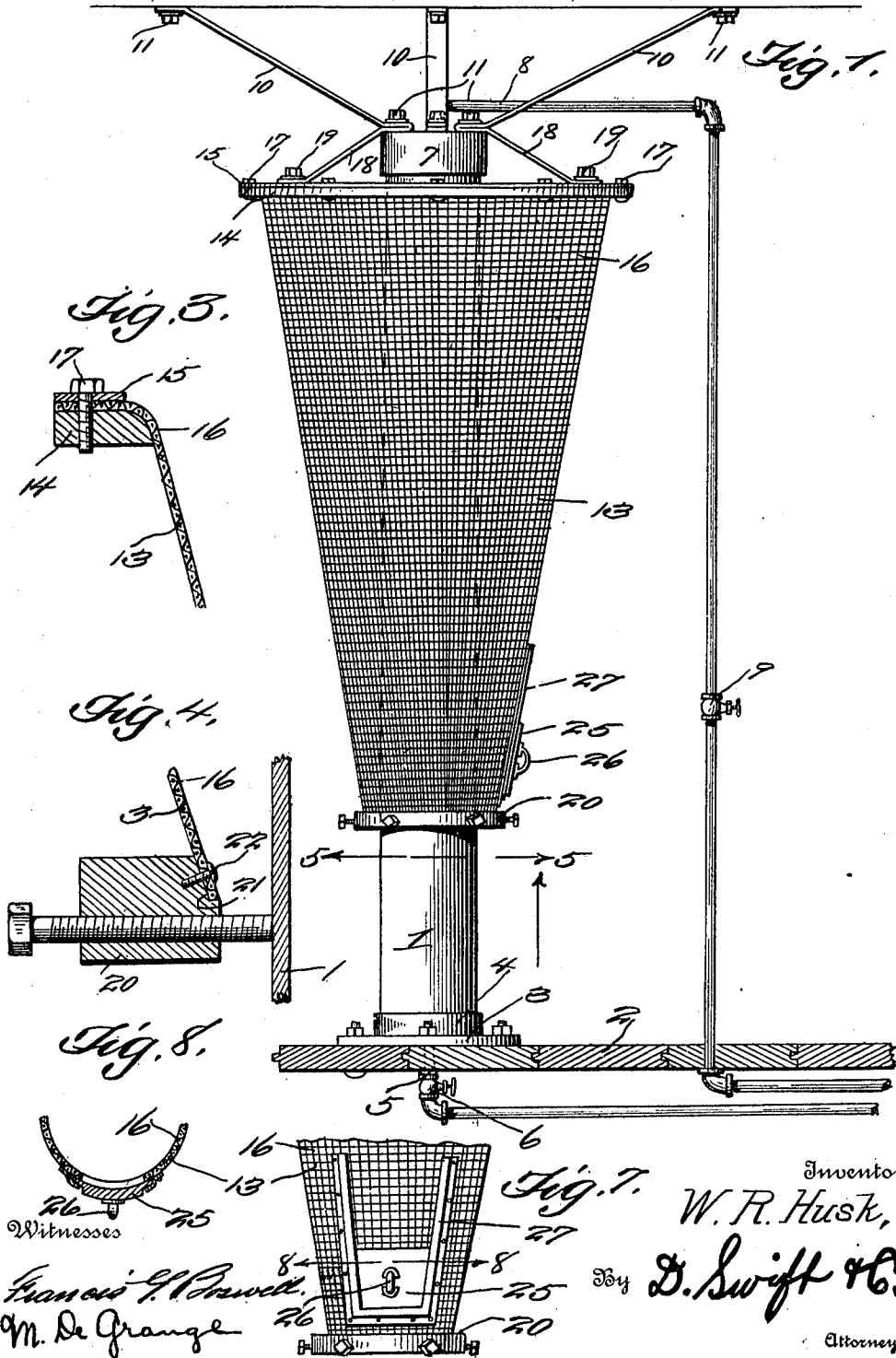


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APPLICATION FILED JULY 13, 1910.

980,271.

Patented Jan. 3, 1911.

