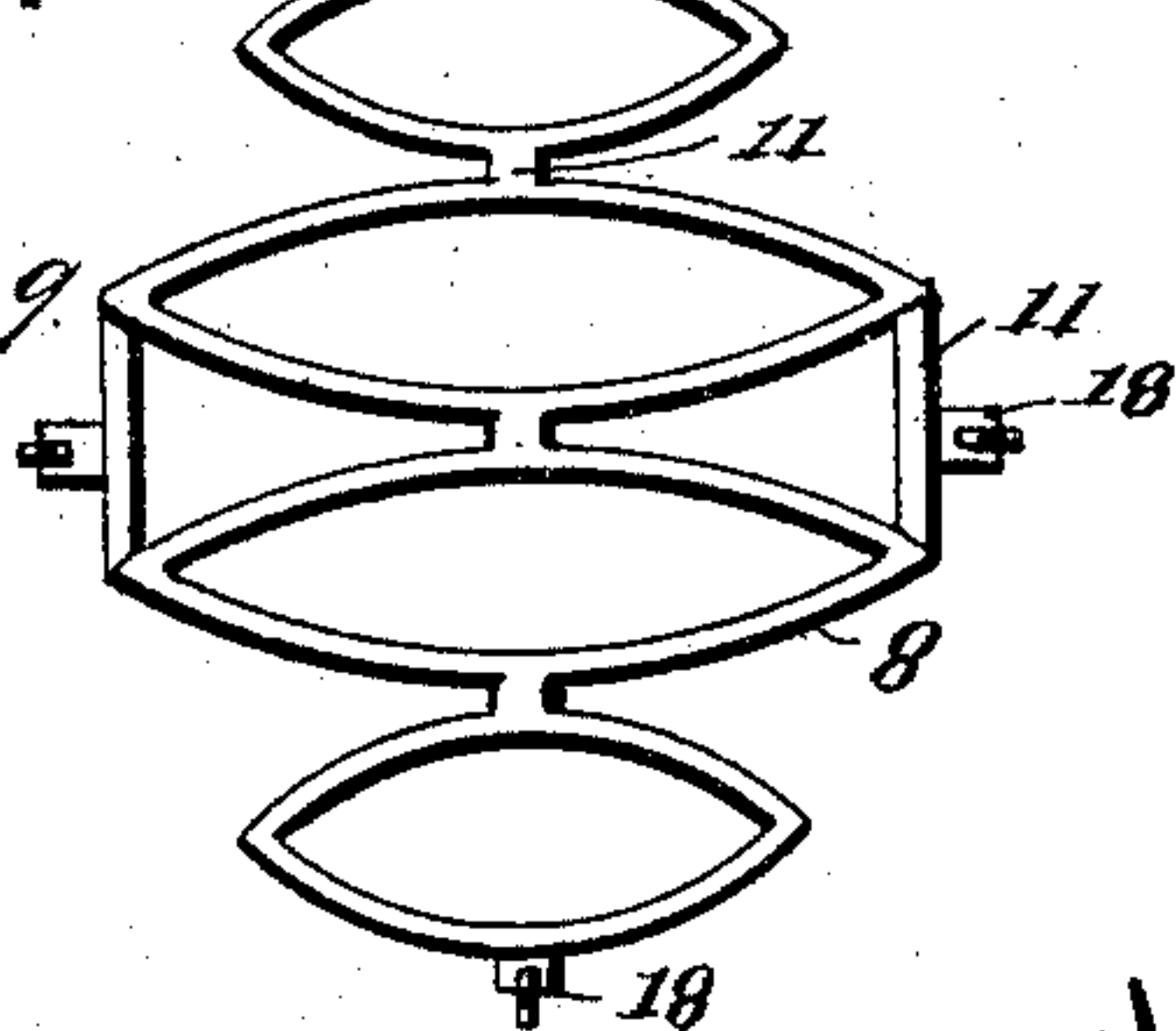


Fig. 9.



Witnesses
W. Raeder
T. C. Turpin

Inventor
William R Renalds
James Shuey
Attorney

UNITED STATES PATENT OFFICE,

WILLIAM ROBERT RENALDS, OF BALTIMORE, MARYLAND.

AIR-MOISTENING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 432,837, dated July 22, 1890.

Application filed March 3, 1890. Serial No. 342,468. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROBERT RENALDS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Air-Moistening Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to attachments for hot-air registers, whereby the air as it passes into the room may be saturated with moisture; and it consists in the improved construction and combination of parts of the same, as will be hereinafter more fully set forth.

Referring to the drawings, Figure 1 is an elevation of a register in the wall adapted for use with my improved attachment. Fig. 2 is a cross-sectional view of the same and of the flue. Fig. 3 is a vertical sectional view. Figs. 4 and 5 are detail views showing my attachment and means for supporting the same. Fig. 6 is a plan view of the floor-register. Fig. 7 is a vertical sectional view of the same, showing the attachment secured thereto. Fig. 8 is a perspective of the register-frame and the hangers for suspending the attachment below it. Fig. 9 is the support at the lower ends of the rods or hangers. Fig. 10 is a perspective view of the form of attachment used with the floor-register, and Fig. 11 is a vertical sectional view of the pad.

