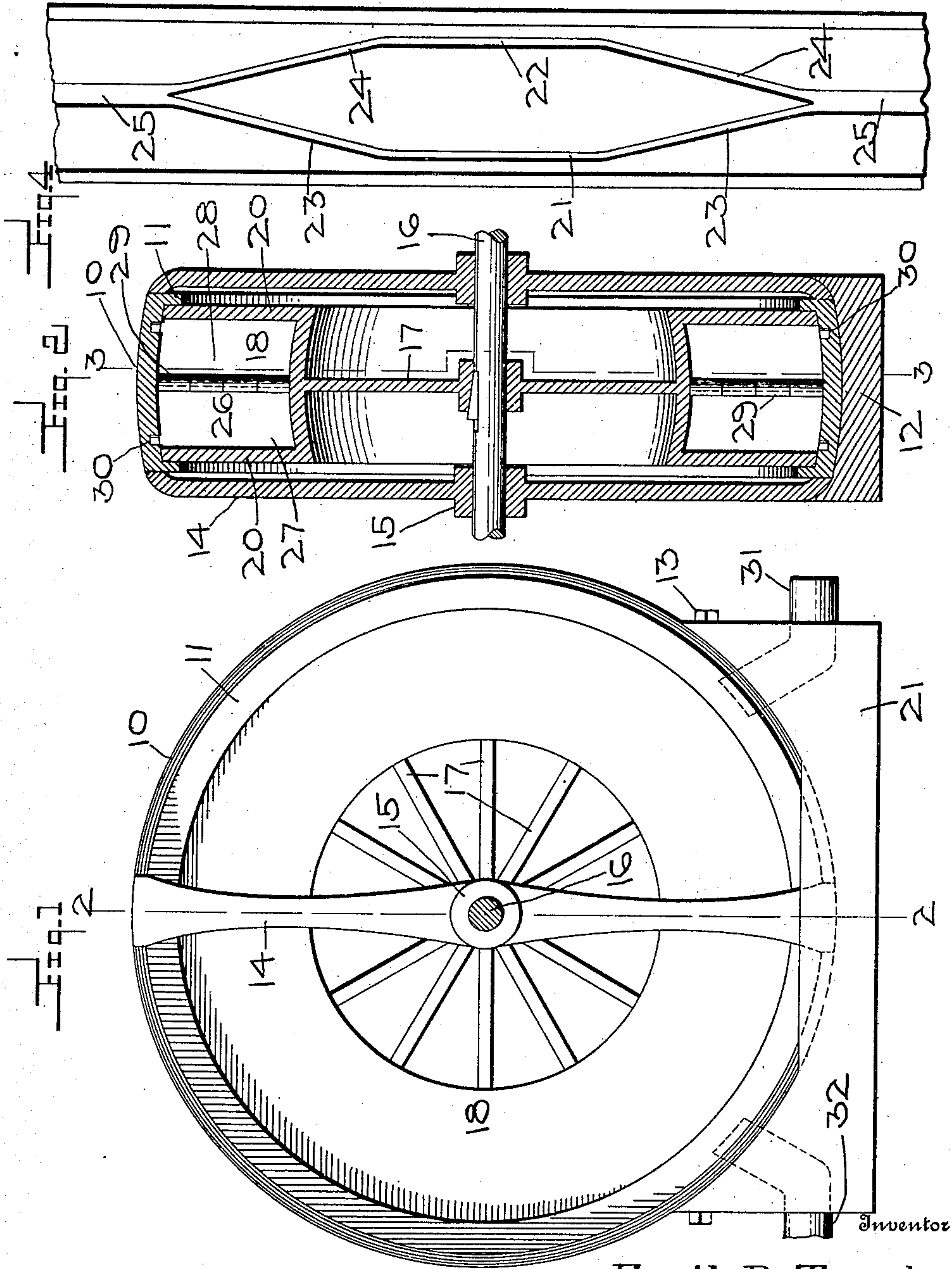


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E. B. TRESCHER.
ROTARY ENGINE.
APPLICATION FILED APR. 16, 1908.

Patented Apr. 27, 1909.
2 SHEETS—SHEET 1.



