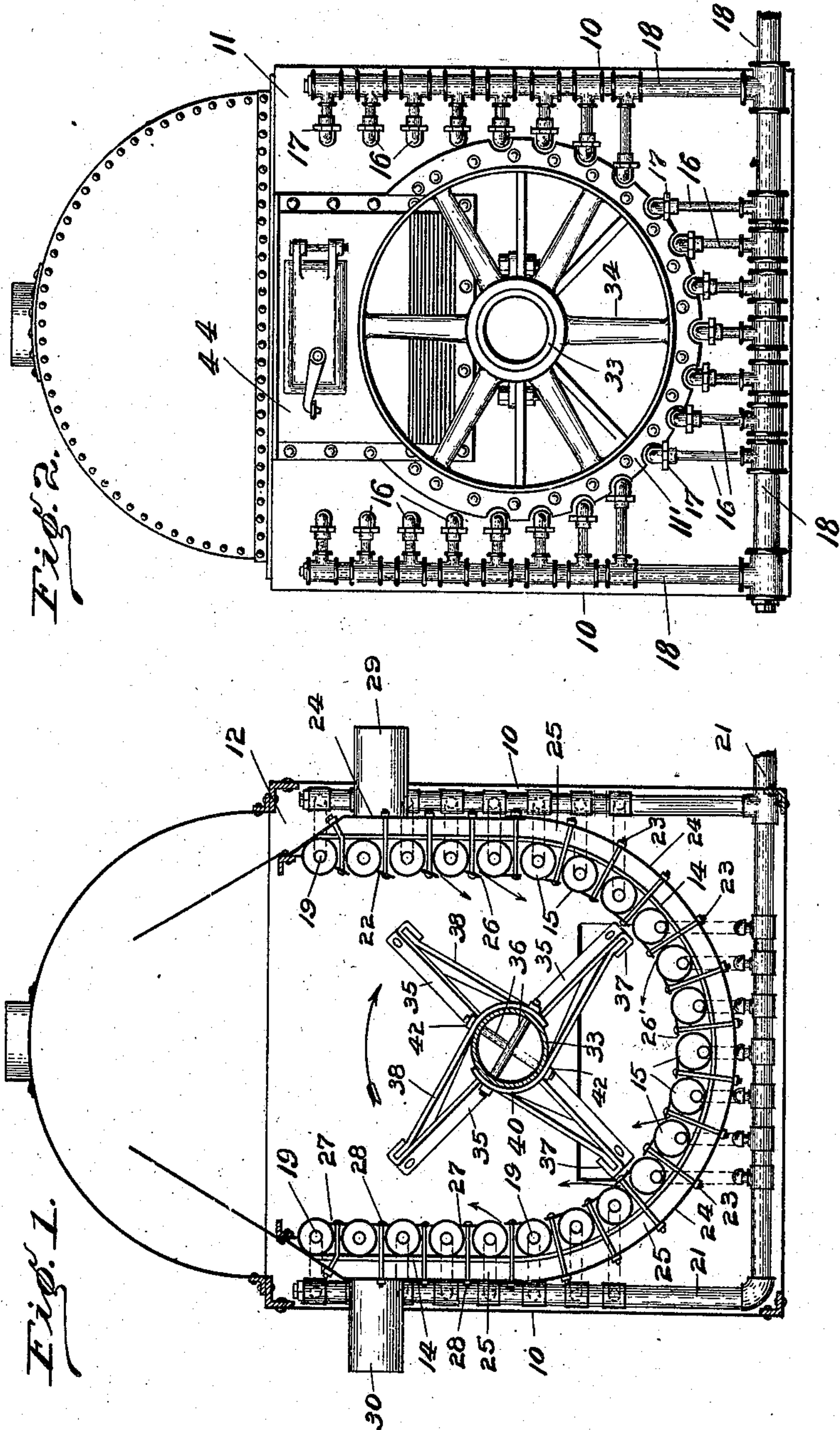


No. 840,543.

PATENTED JAN. 8, 1907.

