

(No Model.)

2 Sheets—Sheet 1.

W. H. THOMAS & E. M. ROBERTS.
SAND DRIER

No. 368,500.

Patented Aug. 16, 1887.

Fig. 1.

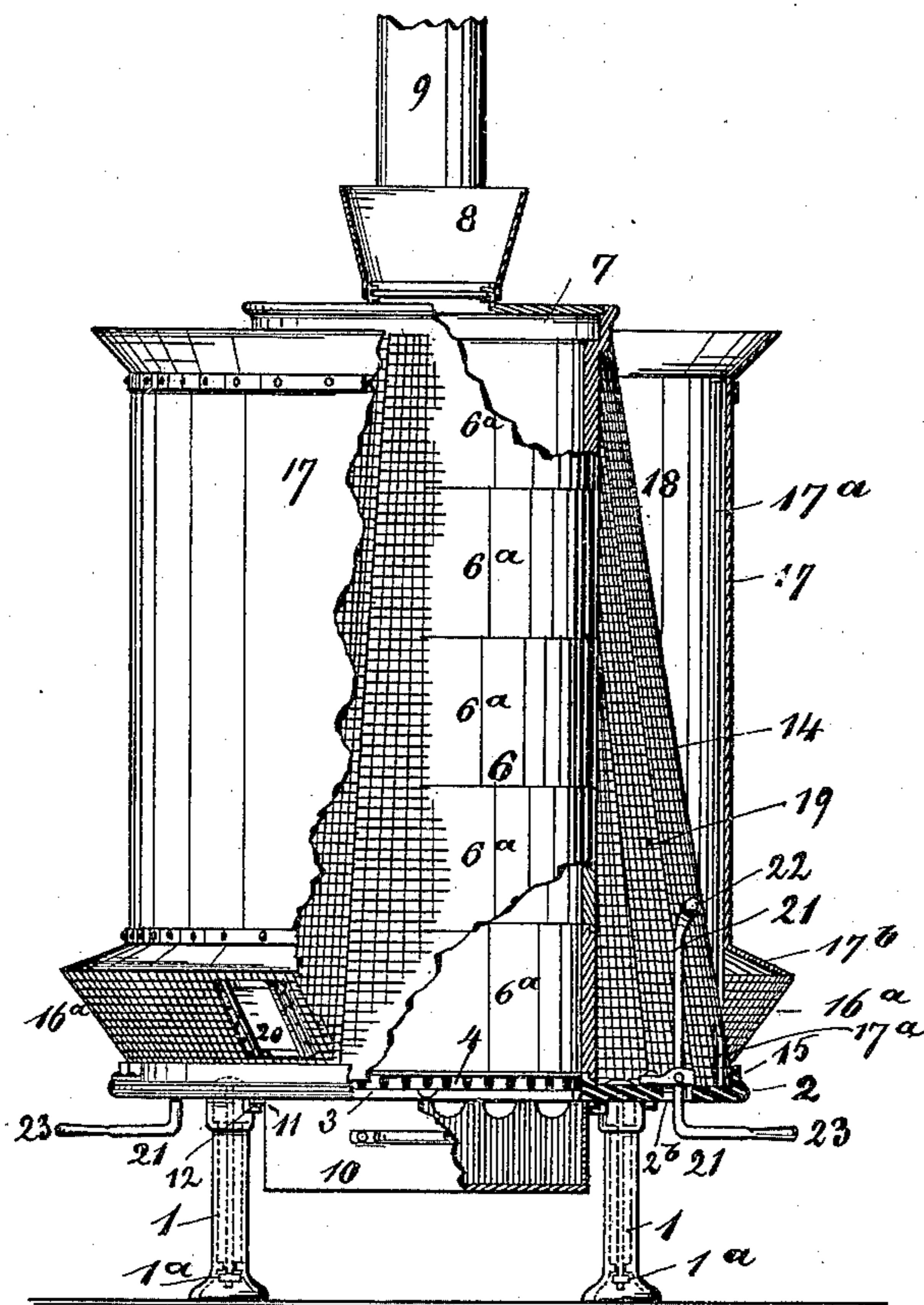
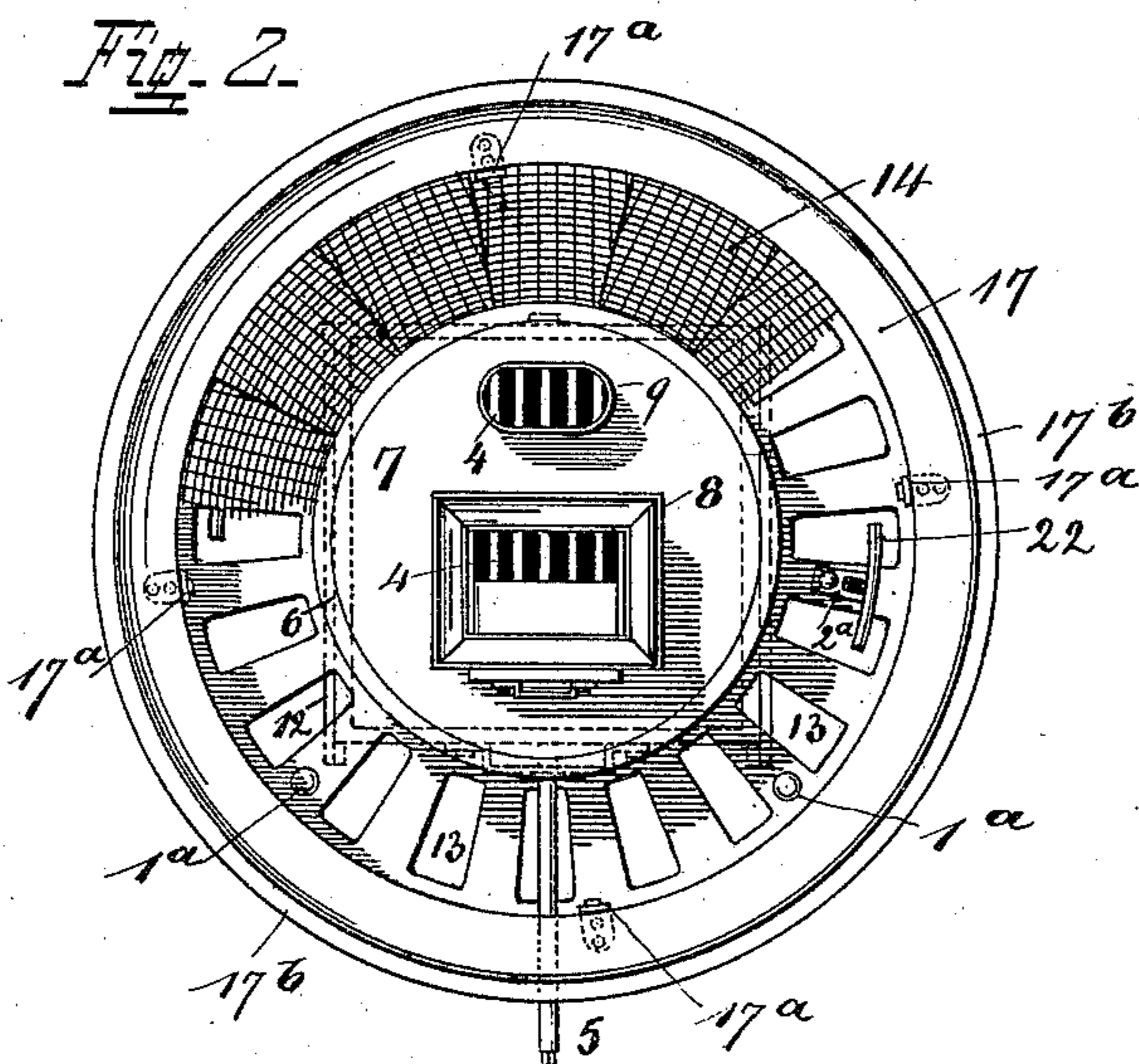