2 SHEETS—SHEET 1.

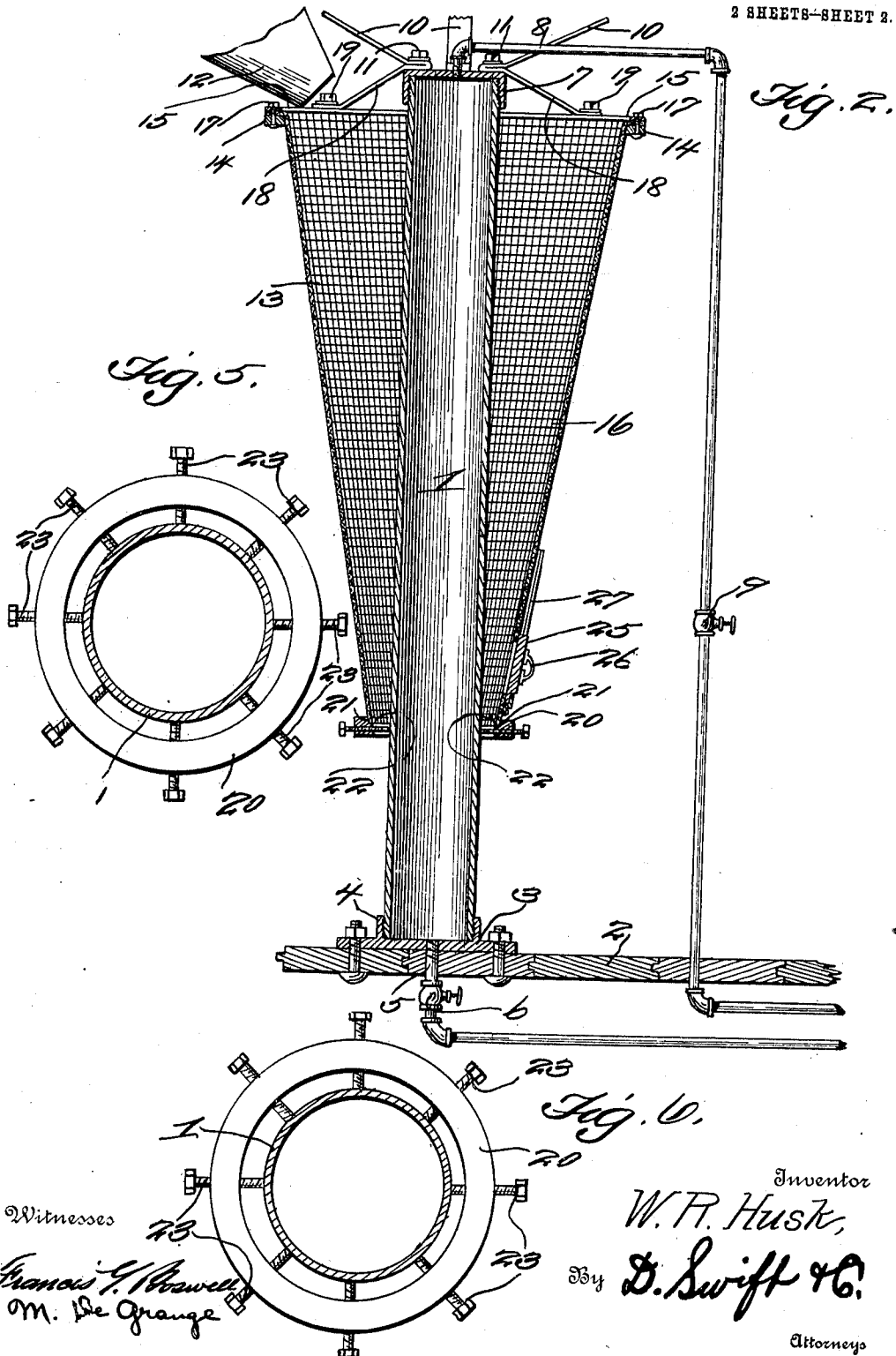


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Witnesses

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STEAM SAND-DRIER.

980,271.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed July 13, 1910. Serial No. 571,822.

To all whom it may concern:

Be it known that I, WILLIAM R. HUSK, a citizen of the United States, residing at Richwood, in the county of Nicholas and State of West Virginia, have invented a new and useful Steam Sand-Drier; and I do hereby 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.