F. G. WISELOGEL.  
SECTIONAL DRIER.  
APPLICATION FILED OCT. 8, 1906.

2 SHEETS—SHEET 1.



Witnesses  
Frank A. Fable  
Thomas W. McMeans

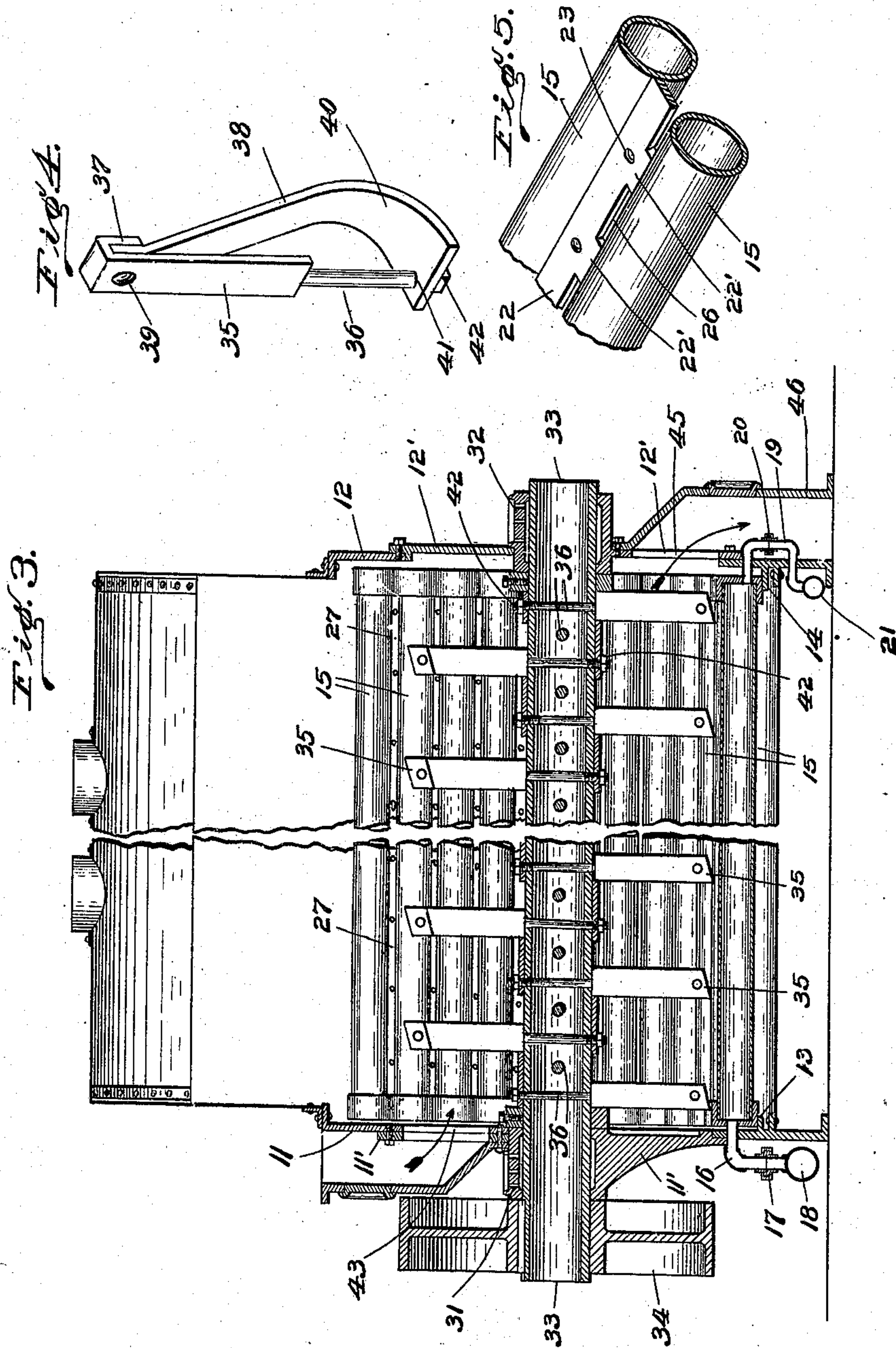
BY  
Frederick G. Wiselugel  
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# UNITED STATES PATENT OFFICE.

FREDERICK G. WISELOGEL, OF INDIANAPOLIS, INDIANA.

## SECTIONAL DRIER.

No. 840,543.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed October 8, 1906. Serial No. 338,068.

*To all whom it may concern:*

Be it known that I, FREDERICK G. WISELOGEL, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Sectional Driers, of which the following is a specification.