Witnesses

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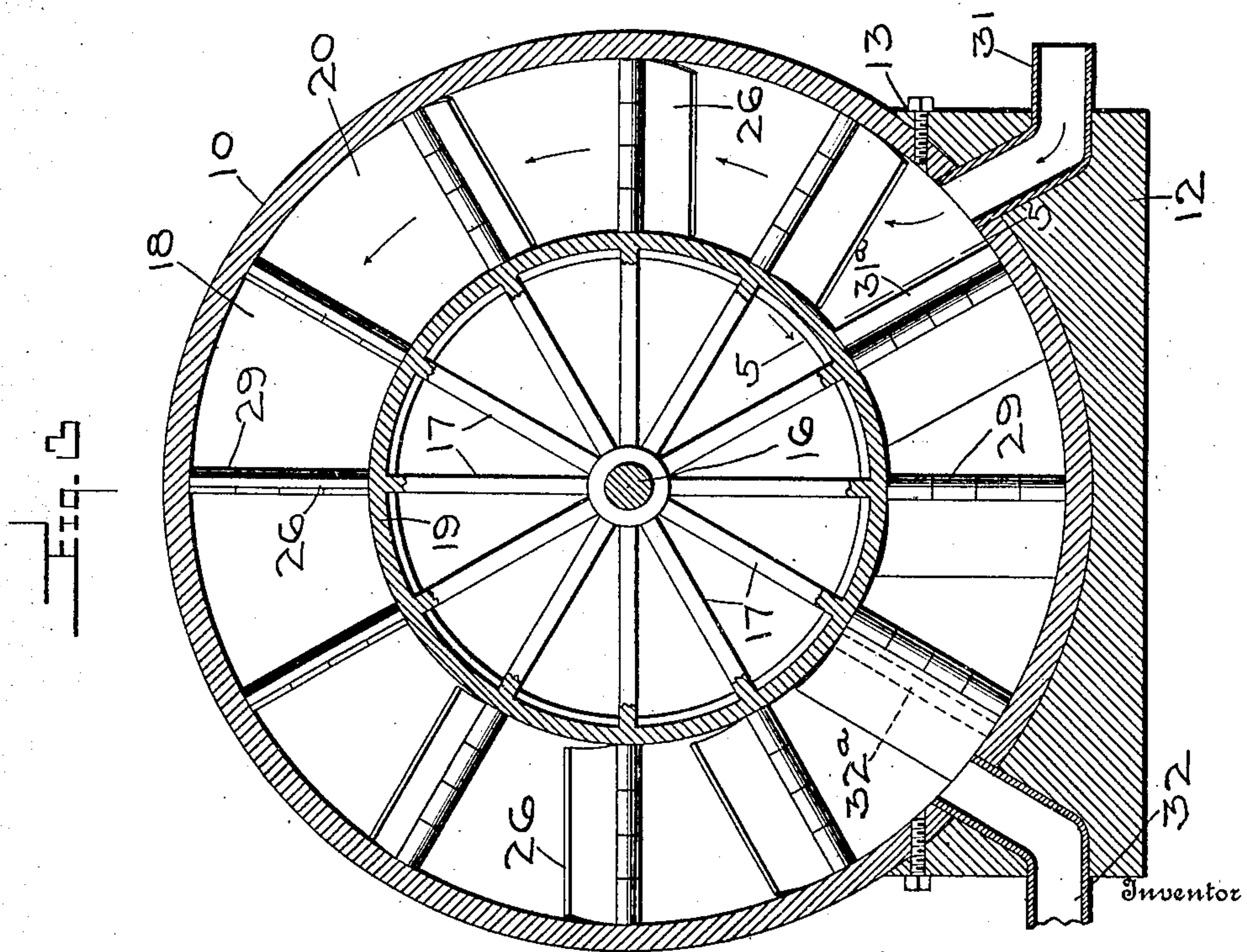