Fig. 2.



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by *Knight Bros* Attys.

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2 Sheets—Sheet 2.

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Fig. 3.

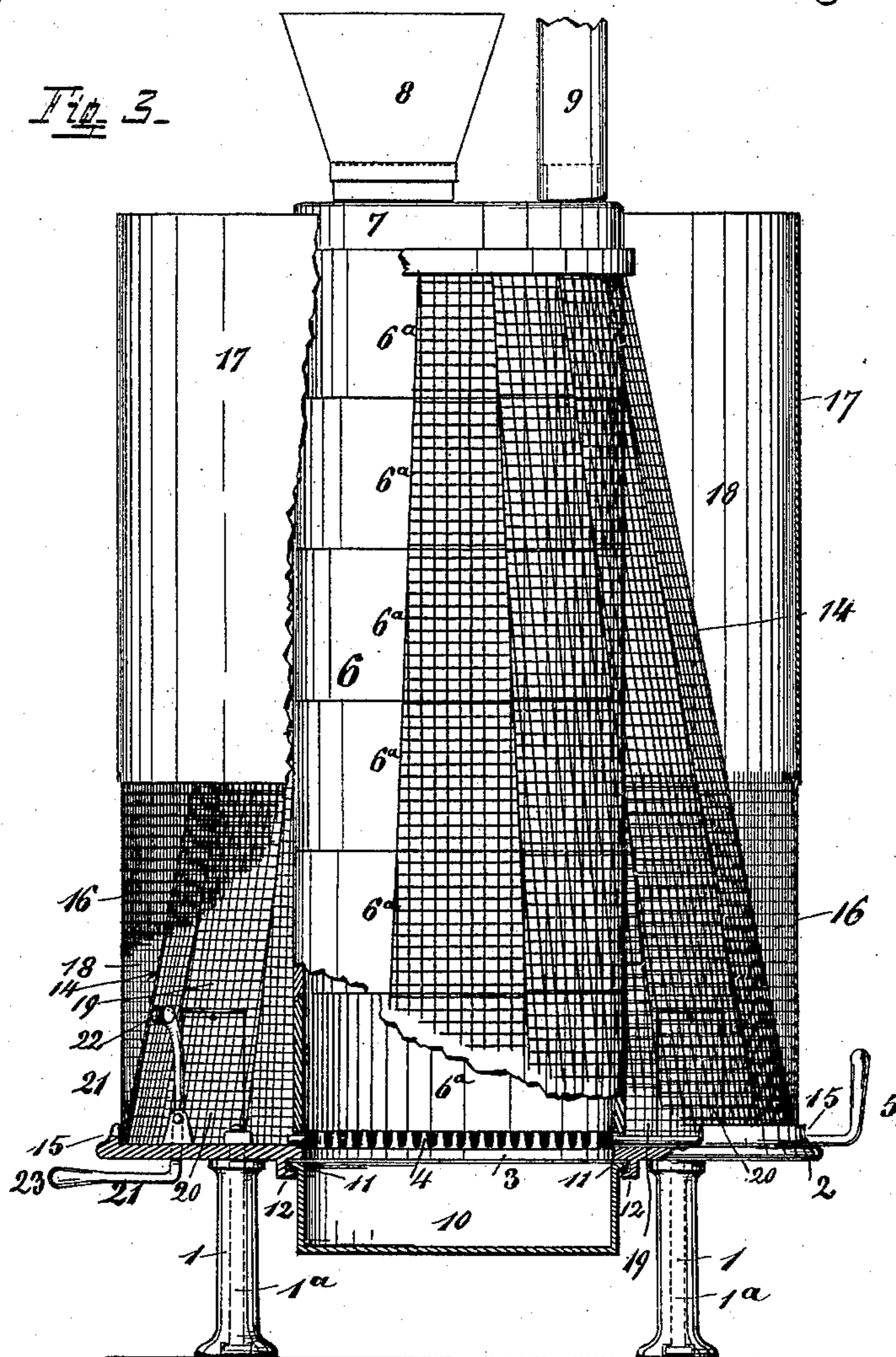
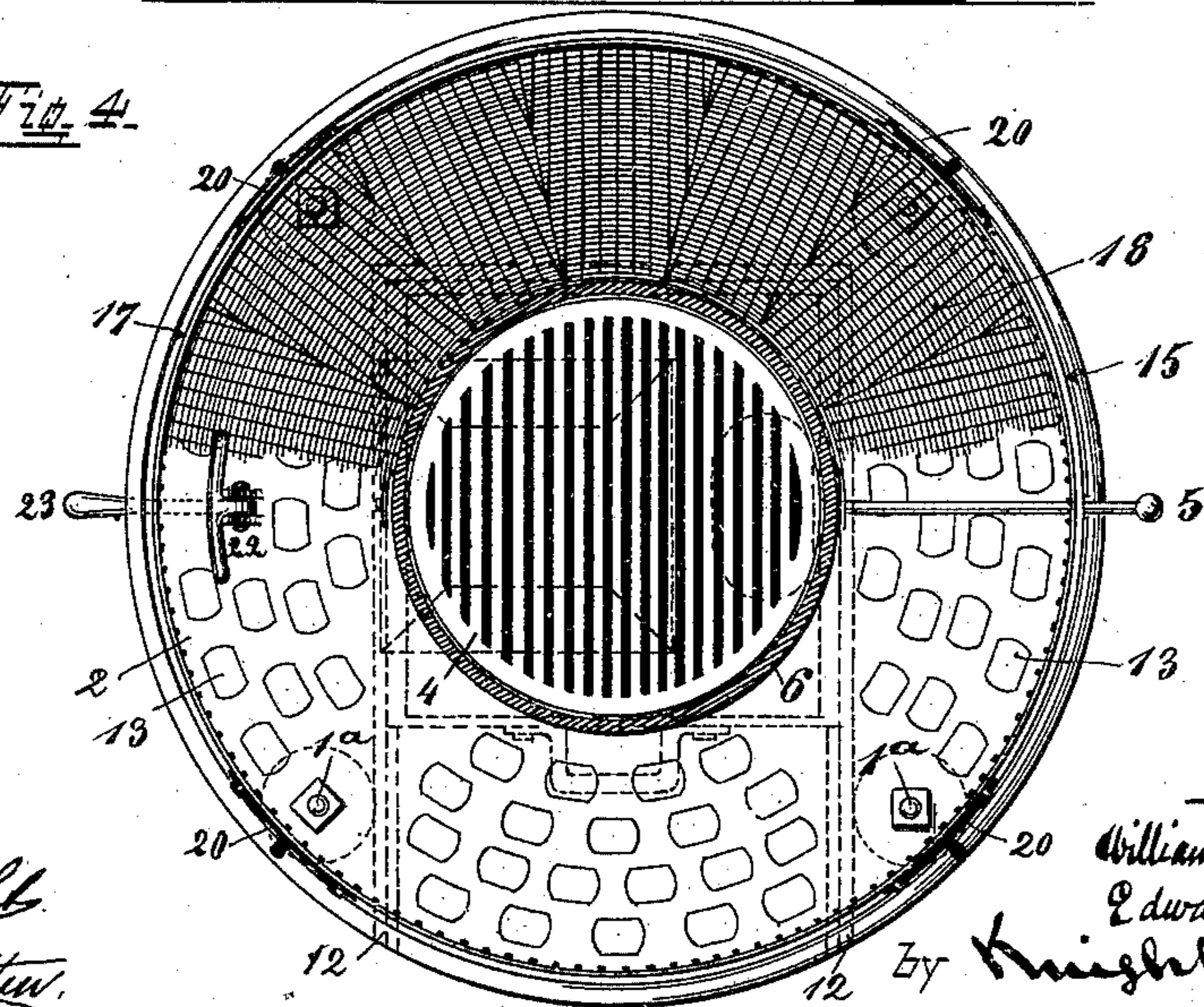