In the drying of many substances—such, for instance, as the refuse from slaughter-houses, garbage, and other materials in which there is a large amount of moisture—difficulty is experienced by reason of the corrosive action of the material being dried, which results in a rapid deterioration of the inner lining of the drier, so that the cost of repairs and maintenance of such a machine is very considerable.

The object of my invention is to provide a construction in which the active heating-surface shall be composed of a plurality of pipes individually and removably held in position by such means that different portions of each pipe may be successively exposed, so that after one portion of a pipe has been exposed to the corrosive action of the drying material this portion may be withdrawn from such action and another portion exposed.

Further objects of my invention are to provide a construction in which individual tubes may be readily removed and renewed without disturbing the remaining tubes, to provide means for allowing an active circulation of heated air through the drying mass, to provide an improved form of flight for the stirring-shaft, and to provide such improvements in details of construction as may be hereinafter pointed out.

The accompanying drawings illustrate my invention.

Figure 1 is a transverse vertical section; Fig. 2, an elevation of the receiving end; Fig. 3, a longitudinal section; Fig. 4, a perspective view of my improved flight, and Fig. 5 a perspective detail of one of the diaphragms between two adjacent pipes.

The drier consists of a body or casing composed of a pair of sides 10 and a pair of ends 11 and 12, the receiving end 11 being provided with a central opening closed by a detachable plate 11', while the discharge end 12 is also provided with a central opening covered by a detachable plate 12'. Formed

on the inside of plate 11 is a U-shaped rib or flange 13, and similarly formed on the inside of plate 12 is a corresponding U-shaped flange 14, said flanges forming supports for the ends of a plurality of steam-pipes 15, capped at each end. The steam-receiving ends of the tubes 15 are at the discharge end of the drier, so that the greatest heat is at the point where the material is the driest—immediately before discharge. Threaded or otherwise secured into the receiving end of each pipe 15 is a steam-induction pipe 16, connected by any suitable separable connection, such as a union 17 and suitable piping, with a supply-main 18, the pipe 16 being removable from the pipe 15 upon separation of the union 17.

Threaded or otherwise secured into the discharge end of each pipe 15 is a discharge-pipe 19, connected by a suitable union 20 with a discharge-main 21. Beginning with the top pipe on one arm of the U (formed by the series of pipes 15) and ending at the point about half-way up the other arm of the U, as clearly shown in Fig. 1, the space between each pair of pipes 15 is bridged by a plate 22, the forward edge of which is provided with a plurality of fingers 22', while the rear edge is straight. This bridge-piece 22 therefore rests with its rear edge against one pipe, and the ends of its fingers 22' against the next adjacent pipe and is clamped in this position by means of suitable bolts 23, which pass outward through a sheathing 24, which extends around the series of piping at some distance therefrom, so as to form a U-shaped air-chamber 25. The bridge-pieces 22 thus formed consequently produce slots 26, leading from the air-space 25 into the interior of the chamber formed within the U of pipes 15, and the bridge-pieces also serve to properly space the pipes 15 and clamp them in position upon the U-shaped flanges 13 and 14. Beginning at the next pair of pipes beyond the last plate 22 the space between the remaining pipes are bridged by solid bridge-pieces 27, held in place by bolts 28. Leading into the upper end of chamber 25, adjacent the upper end of the series of pipes 15, bridged by the bridge-pieces 22, is an air-inlet duct 29, which leads from any suitable supply of air, preferably hot, and leading from the opposite end of



said chamber is a discharge-pipe 30, the pipe 29 being connected to a suitable blast device by means of which a constant current of air may be maintained through the chamber.