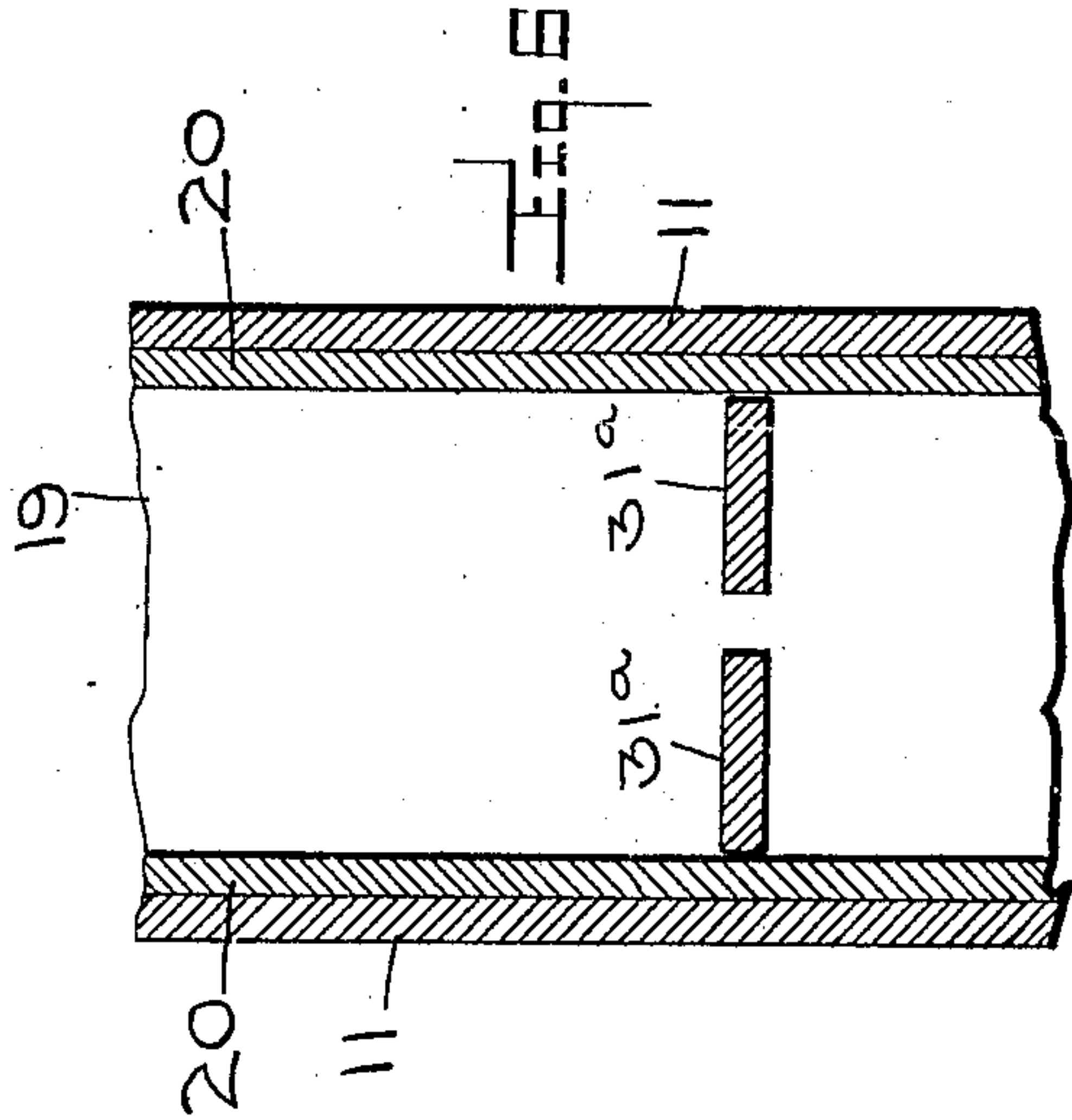
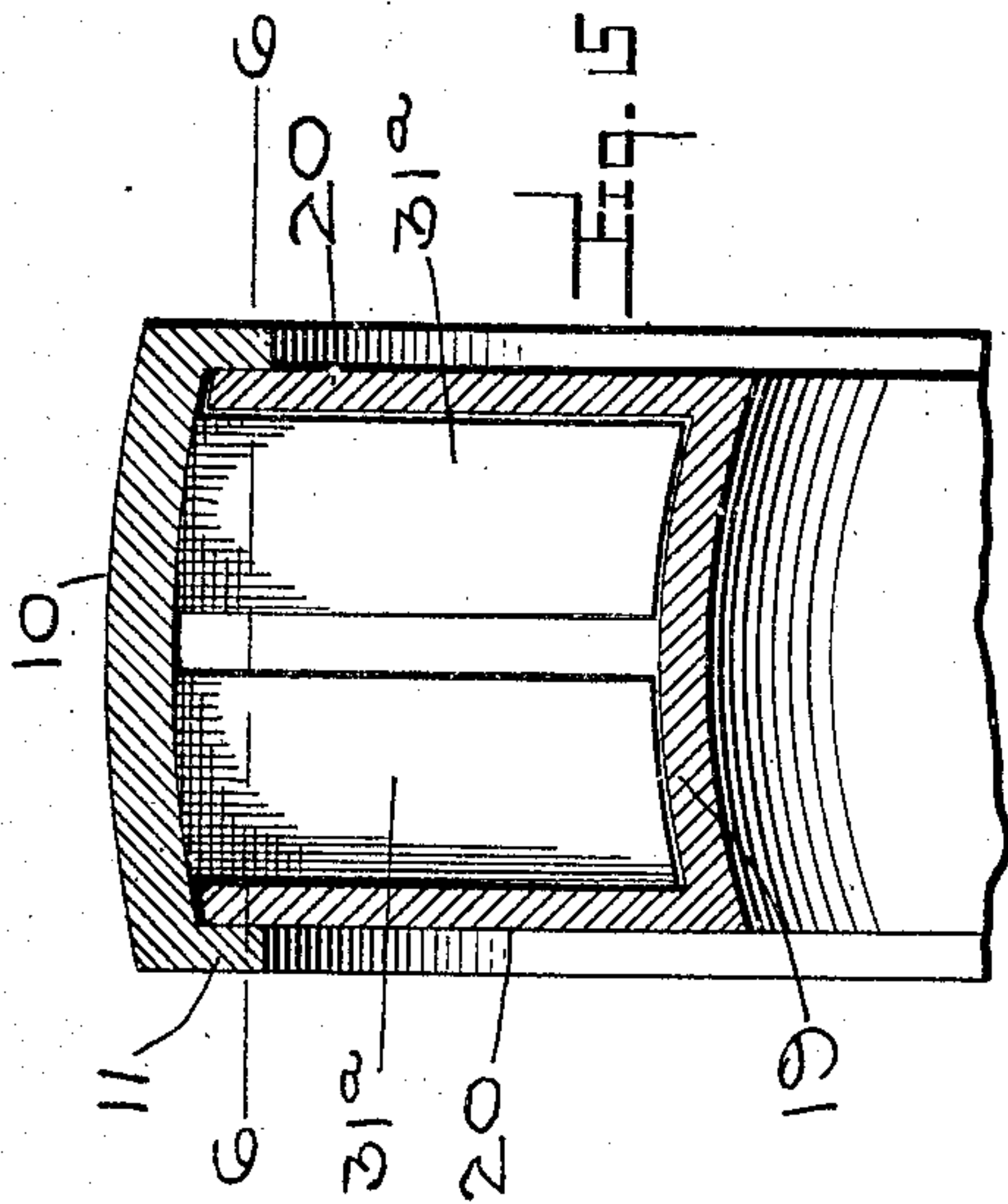
Emil B. Trescher

