

No. 864,458.

PATENTED AUG. 27, 1907.

J. F. DRUCKER.  
ROTARY DOOR.

APPLICATION FILED NOV. 28, 1906.

3 SHEETS—SHEET 1.

Fig. 1

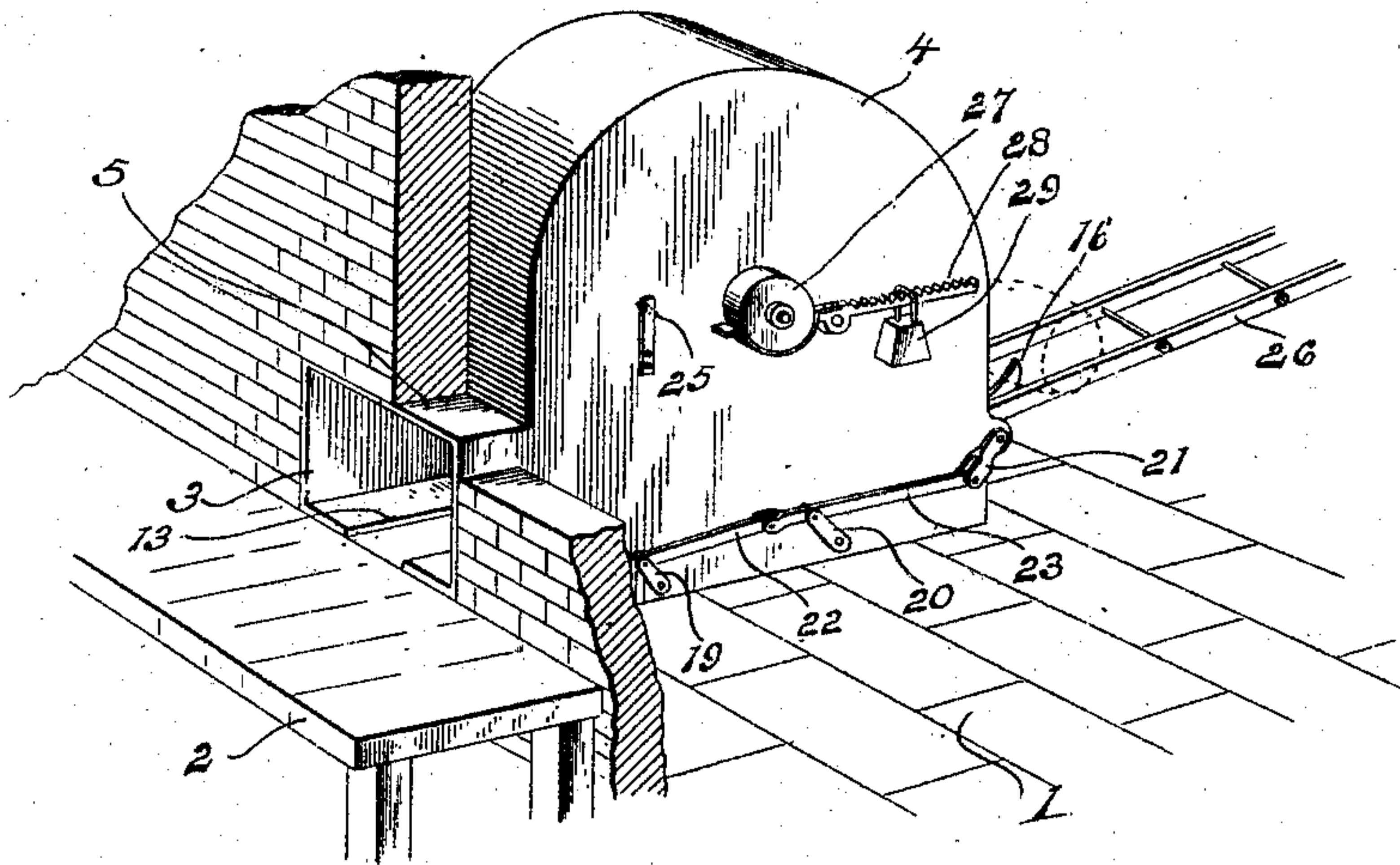
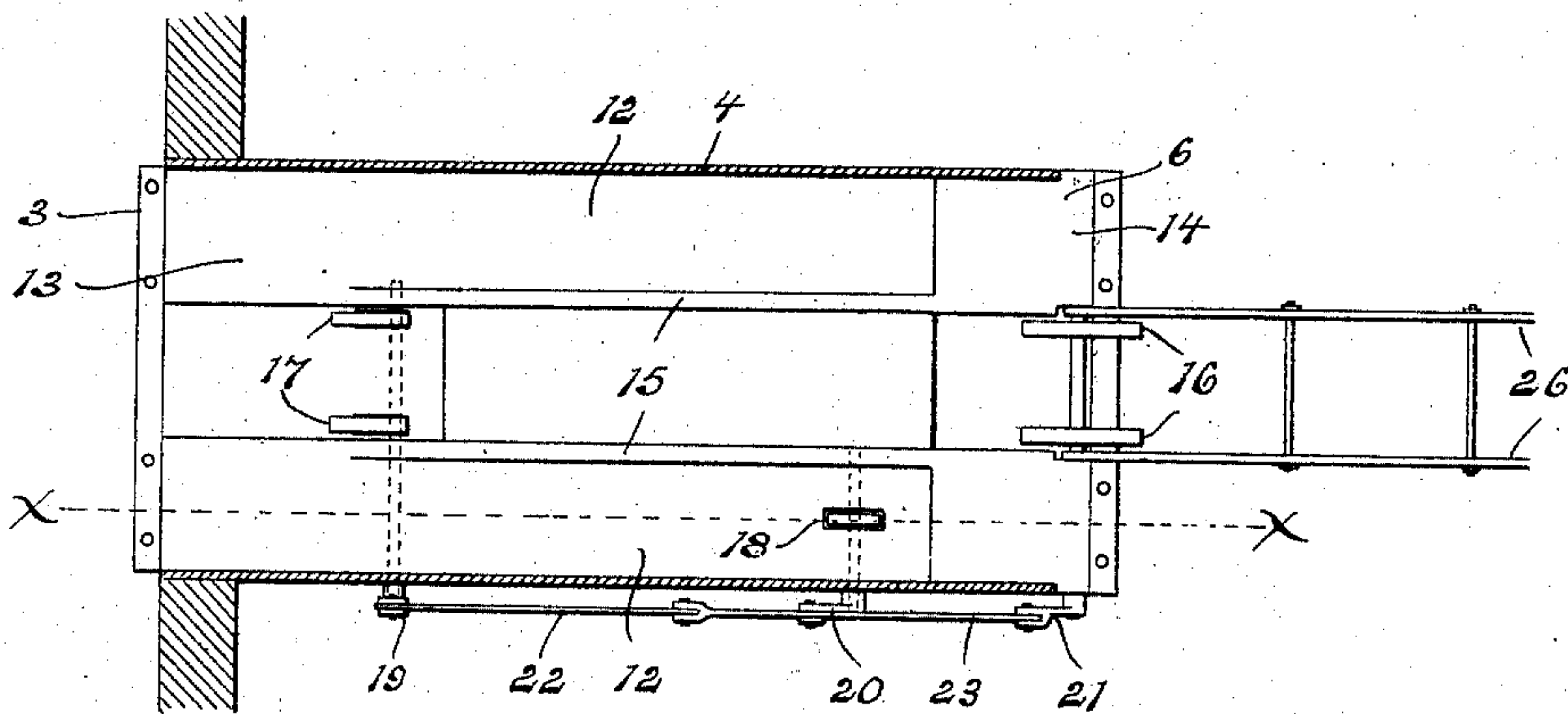


