

(No Model.)

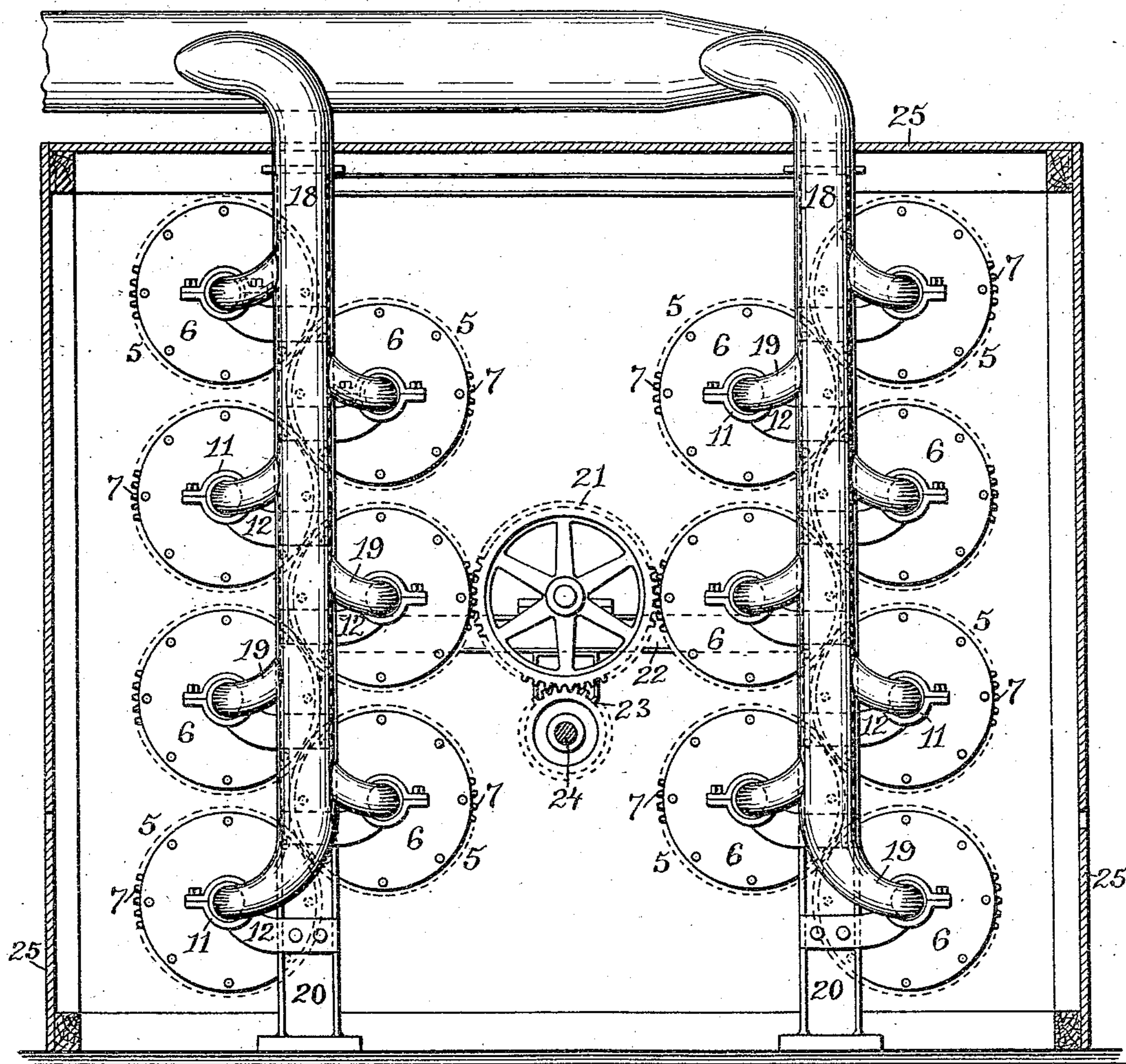
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W. HARTLEY, Jr.  
DRYING MACHINE.

No. 543,578.

Patented July 30, 1895.

Fig. 1.



WITNESSES:

Henry J. Miller  
Chas. H. Luther Jr.

INVENTOR:

William Hartley Jr.  
by Joseph A. Miller & Co.  
Attys.

