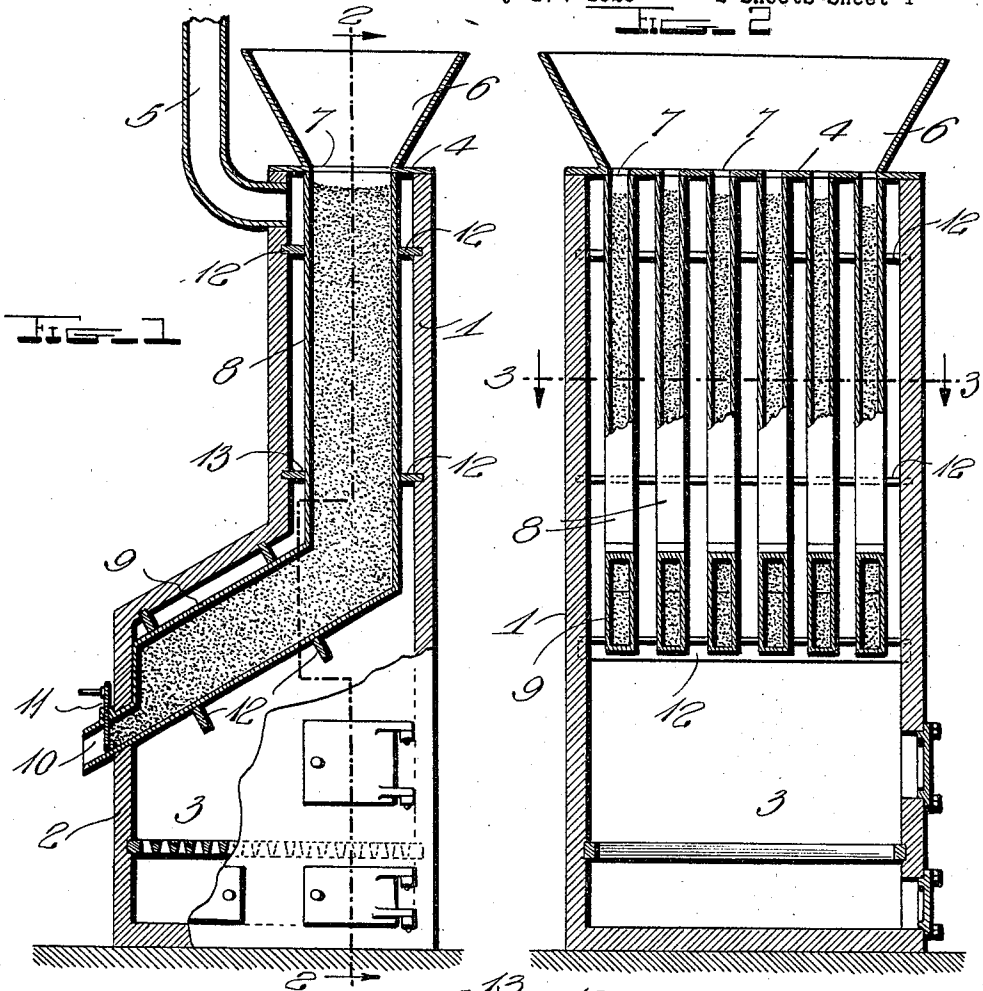
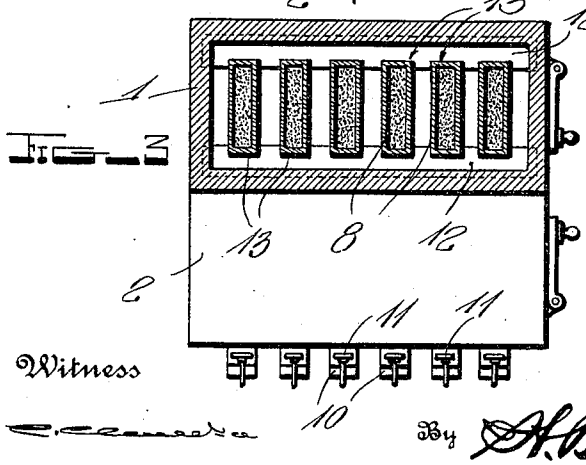
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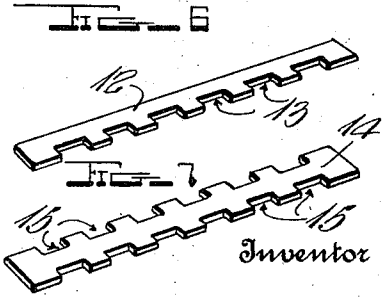
R. N. CHAPMAN