Fig. 3.



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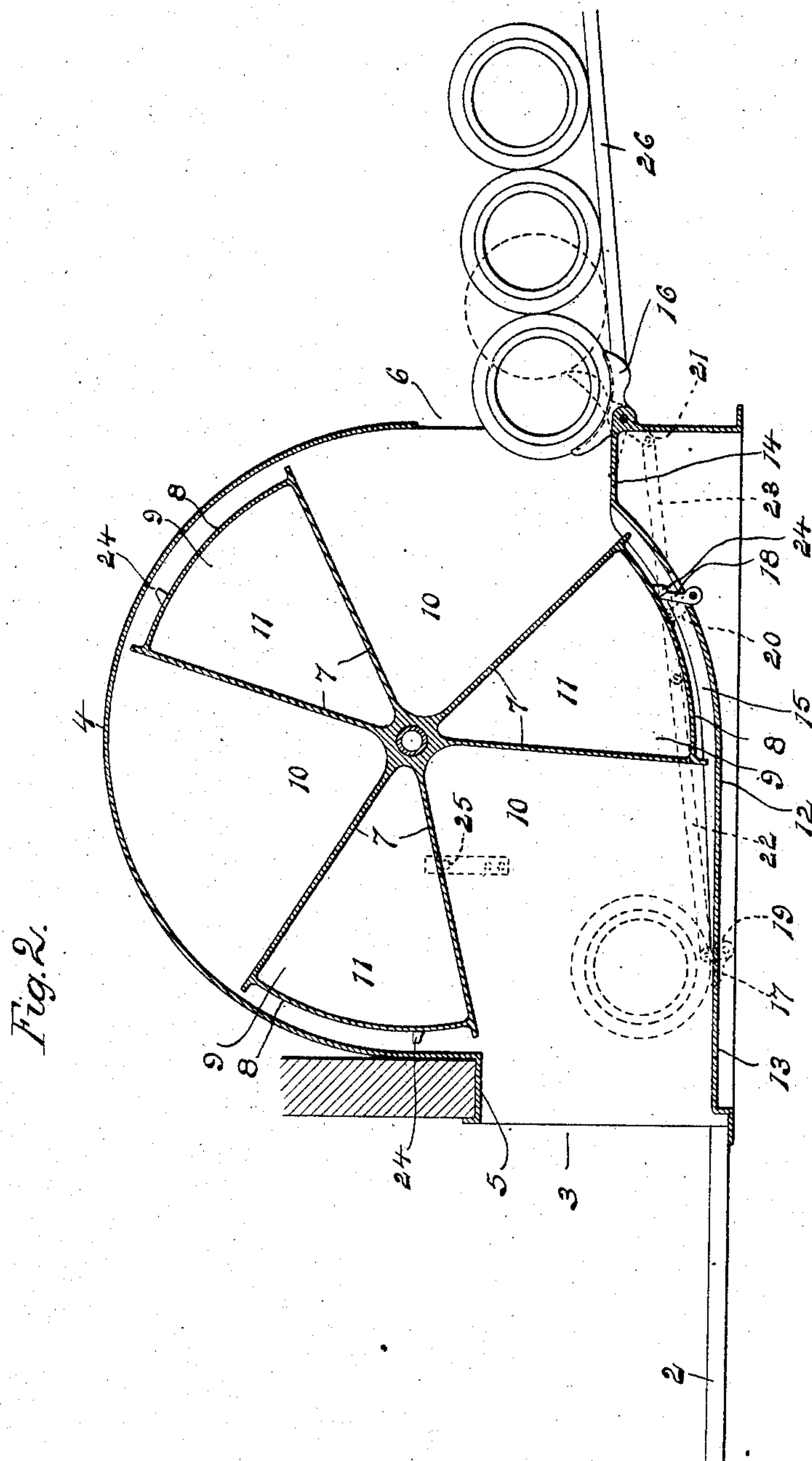
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3 SHEETS—SHEET 2.