(No Model.)

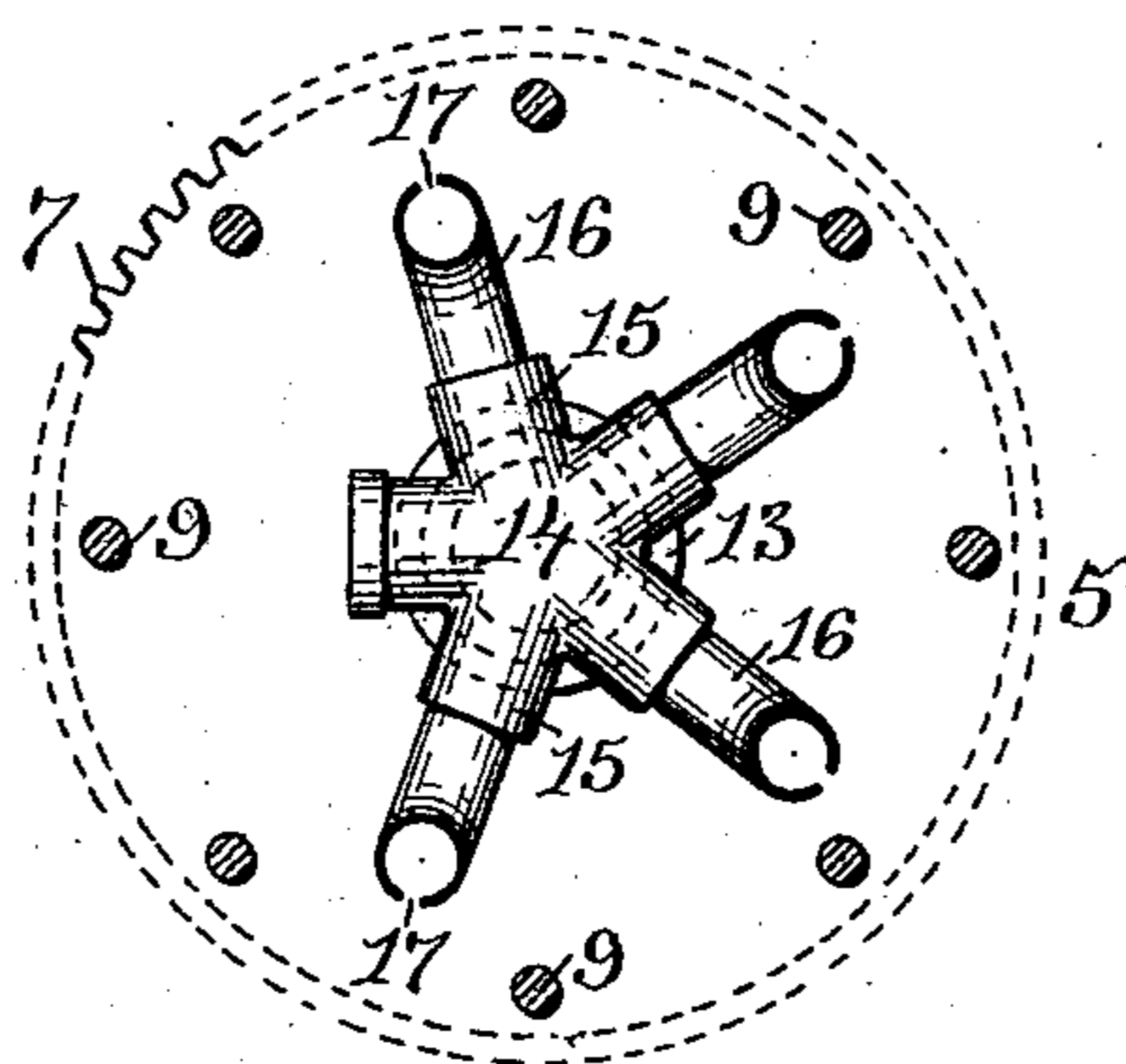
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W. HARTLEY, Jr.  
DRYING MACHINE.