SAND DRIER

Filed May 17, 1923 2 Sheets-Sheet 1







Witness

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Robert N. Chapman

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May 6, 1924. 1,492,834

R. N. CHAPMAN

SAND DRIER

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Fig. 4

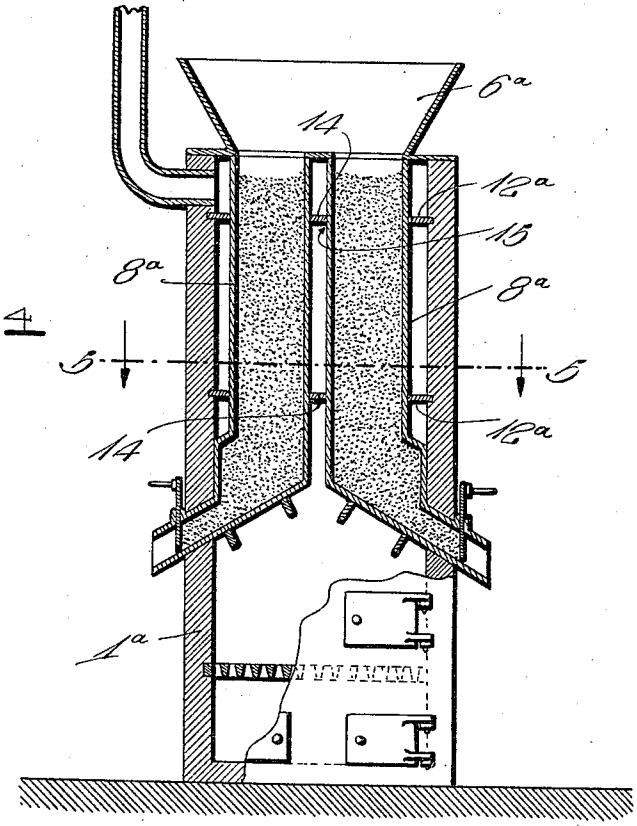
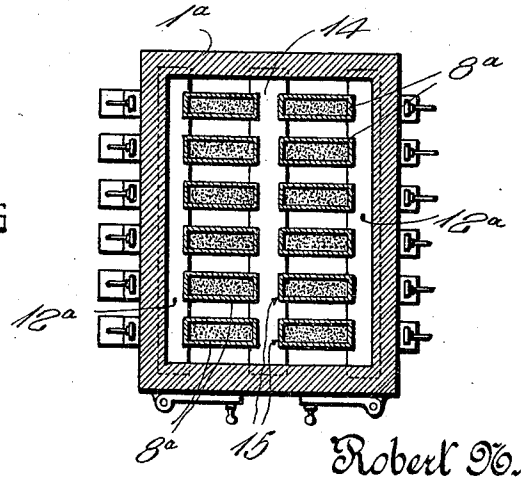


Fig. 5



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Patented May 6, 1924. 1,492,834

UNITED STATES PATENT OFFICE.

ROBERT N. CHAPMAN, OF DUBLIN, GEORGIA.

SAND DRIER.

Application filed May 17, 1923. Serial No. 639,601.

To all whom it may concern:

Be it known that I, ROBERT N. CHAPMAN, a citizen of the United States, residing at Dublin, in the county of Laurens and State of Georgia, have invented certain new and useful Improvements in Sand Driers; 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 improvements in driers for sand and any other granular material, it being the object of the invention to provide an extremely simple and inexpensive drier of this character, in which a plurality of tubes for conducting the material to be dried, are mounted in a novel manner, in an upright heat chamber.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawings.

Figure 1 is a vertical sectional view of one form of drier constructed in accordance with my invention.