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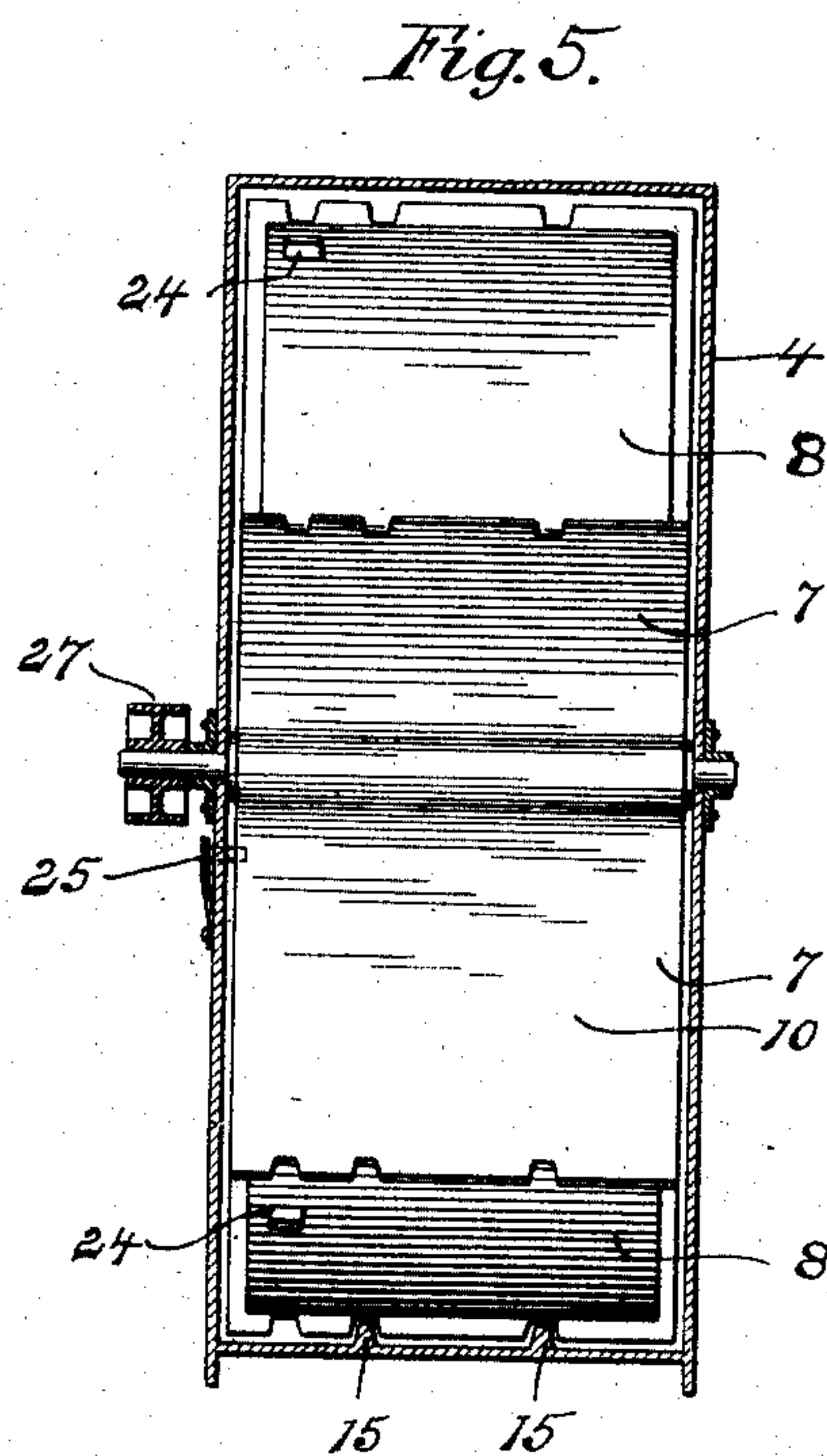
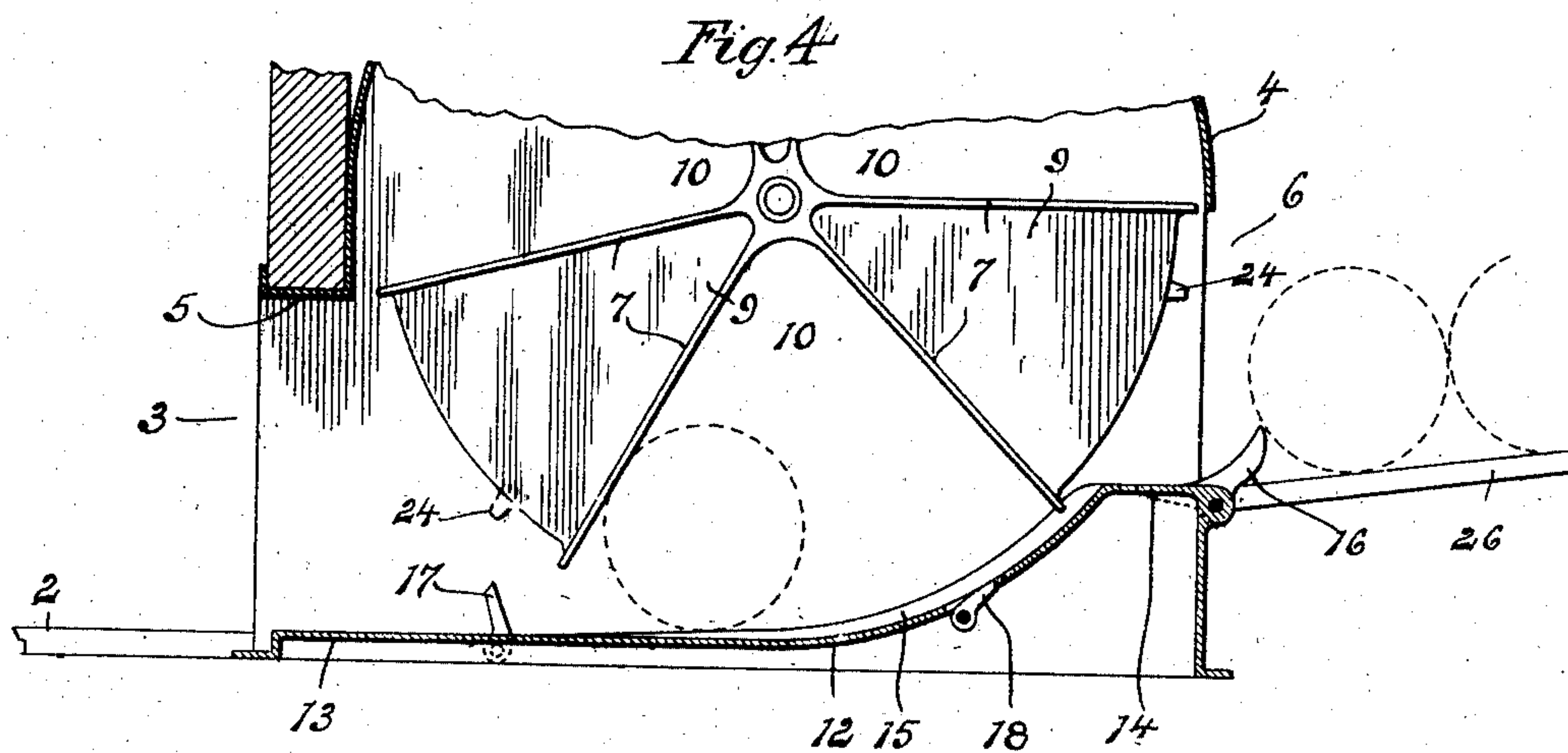
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3 SHEETS—SHEET 3.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN F. DRUCKER, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE STROH, OF DETROIT, MICHIGAN, AND FLORENTINE L. SCHOTT, OF NEW YORK, N. Y.