5 Plate 11' is provided with a bearing 31 and plate 12' with a bearing 32, in which bearings is journaled a conveyer-shaft 33, preferably hollow, to one end of which is secured a suitable driving-pulley 34. Conveyer-shaft 33  
10 may be provided with any suitable conveyer flight; but for the sake of strength and in order to thoroughly stir the drying material I prefer to use a plurality of paddles, such as that shown in Fig. 4. This paddle consists  
15 of a radial plate 35, provided at its inner end with a bolt 36, which passes radially through the conveyer-shaft and provided at its inner end with an overlapping lip 37, between which and the main body of the plate is inserted the end of a plate 38, the two being  
20 secured together by means of a bolt or pivot 39. Plate 38, at its opposite end, is provided with a curved portion 40, which conforms as nearly as possible to the curvature  
25 of the conveyer-shaft and at its end is provided with a perforation 41, through which bolt 36 is passed through a radial perforation in the conveyer-shaft and the inner end of the plate 36 brought against the shaft. The  
30 plate 38 then has its outer end inserted between lip 37 and the main body of the plate 35, while its inner end is brought to a point where the protruding end of the bolt 36 may be passed through perforation 41, the curved  
35 portion 40 of the plate 38 then hugging the conveyer-shaft. The rivet or bolt 39 is then inserted, and the whole clamped in position by means of the nut 42, screwed upon the protruding end of bolt 36. Plate 11' is provided  
40 with a suitable receiving-opening 43, to which leads a suitable feed-spout 44, and plate 12' is provided with a suitable discharge-opening 45, from which leads a discharge-spout 46.

45 In operation steam is introduced into pipes 15 and a blast of air is sent through chamber 25, a portion of said blast escaping through the slots 26 into the interior of the U formed by the pipes 15 and moving in the direction  
50 of rotation of the conveyer-shaft, as clearly indicated in Fig. 1. The material to be dried is then introduced into the apparatus through opening 43, where it is caught by the conveyer and stirred and fed toward the  
55 discharge-opening. The pressure of air through the slots 26 is sufficient to prevent the material from passing between the pipes, and said air is thoroughly commingled with the material, so that by the time the material  
60 has reached the discharge-opening it has been thoroughly dried.

The drying material corrodes the hot pipes 15 quite rapidly in many cases, and after a

time any individual pipe may be turned so as to present a new surface between adjacent  
65 bridge-plates, and when any pipe has been worn beyond its period of usefulness this pipe may be individually withdrawn and replaced by removing the end plate-caps 11' and 12'.

I claim as my invention—

1. A drier the containing-wall of which is composed of a plurality of independently rotatable pipes.

2. A drier the containing-wall of which is composed of a plurality of independently-  
75 rotatable and separately-removable pipes.

3. A drier the containing-wall of which is composed of a plurality of independently-rotatable and removable pipes, bridge-plates bridging the space between adjacent pipes,  
80 some of said bridge-plates having portions along one edge removed from the adjacent pipe, and a jacket externally embracing said pipes to form an air-chamber outside of said pipes.

4. A drier the containing-wall of which is composed of a plurality of independently-rotatable pipes, bridge-plates bridging the space between said adjacent pipes, some of  
90 said bridge-plates having portions along one edge removed from the adjacent pipe, and a jacket externally embracing said pipes to form an air-chamber outside of said pipes.

5. A drier the containing-wall of which is composed of a plurality of removable heat-  
95 ing-pipes and induction and eduction pipes leading to and from each of said pipes.

6. A drier the containing-wall of which is composed of a plurality of independently-rotatable heating-pipes, and induction and  
100 eduction pipes connected to each of said heating-pipes.

7. A drier, the containing-wall of which is composed of a plurality of independently-rotatable and separately-removable heating-  
105 pipes, and induction and eduction pipes separably connected to each of said heating-pipes.

8. A drier the containing-wall of which is composed of a plurality of independently-rotatable and removable heating-pipes,  
110 bridge-plates bridging the space between adjacent pipes, some of said bridging-plates having portions along one edge removed from the adjacent pipe, a jacket externally embracing said pipes to form an air-chamber  
115 outside of said pipes, and induction and eduction pipes removably connected to said heating-pipes.

9. In a drier, a conveyer-paddle therefor consisting of a plate provided at one end with  
120 a portion to pass through the conveyer-shaft and at the other end provided with an overturned lip, and a brace-plate one end of which is attached to the first plate under the lip and the other end of which is curved to embrace a  
125 portion of the conveyer-shaft and provided



at its inner end with a perforation to receive the protruding end of the first-mentioned plate.

5 10. A drier the container-wall of which is composed of a plurality of pipes and intermediate bridging-strips permitting induction of gases between the pipes, and a casing inclosing the container-wall.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 10 20th day of September, A. D. 1906.

[L. s.]

FREDERICK G. WISELOGEL.

Witnesses:

ARTHUR M. HOOD,

THOMAS W. McMEANS.