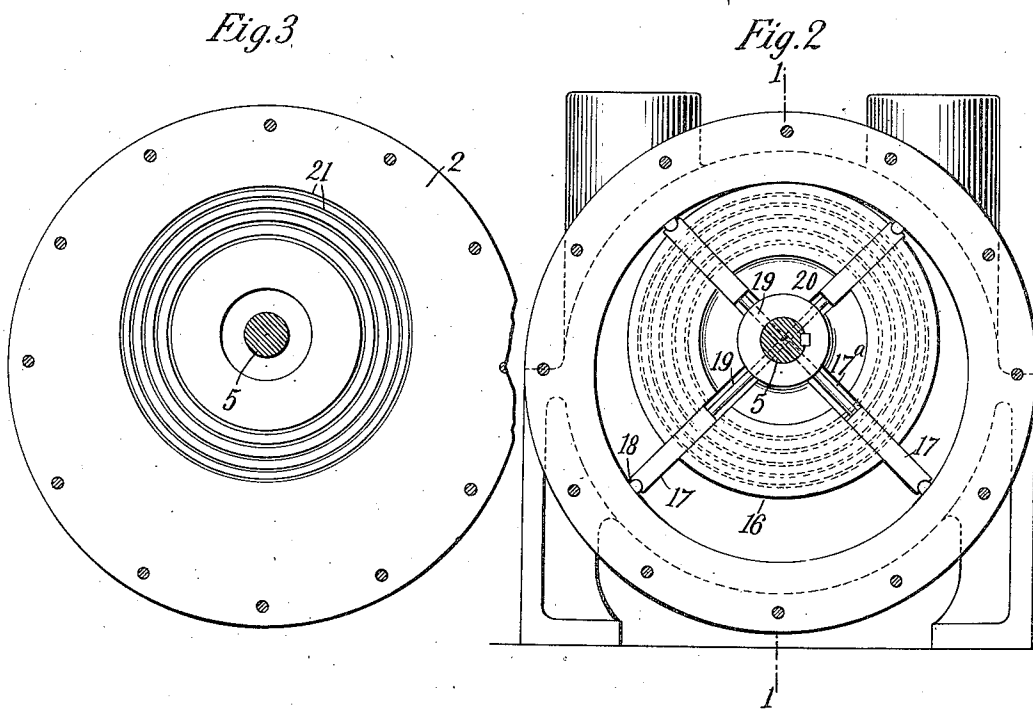
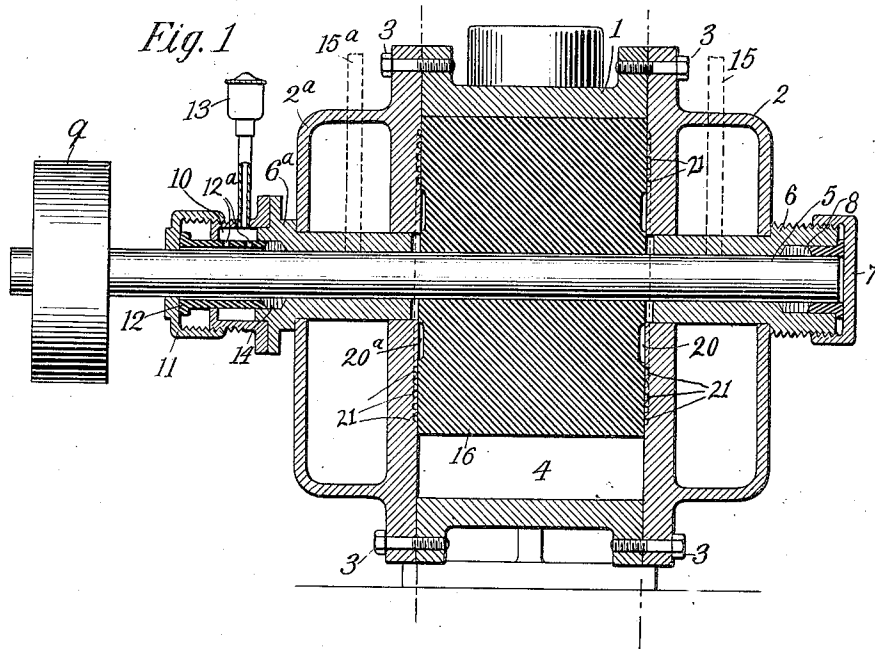


No. 845,114.

PATENTED FEB. 26, 1907.

C. C. PALMER.
 ROTARY COMPRESSOR.
 APPLICATION FILED MAR. 11, 1905.



Witnesses:
 Walter C. Pauling
 Chas. J. Rathjen

Inventor
 CASSIUS CLAY PALMER.
 by *Laffin & Buel* Attys.