## ROTARY DOOR.

No. 864,458.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed November 26, 1906. Serial No. 345,191.

*To all whom it may concern:*

Be it known that I, JOHN F. DRUCKER, a citizen of the United States of America, residing at New York city, in the county of New York, State of New York, have invented certain new and useful Improvements in Rotary Doors, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improved rotary door for cold storage rooms, cellars and the like whereby the egress and ingress of barrels or kegs may be effected without admitting the outside air, and the object of the invention is to make the device adapted to meet different conditions of use, as for instance in racking cellars of breweries where kegs in large numbers either filled or empty have to be taken in and out and where such transfer has to be effected expeditiously and automatically while at the same time the door must form an efficient protection against the admission of outside air, since in the usual practice the racking cellar communicates through an opening with the wash house which is filled with hot vapor and through another opening directly with a loading platform on the outside.

My invention provides adequate means for accomplishing the objects desired, all in the manner more fully hereinafter described and shown in the accompanying drawings, in which:—

Figure 1 is a perspective view showing an invention as applied to an opening leading from the racking cellar of a brewery to a loading platform on the outside. Fig. 2 is a vertical central section showing the device as in operation. Fig. 3 is a horizontal section through the lower part of the casing. Fig. 4 is a side elevation with the casing in section substantially in the vertical plane of line  $x-x$  in Fig. 3 and with the operating parts in an alternative position from that in Fig. 2. Fig. 5 is a vertical cross-section of the device with the rotary door shown in elevation.

Referring to the drawing, 1 represents the floor of the racking cellar of a brewery, 2 the loading platform on the outside and 3 the opening through which the kegs are delivered from the racking cellar on to the platform.

The rotary door consists of an outer casing 4 formed with a horizontal base extending at one end into a door casing 5 for the door opening 3 in the outer wall of the cellar and provided with a corresponding opening 6 in the opposite end of the casing, upon a higher level. Centrally journaled in the side wall of the casing is a rotatable member comprising a series of radial partitions 7 connected in pairs by suitable end and side walls 8 and 9 forming an alternating series of open or carrying compartments 10 and closed compartments 11 which interpose a dead air space between the carrying compartments. The bottom of the casing between the inlet and outlet openings forms an inclined rollway for kegs a part of which is concentric with the casing and forms

the main part 12 of the rollway, the outgoing and ingoing portions 13 and 14 being but slightly inclined. The part 12 is provided with raised guide rails 15 while the end portions 13 and 14 are centrally depressed to form in connection with the guide rails a continuous track to guide the kegs on the rollway. In connection with the rollway in the casing I provide a suitable extension or skid 26 at the ingoing end of the rollway which is also suitably inclined to cause the kegs deposited thereon to roll into the inlet opening by gravity. The passage of the kegs through the casing is automatically controlled by a system of connected stops comprising a pair of stops 16 at the inlet opening, a pair of stops 17 in the outgoing end of the casing and an intermediate stop 18, all of said stops being secured upon transverse shafts which are connected for joint operation by means of crank arms 19, 20, 21 and connecting rods 22 and 23 arranged on one side of the casing.

The stops 16 and 17 are in the path of the kegs and are operated by the weight of the kegs in such manner that an outgoing keg in passing over the stops 17 depresses the same and thereby actuates the stops 16 into the position shown in full lines in Fig. 2 in which position they hold the foremost keg upon the skid from entering the casing till the outgoing keg has passed over the stops 17. As soon as said outgoing keg has passed over said stops, the weight of the foremost keg, bearing against the inner ends of the stops 16 will then actuate said stops 16 into the alternative position shown in Fig. 4 and thereby release the foremost keg but prevent the succeeding keg from following it until it has passed the stops 17. In this manner any number of kegs placed upon the skid will follow each other automatically, one by one, at intervals so that at no time will more than one keg be passing through the casing. The stop 18 does not project far enough into the casing to come into contact with the kegs, but is adapted to engage the lugs 24 upon the walls 8 of the closed compartments, and thereby operates to intermittently arrest the movement of the rotary member. This stop 18 is wholly operated by the stops 16 and 17 through the connecting rods 22 and 23 and the crank arm 20 in such manner that the outgoing keg in passing over the stops 17 throws said stop 18 up into its locking position as shown in Fig. 2, and the ingoing keg in actuating the stops 16, withdraws it. By the operation of this stop 18 the rotary door is thus intermittently arrested in position to register the open compartments successively with the inlet opening into the casing.

To prevent the door from rotating accidentally in the wrong direction, a suitable backstop is provided. The drawing showing a spring dog 25 which is adapted to engage with the partitions 7. These partitions fit closely within the casing but rotate without friction



therein and the outer ends are notched to prevent interference with the stop 18 or with the rails 15.