In the use of hot-air furnaces an objection is made that the air is too dry for health, owing to the fact that it passes over the heated surfaces of the furnace, which expels the moisture that is held in suspension in the atmosphere, and thus renders it hot and dry. I overcome this objection by placing a pan or vessel for holding water between the flue 2 and the register 3, and providing it with an extended evaporating surface or pad 4, which is made of porous material, as cloth, felt, or blotting-paper. I prefer to make the pad out of a heavy piece of blotting-paper with a covering on each side of cloth or other textile material. This covering may extend entirely over the paper or only the upper portion and can be secured to it by means of eyelets 4', which also afford means of suspending the pad above the pan, or they may be secured

together in any other manner, as by sewing them together, and the eyelets may be omitted. In this way I secure the necessary strength to prevent the paper from being too easily torn when it becomes saturated with water, and without obstructing the evaporating from the pad. This sheet or pad has its lower end extending down into the water within the pan, so that it will be kept moist as long as any water remains in the pan, and it may be supported above the pan within the current of hot air in any suitable manner, although I prefer to use the rack which I have shown, and which consists of the upright 5, resting upon or secured to the pan and having a cross-arm 6 at its upper portion provided with the hooks or pins 7, upon which the upper edge of the sheet of paper is secured by means of the eyelets which are slipped over the hooks 7.

With a small-sized flue and register a less number of pans and sheets of paper will be sufficient; but with the larger ones I prefer to use several pans arranged in groups and place the groups above each other. In doing this I place the lower vessels in an open frame 8, which is secured in the wall under the register or to the register-frame by means of the arms 9. The frames may be made separate and detachable by placing them within loops or staples 10 in the wall or register-frame, and the open portion may consist of flat oval-shaped rings, which may be connected together by means of the cross-bars 11. The ovals are preferably arranged with their longer axis parallel with or in line with the current of hot air, so that the vessel, which is made oval and flattened, will not obstruct the draft and will present as much surface to the action of the current of hot air as possible, and thus cause the water in the vessel to be heated and evaporated, which will assist in saturating the current as it passes into the room. The pans may also be braced together by means of braces 12, and, if desired, they can be provided with a bail for lifting them out and replacing them.

I place the pads edgewise to the current of hot air, so that they will not obstruct the draft and will expose both sides to the action of the air, and thus cause the greatest amount of evaporation possible. The lower ends of the sheets or pads are made rounding to fit

within the rounding bottoms of the vessels and take any water that may be in the pan.

As the water in the pans evaporates it is necessary that it be renewed or replenished, which
 5 can be done by opening the front portion of the register and lifting them out and filling them from any source of supply, as a bucket or other vessel; or the frames may be pivotally or otherwise secured to or within the register,
 10 so that they can be swung out to be filled, which also permits of their being placed closer together in the draft or moved to one side out of the draft from the flue. To do this the frame 13, in which the slats 14 are pivoted, is
 15 hinged at one side to the outer frame 15 of the register and provided with a latch 16 at the other side, so that it can be opened and closed whenever desired and the pans lifted out for cleaning and refilling. The ordinary
 20 fret-work in the front portion of the register conceals the slats and the pans and the pads behind them.

To adapt the device for use with a floor-register, I provide the outer frame 15 with
 25 hangers 17 and suspend the frame 8 below it by means of the hangers. The frame 8 is substantially circular in outline to correspond with the shape of the register, and has the perforated ears 18 for attaching the frame to
 30 the ends of the hangers. The pans in the frame are substantially the same shape as described for the other style of register, except the central ones are larger than the outer ones. They are each provided with an up-
 35 right and cross-arm, on which the evaporating-pad is suspended. The hangers are of such a length that the tops of the cross-arms and pads are just below the slats in the register, so as not to interfere with them.

40 By the use of my improved attachment as

above described—that is, in grouping the pans side by side and arranging these groups one above the other they are so evenly distributed throughout the whole register that there is no chance for any of the air to pass
 45 into the room unvaporized. The number of pans and pads can be varied to suit the size of register in which they are to be placed, the larger registers requiring a greater number of
 50 pans.

Having described my invention, what I claim is—

1. In an attachment for hot-air registers, the combination, with the removable frame, of the pans for holding water supported
 55 therein, the uprights 5, the cross-arms 6, secured to said uprights, and the hooks 7 for holding a moistening-pad, substantially as specified.

2. In an attachment for hot-air registers, 60 the removable pans for holding water in combination with an upright in each pan, a cross-bar on the uprights, hooks on the outer ends of the cross-arms, and moistening-pads 7, secured on said hooks and arranged in the pans,
 65 substantially as specified.

3. In an attachment for hot-air registers, the combination, with oval-shaped pans arranged between the register and the flue, with their longer axes parallel with the current of
 70 air, of pads suspended above the pans edge-wise to the current of air, substantially as described.

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

WILLIAM ROBERT RENALDS.

Witnesses:

T. E. TURPIN,
 C. H. RAEDER.