By Woodward Chandler
Attorney

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UNITED STATES PATENT OFFICE.

EMIL B. TRESCHER, OF BOSTON, MASSACHUSETTS.

ROTARY ENGINE.

No. 919,496.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed April 16, 1908. Serial No. 427,374.

To all whom it may concern:

Be it known that I, EMIL B. TRESCHER, a citizen of the German Empire, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Rotary Engines, of which the following is a specification.

This invention relates to steam engines, and more particularly to rotary engines, and has for its object to provide an engine of this type which will be relatively simple in arrangement and structure, and which will do away with the elaborate and complicated valve mechanism, packing therein, etc.

A further object of this invention is to provide an engine of the above described character including a plurality of paddles or impact members of foldable sections arranged to lie normally in a closed position, but which are adapted to open consecutively upon admission of steam or fluid to the engine cylinder.

Other objects and advantages will be apparent from the following description and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevational view of the present invention, Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1, Fig. 3 is a sectional view on the line 3—3 of Fig. 2, Fig. 4 is a diagrammatic figure of a portion of the stationary cylinder showing the cam grooves and the steam impact paddles, Fig. 5 is a detail sectional view of the revoluble wheel on the line 5—5 of Fig. 3, Fig. 6 is a horizontal sectional view on the line 6—6 of Fig. 5.

Referring now more particularly to the drawings, there is shown a rotary engine comprising a stationary metallic casing 10 provided at each side with a circular flanged portion 11, as shown. The casing 10 is provided with a suitable supporting base 12 bolted to the casing as shown at 13. At each side, the casing is provided with a vertically disposed arm 14 each being provided at its center with a bearing 15. The bearings 15 thus support a revoluble shaft 16 provided with a plurality of radial spokes 17. The spokes 17 have their outer portions directed to the inner face of the casing 10 and are located between planes of the flanges 11, as

shown. The spokes 17 thus receive a revoluble metallic body 18 provided with a bottom wall 19 and spaced side walls 20. The side walls 20 are thus disposed inwardly of the flanges 11 of the casing, and the bottom wall 19 is thus arranged in spaced relation to the casing for a purpose to be hereinafter described.