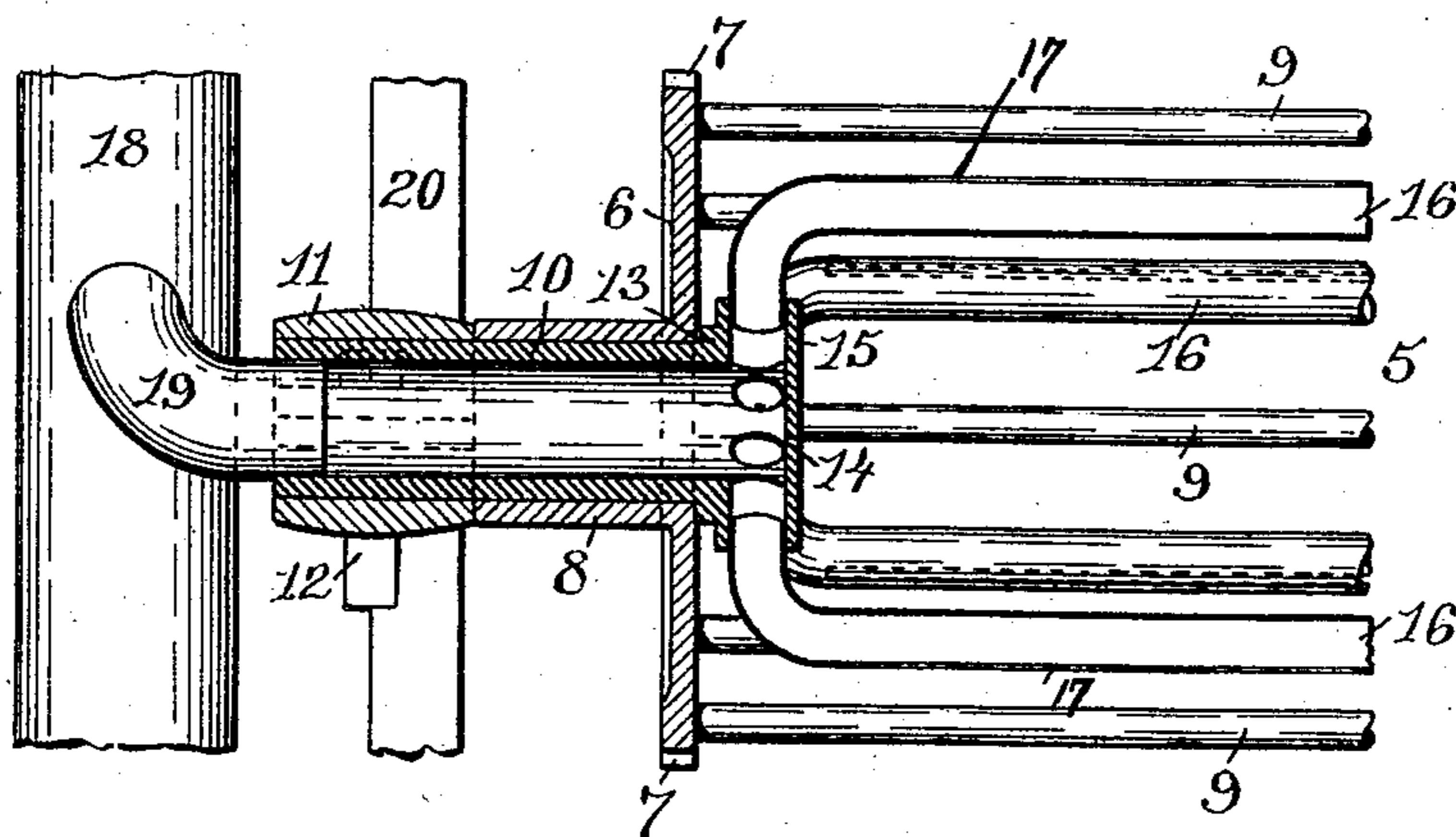
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Fig. 2.



**Fig. 3.**



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# UNITED STATES PATENT OFFICE.

WILLIAM HARTLEY, JR., OF PAWTUCKET, RHODE ISLAND.

## DRYING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 543,578, dated July 30, 1895.

Application filed November 25, 1892. Serial No. 453,014. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HARTLEY, Jr., of the city of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Drying-Machines; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in machines for drying cloth, yarn, paper, or other material.

The object of this invention is to produce a drying-machine in which the material will be subjected to the action of the drying medium in a more thorough manner than heretofore.