This invention belongs to the art of driers, and particularly pertains to a new and useful steam sand drier, in which a steam dome is employed having steam inlet and outlet pipes entering above and leaving below the steam dome, and surrounding the dome is a conical mesh work cylinder, through which the sand passes while it is being dried.

A primary object of the invention is to provide means for supporting the lower end of the cylinder, in such wise as to adjust, in order to restrict or increase certain portions of the annular opening between the lower end of the cylinder, for instance, the inner circumference thereof, and the outer circumference of the dome, whereby the sand may be allowed to flow. The inner circumference of the cylinder may be held equally spaced apart annularly from the outer circumference of the steam dome.

Another feature of the invention is the production of means for supporting the upper larger end of the cylinder, with regard to the hopper.

In this specification and the annexed drawings, a particular design of device is adhered to, but the invention is not to be confined to this specific design.

The device in its actual reduction to practice may necessitate changes and variations, the right thereto belongs to the applicant, provided such changes and variations are comprehended by the appended claims.

Referring to the drawings:—Figure 1 is a side elevation of an improved sand drier, embodying the essential construction of the invention. Fig. 2 is a vertical sectional view of the sand drier. Fig. 3 is an enlarged detail sectional view of the upper portion of the drier. Fig. 4 is an enlarged detail sectional view of a portion of the larger part of the drier. Fig. 5 is an enlarged sectional view on line 5—5 of Fig. 1, showing the manner of supporting and adjusting the lower part of the cylinder with

regard to the steam dome or drum. Fig. 6 is a view similar to Fig. 5 showing the lower portion of the cylinder adjusted in a different position from that in Fig. 5. Fig. 7 is a detail elevation of the lower part of the cylinder showing the sliding door, whereby access to the interior of the cylinder may be had. Fig. 8 is a detail sectional view on line 8—8 of Fig. 7.

As to the accompanying drawings, 1 denotes the steam dome or drum, which is vertically supported upon the floor 2 of any suitable architectural structure. The lower end of the dome or drum is closed by the flanged plate 3, the annular flange 4 of which receives and supports the dome or drum in a vertical position. The plate 3 is secured to the flooring, and extending from this plate is the outlet steam pipe 5, which is provided with the usual trap valve 6, which may be manipulated to draw off the steam from the dome or drum.

The upper end of the dome or drum is covered by the flanged closure or cap 7. Threaded into the closure or cap is the steam inlet pipe 8, by which steam is allowed to pass into the drum or dome, there being a suitable valve 9 located in this pipe, whereby the inlet of steam may be readily controlled.

The upper portion of the dome or drum is suitably supported and braced with regard to the walls and ceiling of the architectural structure, by means of the brace bars or members 10. These brace bars or members are slightly angled at their ends, so that they may be readily secured to the ceiling of the structure and the closure or cap, by means of bolts or other means 11.

12 represents the usual form of hopper, in which the sand to be dried is placed, and from which the sand leaves, in order to enter the mesh work conical shaped cylinder 13, which surrounds steam dome or drum. This mesh work cylinder at its upper periphery comprises a pair of annular rings 14 and 15, the thicker ring 14 being below, and between which rings the upper periphery or flanged portion of the 6x6 number 12 screen mesh 16, is secured, by means of the bolts 17. These rings are braced and supported with regard to the closure or cap and the upper portion of the steam dome or drum, by means of the bars or members 18, which are bolted to the rings and the closure or cap by means of the bolts 19.

20 represents an annular ring, which is located at the lower portion of the cylinder, and is provided with an annular recess 21, in which the lower periphery of the screen mesh is secured, by means of the screws or bolts 22.

Penetrating transversely of and located at equal distances apart, and annularly about the ring 20 are a plurality of screw bolts 23, the inner ends of which are designed to engage the outer circumference of the steam dome or drum, in order to support the lower portion of the cylinder with regard to the steam dome or drum. It will be readily observed, that by means of these screw bolts, the inner circumference of the cylinder and the ring 20 may be held equally spaced apart annularly from the outer circumference of the steam dome or drum, as in Fig. 5. But, however, as disclosed in Fig. 6, several of the screw bolts extend farther through the ring 20 than others upon the opposite side of the dome or drum, in order that the annular opening or space may be restricted or increased at certain locations, so that the sand may flow more readily at one point than the other, and vice versa.