The rotary member is preferably supported in anti-friction bearings and is provided with a friction device comprising the brake pulley 27, the brake lever 28 pivoted to the side of the casing and the adjustable weight 29 carried by the lever. By increasing or decreasing the friction by adjusting the weight, the rotary member may thus be made to rotate slower or faster as best suits the weight of the kegs, since the kegs may be empty or filled and my door is thus adapted to work wholly automatically under all conditions of operation and this being the case it is obvious that a mechanical counting device may be applied to a moving part of the device to keep an accurate count of the number of kegs passing through the door.

In order that the rotary door may start automatically, any suitable means may be provided whereby the connected stops will normally assume the position shown in Fig. 2 of the drawings, the outwardly projecting ends of the stops 16 being made suitably heavy to act as a counterweight. In this position of the parts there is always one of the dead air compartments 11 interposed between the openings in the casing, thus providing an effectual insulation of the storage room or cellar. The brake lever 28 is convenient to the hand of the operator and by using it as a hand lever an absolute control over the movement of the door is provided.

It is obvious that the device may be arranged to deliver the kegs from the wash house or other parts of the brewery into the racking cellar, in the same manner.

Having thus fully described my invention what I claim is:—

1. In a rotary door, the combination with a casing provided with a bottom forming an inclined rollway for barrels or kegs and having inlet and outlet openings at the ends thereof, of a rotary member in said casing formed with an alternating series of open or carrying compartments and closed or dead air compartments.

2. In a rotary door, the combination with a casing having a bottom forming an inclined rollway for barrels or kegs and provided with inlet and outlet openings at the ends thereof, of a rotary member in said casing formed with a plurality of radial partitions and with side and end walls alternately connecting adjacent partitions and forming dead air spaces between them.

3. In a rotary door, the combination with a casing having a bottom forming an inclined rollway for barrels or kegs and provided with inlet and outlet openings therefor in the ends of the casing, a rotary member in said casing and means at the ingoing end of the rollway operated by the outgoing barrel or keg to temporarily arrest the ingoing barrel or keg.

4. In a rotary door, the combination with a casing having a bottom forming an inclined rollway for barrels or kegs and provided with inlet and outlet openings in the ends of the casing, a rotary member in said casing and means at the ingoing end operably alternatively by the ingoing barrel or keg to temporarily arrest the following barrel or keg and by the outgoing barrel or keg to temporarily arrest the ingoing barrel or keg.

5. In a rotary door, the combination with a casing having a bottom forming an inclined rollway for barrels or kegs and provided with inlet and outlet openings at the ends thereof, means at the ingoing ends of the rollway operated by the outgoing barrel or keg to temporarily arrest the ingoing barrel or keg and a stop operating in conjunction with the aforesaid means to temporarily arrest the rotary member.

6. In a rotary door, the combination with a casing having a bottom forming an inclined rollway for barrels or kegs and provided with inlet and outlet openings at opposite ends thereof, of a rotary member in said casing and three connected stops, one at the inlet opening and adapted to temporarily arrest the ingoing barrel or keg, one at the outlet opening adapted to be actuated by the outgoing barrel or keg, and the third stop adapted to temporarily arrest the rotary member.

7. In a rotary door, the combination with a casing having a bottom forming an inclined rollway for barrels or kegs and provided with inlet and outlet openings at opposite ends, a rotary member in said casing, a stop at the inlet opening adapted in one position to temporarily arrest the ingoing barrel or keg and in its alternative position to arrest the next succeeding barrel, a stop at the outlet opening adapted to be operated by the outgoing barrel, an intermediate stop adapted to temporarily arrest the rotary member, and connecting mechanism simultaneously operating the stops.

8. In a rotary door, the combination with a casing having a bottom forming an inclined rollway for barrels or kegs and provided with inlet and outlet openings therefor, of a rotary member journaled in said casing and adapted to revolve freely therein upon a horizontal axis, a brake drum carried by said rotary member outside the casing, a brake lever cooperating with said brake drum and an adjustable weight carried by the brake lever.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN F. DRUCKER.

Witnesses:

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