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. THOMAS, OF KNOXVILLE, TENNESSEE, AND EDWARD M. ROBERTS, OF ASHLAND, KENTUCKY; SAID THOMAS ASSIGNOR TO SAID ROBERTS.

SAND-DRIER.

SPECIFICATION forming part of Letters Patent No. 368,500, dated August 16, 1887.

Application filed December 13, 1886. Serial No. 231,430. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. THOMAS, of Knoxville, Knox county, Tennessee, and EDWARD M. ROBERTS, of Ashland, Boyd county, Kentucky, have jointly invented a new and useful Improvement in Sand-Driers, of which the following is a specification.

Our invention relates to a construction of stove for drying the sand used to secure traction on railway-tracks, in which the "green" or moist sand, while receiving the full heat of the stove, is guarded from direct contact with the intensely-heated plates thereof, and hence is exempt from the customary liability to become "caked" or vitrified—a liability which in existing devices employed for this purpose makes it impossible for the sand to fall through the screen in the proper friable condition, chokes the meshes of the screen, and burns out the stove.

Our invention further comprises new and useful constructions of screening and agitating devices, which have for their object and effect an exceptionally thorough and expeditious separation of the sand from the coarser particles.

In the accompanying drawings, Figure 1 is a side elevation (portions being shown broken away and in section) of a sand-drier embodying our invention. Fig. 2 shows the same drier by two horizontal sections. Figs. 3 and 4 are similar views of a modification of our invention.