Figure 2 is a sectional view partly in elevation as indicated by line 2—2 of Fig. 1.

Figure 3 is a horizontal sectional view on line 3—3 of Fig. 2.

Figure 4 is a view similar to Fig. 1 but showing a different form of construction.

Figure 5 is a horizontal sectional view on line 5—5 of Fig. 4.

Figures 6 and 7 are perspective views of the spacing bars used to hold the sand tubes in proper relation.

In the construction shown in Figs. 1, 2 and 3, the numeral 1 designates a vertically elongated housing built up of bricks or other masonry and having an enlarged lower end 2 containing an appropriate fire-box 3. The upper end of the housing 1 is closed, for instance by a plate 4, but is provided with an appropriate smoke stack 5. The plate 4 supports a sand hopper 6 and is provided with a plurality of sand discharge slots 7 which register with the upper ends of flat L-shaped sand tubes 8. These tubes are mounted in the housing 1 in spaced relation with each other and with the walls of said housing and their lateral ends 9 decline in the enlarged lower end 2 of the housing, said declined ends being provided with appropriate outlet spouts 10 which may well have cut-off gates 11.

To hold the sand tubes 8 in proper relation, I have provided a plurality of horizontal spacing bars 12 which extend transversely across the edges of said tubes and are provided with notches 13 receiving said edges. The bars 12 are suitably anchored in the masonry of which the housing 1 is constructed and while any suitable number of said bars may be used, I prefer to dispose two at the upper ends of the tubes 8, two at the lower extremities of said tubes adjacent the spouts 10, two adjacent the lower ends of the vertical portions of the tubes, and two at the upper ends of the declined portions. By this arrangement or an equivalent arrangement, the numerous tubes are held in proper spaced relation so that the heat from the fire-box 3 may circulate entirely around said tubes to effectively dry the sand or other material which is discharged downwardly therethrough, from the hopper 6.

In Figs. 4 and 5, I have illustrated a dual form of the invention, in which the housing 1^a may be of uniform size throughout its height. Within this housing, two series of sand tubes 8^a are mounted in communication with the hopper 6^a, the outer edges of the tubes 8^a being engaged with the bars 12^a which are duplicates of the bars 12, while the inner edges of said tubes are held in spaced relation by additional horizontal bars 14 disposed between the two series of tubes and having notches 15 in their opposite edges, receiving the inner edges of the tubes.

Either form of my invention is simple and inexpensive and may be easily constructed, yet will be highly efficient and desirable. As excellent results may be obtained from the details disclosed, these details are preferably followed, but within the scope of the invention as claimed, numerous minor changes may be made. Also, it will be understood that the device is not restricted to drying sand, but is usable for numerous other purposes.

I claim:

1. A drier comprising a vertically elongated housing provided at its lower end with heat supply means, a hopper at the upper end of said housing, a plurality of L-shaped substantially flat tubes disposed in

spaced relation within said housing with their lower ends discharging at the exterior of the latter, and a plurality of spacing bars anchored in the side wall of said housing and extending horizontally across the latter, said bars having notches receiving opposed portions of said tubes to hold the latter in spaced relation.

2. A structure as specified in claim 1; certain of said notched bars being engaged with the vertical portions of said tubes while at least one of said bars extends under the lateral ends of said tubes to support the latter.

3. A drier comprising a vertically elongated housing provided at its lower end with heat supply means and having a hopper at its upper end, two series of substantially flat L-shaped tubes communicating with said hopper and disposed within said housing with their lower ends discharging through the wall of the latter, notched bars between the outer edges of the tubes and the housing wall receiving said edges in their notches, and additional notched bars between the two series of tubes notched on both edges to receive the inner edges of said tubes.

4. A drier comprising an upright housing having heat supply means at its lower end and a hopper at its upper end, and a plurality of substantially flat L-shaped tubes mounted vertically in said housing in closely spaced relation with each other, the upper ends of said tubes being in communication with said hopper, the lower portions of said tubes being declined from the vertical portions of said tubes and extending through the housing wall.

In testimony whereof I have hereunto affixed my signature.

ROBERT N. CHAPMAN.