In order that access may be obtained, to the interior of the cylinder, a sliding door 25 is provided, there being a suitable handle 26 whereby the door may be raised or lowered. This door 25 is mounted in suitable guides 27 of the screen mesh adjacent the lower portion of the cylinder.

In practice steam received from any suitable source enters the steam dome or drum through the pipe 8 (while the trap valve 6 of the pipe 5 is closed) until the steam heat from the dome or drum reaches the desired temperature, then the valve 9 of the pipe 8 is closed. At this stage the sand from the hopper enters the cylinder and is properly dried by the steam heat from the dome or drum, as it passes through and leaves the cylinder. If the steam in the dome or drum is too great, the trap valve 6 may be opened, in order to draw off certain portion of the steam therein. If the sand in the cylinder becomes clogged, the screw bolts of the ring 20, may be so manipulated as to restrict or increase the annular opening or space between the ring 20 and the drum, at the point where the sand is cloggy. If the clogging effect can not be relieved by this method, the sliding door may be raised, in order that the sand may be loosened from the interior of the cylinder.

The invention having been set forth, what is claimed as new and useful is:—

1. In a sand drier, the combination of a steam dome or drum and a surrounding mesh work cylinder, of means for supporting and adjusting the lower portion of the cylinder with regard to the dome or drum.

2. In a sand drier, a vertically arranged steam dome or drum, a conical shaped mesh work cylinder surrounding the same, means for supporting the upper portion of the cylinder, and means for supporting and adjusting the lower portion of the cylinder with regard to the outer circumference of the dome or drum.

3. In a sand drier, a vertically arranged steam dome or drum, a conical shaped mesh work cylinder surrounding the same, means for supporting the upper portion of the cylinder, and means for supporting and adjusting the lower portion of the cylinder with regard to the outer circumference of the dome or drum, and steam inlet and outlet pipes for the drum having valves for controlling the inlet and outlet of the steam.

4. In a sand drier, a vertically arranged steam dome or drum, a conical shaped mesh work cylinder surrounding the same, means for supporting the upper portion of the cylinder, and means for supporting and adjusting the lower portion of the cylinder with regard to the outer circumference of the dome or drum, said cylinder having a sliding door in its circumference adjacent its lower portion.

5. In a sand drier, a vertically arranged steam dome or drum, a conical shaped mesh work cylinder surrounding the same, means for supporting the upper portion of the cylinder, and means for supporting and adjusting the lower portion of the cylinder with regard to the outer circumference of the dome or drum, said cylinder having a sliding door in its circumference adjacent its lower portion, and steam inlet and outlet pipes for the dome or drum having valves to control the inlet and outlet of steam.

6. In a sand drier, a vertically arranged steam dome or drum, a supported mesh work cylinder surrounding the same and provided at its lower portion with an annular ring, there being an annular space between the inner circumference of the ring and the outer circumference of the dome or drum, means carried by the ring and designed to engage the outer circumference of the dome or drum, whereby said annular space may be restricted or increased at certain points.

7. In a sand drier, a vertically arranged steam dome or drum, a supported mesh work cylinder surrounding the same and provided at its lower portion with an annular ring, there being an annular space between the inner circumference of the ring and the outer circumference of the dome or drum, means carried by the ring and designed to engage the outer circumference of the dome or drum, whereby said annular space may be restricted or increased at certain points, said cylinder having a sliding door in its circumference adjacent its lower portion.

8. In a sand drier, a vertically arranged

steam dome or drum, a supported mesh work
cylinder surrounding the same and provided
at its lower portion with an annular ring,
there being an annular space between the
5 inner circumference of the ring and the
outer circumference of the dome or drum,
means carried by the ring and designed to
engage the outer circumference of the dome
or drum, whereby said annular space may be
10 restricted or increased at certain points, said
cylinder having a sliding door in its circum-

ference adjacent its lower portion, and steam
inlet and outlet pipes for the dome or drum
having valves to control the inlet and outlet
of steam.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

15

WILLIAM R. HUSK.

Witnesses:

HARRY L. BARUCKMAN,
MARK HAMILTON.