Elevated a suitable distance from the ground on supports 1, and fastened to said supports by means of bolts 1^a, is an annular casting, 2, called by us the "bed-plate." A central orifice, 3, in said bed-plate receives and supports a circular fire-grate, 4, whose construction is preferably such as to be capable of being dumped by any customary device—as, for example, by means of a handle, 5.

Resting centrally upon the bed-plate 3 is our stove proper, 6, whose body is composed of a stack of cylindrical rings, 6^a, surmounted by a crown-plate, 7, provided with customary feed-opening, 8, and smoke-pipe 9. That portion of the bed-plate 2 which extends outside of the stove-body has perforations 13 for es-

cape of the sand which has dropped through a screen, 14, which rises in conical form from the outer edge of the bed plate 2 to the top of the stove-body.

A cylindrical wall or shell, 17, of sheet-iron of about the diameter of the base of the screen 14, is supported a little distance above the bed-plate by legs 17^a, so as to leave an interval between the bed-plate and said wall. The upper part of this interval is closed by the down-flaring margin 17^b of said wall, and its lower part by an exterior screen, 16, which has the form of an inverted conic frustum.

Doors 20 in the exterior screen, 16, enable the attendant from time to time to remove accumulations of matters whose size has prevented their passage through the screens.

Hinged to lugs 2^a of the bed-plate 2 is a knocker, 21, whose head 22 can be made to strike the screen 14 by pressure of the attendant's foot upon a treadle, 23, that extends through a slot in and projects radially beyond the bed-plate.

The screens 14 and 16 are composed of woven iron wire, preferably of No. 14 gage, woven into a three by three standard mesh.

The annular chamber 18, formed by the sieves 14 and 16 and the wall 17 17^b, constitutes a foraminous hopper, in which the green sand is subjected to the heat radiating from the stove-walls without allowing direct contact of the sand with said walls. The sand is thus protected from the usual deleterious liability to be caked into vitrified masses, and, reaching the screens in a thoroughly loose and pulverulent condition, all of it escapes through the said screens.

The space 19 between the stove-body and the screen 14 constitutes an annular chamber, through which the stove-heat readily radiates to and permeates the sand confined within the hopper 18 and affords a heated passage-way for the escaping sand.

The sand which drops down the hot passage-way 19 reaches the ground through the orifices 13 in the bed-plate 2, while that which escapes through the meshes of the exterior screen, 16, drops direct to the ground.

The above described preferred form of our

drier may be modified in some particulars. For example, the exterior shell, 17, may be simply cylindrical and may have its lower portion in the form of a screen, as represented in Figs. 3 and 4.

In comparison with vertical screens, screens in the form of a cone, as here represented, possess the obvious advantage of a freer delivery.

10 We claim as of our invention in a sand-drier—

1. The combination, with a central stove or heater and a perforated base-plate on which it rests, of a conical screen surrounding the heater, the said screen so resting upon the
15 base-plate as to inclose its perforated portions, and an encircling wall or shell in which said screen is inclosed, substantially as and for the purposes set forth.

2. The combination, with a stove or heater,
20 of a surrounding conical screen and a hopper surrounding the latter, substantially as set forth.

3. The combination, with a stove or heater surrounded by a screen in the form of a frustum of a cone, of the following parts, to wit:
25 an inclosing-shell having supporting-legs, a perforated base-plate on which the above rest, and a screen situated between the bottom of the inclosing-wall and the base-plate and provided with doors, substantially as set forth.
30

4. The combination, with a stove or heater and a conical screen surrounding it, of an inclosing-shell having supporting-legs, a perforated base-plate on which the above rest, an outturned flange at the base of the inclosing-shell, and an annular screen situated between the outer edge of said flange and said base-plate and being provided with doors, substantially as set forth. 35

5. The combination, with the described annular concentric sectional inner and an outer wall, of a conical screen between them (base downward) and a fire-grate below the inner annular wall, substantially as set forth. 40

6. The combination, with the supporting perforated plate, the conical screen, the inner stove, and the outer shell or wall, of a knocker pivoted to the perforated plate, having a treadle for operating it and bringing it against the conical screen, substantially as set forth. 45 50

In testimony of which invention we hereunto set our hands.

WILLIAM H. THOMAS.
EDWARD M. ROBERTS.

Attest to signature of Wm. H. Thomas:

DANL. KELLY,
A. BAUER.

Attest to signature of Edward M. Roberts:

M. H. HOUSTON,
JOHN RUSSELL, Jr.