The casing 10 upon its inner face is provided with cam grooves 21 and 22 respectively arranged in parallel relation circumferentially of the casing, and these grooves are in communication with angularly disposed cam grooves 23 and 24 respectively at each of their ends. The cam grooves 23 and 24 are also in communication with a single groove 25, as shown. Each spoke 17 is provided with a steam impact paddle 26 comprising two members 27 and 28 respectively hinged to each spoke as shown at 29. The members 27 and 28 are located within the metallic body 18, and are thus arranged to close portions of this body when said paddles are in their open position. At its outer end each paddle is provided with a pin 30, and these pins are arranged for movement in the cam grooves just described. The casing is provided at one side with a steam supply pipe 31, and at the other side the cylinder is provided with an exhaust pipe 32. It will thus be seen that steam or similar fluid may enter the inlet 31, and is discharged within the casing and revoluble body 18, and passes the paddles which are only partly open, and strikes other paddles in their open position until it reaches one entirely closing the interior of the revolving body, thus setting up motion which revolves said body, moving the paddles around until the steam is discharged at the pipe 32 where it may be delivered to a suitable condenser. It will thus be seen that the construction is such that when the revoluble body is in motion, the pins 30 carried by the members 27 and 28 respectively of the paddles will tend to close said paddles when they are engaged with the groove 25, and upon entrance of the pins in the passages 23 and 24, it is obvious that the paddle members will partly open, and after said pins have traveled or reached the parallel grooves 21 and 22 it will be apparent that said paddle members are in an open position. The stationary casing, adjacent to the inlet 31 is provided with deflector plates 31^a arranged in spaced relation to each other, as shown, to permit the hinged

wings to pass therebetween in their travel. Similar deflector plates 32^a are carried by the casing adjacent to the exhaust 32.

What is claimed is:

- 5 1. In a rotary engine, the combination with a stationary cylindrical casing having cam grooves in its inner curved face, of a power shaft located concentrically with the casing, a revoluble hollow body carried by
10 the shaft, for rotation therewith, said body being located within the inclosure of the casing, and having an open face directed toward the inner curved surface of the casing, said casing having spaced inlet and exhaust ports,
15 a pair of transversely spaced deflector plates carried by the casing adjacent to each of the ports, said deflector plates being located between the ports, a plurality of radial spokes carried by the hollow member therewithin, a
20 pair of steam impact paddles hinged upon the spokes for movement to lie at times in position for passage between the deflector plates, and at times in position to extend transversely of the hollow body, and pins
25 carried by the blade and engaged in the cam grooves, said grooves being arranged for movement of the pins to bring the blades into parallel relation when passing the deflector plates and to bring the blades into op-
30 positively extending position when at other portions of the casing.
2. In a rotary engine, the combination with a stationary cylindrical casing including
35 circular flange portions at each side, of a vertically extending arm connected with the casing, and extending diametrically there-
over at each side of the casing, a hollow shaft journaled in the arm concentrically of the casing, radial spokes connected with the
40 power shaft, a cylindrical body connected with the spokes for rotation therewith, said body including a bottom wall and spaced vertically extending side walls, said side
45 walls extending at their outer portions be-
tween the flanges of the casing, said spokes

including portions lying between the side walls of the body, a pair of impact paddles pivoted to the last named portion of each spoke, said paddles lying within the revoluble body, and means for moving the paddles
50 upon their pivots, said casing having steam inlet and exhaust ports.

3. In a rotary engine, the combination with a stationary cylindrical casing including
55 circular flange portions at each side, of a vertically extending arm connected with the casing, and extending diametrically thereof at each side of the casing, a hollow shaft journaled in the arm concentrically of the casing, radial spokes connected with the hol-
60 low shaft, a cylindrical body connected with the spokes for rotation therewith, said body including a bottom wall, and spaced vertically extending side walls, said side walls extending at their outer portions between
65 the flanges of the casing, said spokes including portions lying between the side walls of the body, a pair of impact paddles pivoted to the last named portion of each spoke, said
70 paddles lying within the revoluble body, means for moving the paddles upon their pivots, said casing having cam grooves in its inner curved face, and having also spaced in-
let and exhaust ports, a pair of transversely
75 extending spaced deflector plates carried by the casing adjacent to and inwardly of the ports, and pins carried by the steam impact
paddles and engaged in the cam grooves, said
80 grooves being arranged for movement of the pins to bring the paddles into parallel rela-
tion at times for passage between the de-
flector plates, and at times into oppositely
extending position to receive the impact of
steam thereagainst.

In testimony whereof I affix my signature, 85
in presence of two witnesses.

EMIL B. TRESCHER.

Witnesses:

EVERETT N. CURTIS,
ELMER L. BRIGGS.