The invention consists in the peculiar construction of the drying-cylinders and the means for introducing dry air or other oxidizing medium to the interior of the same.

The invention further consists in the combination of a number of peculiarly-constructed drying-cylinders with suitable standards inclosed within a chamber and having air-supply pipes, as will hereinafter be more fully described, and pointed out in the claim.

Figure 1 represents an elevation of one form of the improved drying-machine, the wall of the inclosing-chamber being shown in section. Fig. 2 represents an enlarged cross-sectional view of one of the drying-cylinders. Fig. 3 represents a longitudinal sectional view of the same to more clearly indicate its construction and the connection with the air-supply.

Similar numbers of reference designate corresponding parts throughout.

In the drawings, 5 5 indicate cylinders or cages formed of the ends 6 6 having circumferential gears 7 and the bearing-collars 8. The ends 6 6 are connected by the bars or rods 9 9, the bearing-collars 8 being journaled on the sleeves 10, which are rigidly secured in the hubs 11 of the brackets 12. On the internal ends of the sleeves 10 are shoulders 13, which bear against the inner surfaces of the ends 6 6, and inwardly beyond these shoulders are the spiders 14, which may have any number of branch connections 15, the corre-

sponding branches at the opposite ends of the cylinder being connected by the pipes or tubes 16, the ends of which are curved to fit into the branches of the spiders, while the main length of the tubes extends parallel to and slightly within the bars or rods 9 9, the outer surface of these tubes or pipes 16 being furnished with the longitudinal slots 17.

Dry and heated air or other oxidizing medium is admitted to the sleeves 10 and thence to the tubes 16 by means of the supply-mains 18, having branches 19, which connect with the outer ends of the sleeves 10, the mains 18 being connected with an air-blast of any usual and ordinary form.

When arranged in vertical series, as shown in Fig. 1 of the drawings, the brackets 12 extend alternately from opposite sides of the standards 20 and are located with reference to the diameter of the cylinder-heads 6, so that the gear-teeth 7 of each pair of heads intermesh with the gear-teeth of the heads next above and below, so that, by driving one cylinder in each series, rotation will be imparted to the remaining cylinders. In this construction the gears 21 are journaled in bearings mounted on the cross-bars 22 and intermesh with the gears on a cylinder of each of the vertical series, these gears 21 being driven by the gears 23 mounted on the drive-shaft 24, the ends of which are suitably journaled, this drive-shaft being driven in any usual manner.

The series of cylinders are contained within the chamber 25, and the cloth or other material to be operated on passes into the same through a suitable opening. It then passes partially around each of the cylinders in turn, being subjected to the action of heated air which is forced through the slots in the tubes 16, and by this means is thoroughly dried without being brought into contact with the heated metal of the tubes.

It is obvious that any number of the cylindrical cages may be used in each series. The cylinders may be of any diameter and length, and they may be journaled in horizontal frames, if desired, modifications being made in the size and shape of the inclosing-chamber, or this chamber may be dispensed with when it is not necessary to confine the heated air escaping from the cylinders.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

5 In a drying or oxidizing machine, the combination with an inclosing chamber having an inlet and an outlet through which the fabric to be treated may be passed, of the standards 20—20 mounted within the chamber and furnished with the brackets 12—12 extending  
10 alternately in opposite directions, the cross-bars 22 connecting the standards in pairs, the sleeves 10—10 mounted in the brackets 12—12 and furnished with the spiders 14 having branched outlets 15, the slotted-tubes 16 connecting the corresponding branches of the  
15 spiders, cylindrical cages formed by the heads 6—6 connected by the rods 9—9 and having

the collars 8—8 journaled on the sleeves, said heads having gears 7—7 formed around their peripheries, the gears of the adjacent heads 20 intermeshing, the gears 21 connecting the gears 7—7 of the vertical systems, a shaft on which the gears 21 are mounted, this shaft being journaled on the cross-bars 22, and the air-supply pipes 18—18 having the branches 25 19—19 connecting with the sleeves 10—10, as and for the purpose described.

In witness whereof I have hereunto set my hand.

WILLIAM HARTLEY, JR.

Witnesses:

HENRY J. MILLER,  
M. F. BLIGH.