UNITED STATES PATENT OFFICE.

CASSIUS CLAY PALMER, OF NEW YORK, N. Y.

ROTARY COMPRESSOR.

No. 845,114.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed March 11, 1905. Serial No. 249,584.

To all whom it may concern:

Be it known that I, CASSIUS CLAY PALMER, a citizen of the United States, and a resident of New York city, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Rotary Compressors, of which the following is a specification.

This invention relates to rotary compressors, and consists of certain novel parts and combinations of parts particularly pointed out in the claims concluding this specification.

In the accompanying drawings, Figure 1 is a sectional view of a compressor embodying my invention, taken on the line 1 1 of Fig. 2. Fig. 2 is a sectional view showing the interior of the cylindrical casing. Fig. 3 is a view of one of the heads of the cylinder, showing the same recessed according to my invention.

The drawings illustrate my invention in the form which is at present preferred by me, although it will be understood that various changes and modifications may be made in the details of the same without departing from the spirit of my invention and without exceeding the scope of the concluding claims.

Reference being now had to the details of construction as illustrated in the several figures, 1 is a cylinder or casing constituting with the heads 2 2^a, which are suitably secured to the casing by any appropriate means—as, for example, the bolts 3 3, &c.—an interior cylindrical chamber 4. This cylinder is bored after the manner described in United States Letters Patent to Gilmer Crowell, No. 475,301 and No. 475,302, dated May 24, 1892. The shaft 5, passing through the cylindrical chamber, is journaled eccentrically in the bearings 6 6^a in the heads 2 2^a. Secured to the end of the bearing 6 is a cap 7, which incloses the end of the shaft 5. If necessary to prevent leakage, packing 8 of any suitable material may be placed around the shaft. To the other end of the shaft 5 is secured the belt-wheel 9. The outer end of the bearing 6^a has affixed thereto or forming part thereof the cell or chamber 10, surrounding the shaft. To this end of the bearing or to the affixed chamber is suitably secured the cap 11, the head of which has an opening therein adapted to fit snugly around the shaft. A sleeve 12, surrounding the shaft, extends from the cap into and through the chamber 10 and into

the bearing 6^a. The chamber or cell 10 is supplied with glycerin or other suitable agent from the reservoir 13, and the sleeve 12 has therein openings 12^a, whereby the glycerin may have access to the shaft 5. This chamber 10 thus forms a liquid seal, which prevents the air from entering the bearings and accumulating within the compressor-chamber, and thereby friction is greatly reduced. To further prevent leakage, a suitable packing material 14 may, if desired, be placed around the shaft between the end of the sleeve 12 and the interior of the bearing 6^a. 15 15^a are pipes leading from a suitable source of oil-supply (not shown) to the interior of the bearings 6 and 6^a. The above matters of detail may, however, be varied, if desired, and also, if necessary, a liquid seal similar to that above described may be placed in or adjacent the bearing 6.

16 is a rotating drum carried by the eccentrically-journaled shaft 5, and said drum carries with it the radially-sliding pistons or blades 17, of which there may be two or more. These blades are adapted to slide in grooves or slots 17^a and have at their outer ends a packing-strip 18, preferably made of soft steel; but other suitable metal may be used. These ends are adapted in their revolutions to preserve accurate and close contact or fit throughout the diameter of the internal caliber without liability of leakage at any point past a blade. That the blades 17 may be practically continuous in a radial line the pins 19 19 are provided, each passing through perforations in the shaft with either end in contact with the end of the piston or blade, there being a pair of pins for each pair of blades, the whole free to slide back and forth with respect to the axis.

20 20^a are recesses or channels (shown in the drawings) upon the drum; but these channels may, if preferred, be formed on the heads 2 2^a and perform the same function. The purpose of these recesses or channels is to serve as ports whereby the oil may circulate and be transferred from one guideway 17^a for the blade 17 to another, and thereby lubricate the blades. Heretofore the lubricant for the blades found passage only through a channel through the shaft around the pins, and as this channel or boring was very narrow the lubricant could not flow freely, nor could it circulate between the various guideways, and hence was an impediment to rapid

motion. The aim of my invention is to reduce friction and to facilitate the rapid operation of the machine, and by means of the channel above described around the drum or in the heads this purpose is accomplished. To further reduce the friction-surface, I groove or recess the heads 2 2^a, as indicated by the recesses 21 21, &c. These recesses upon the revolution of the drum become filled with liquid and serve as a liquid seal, preventing the gases passing from the vacuum side of the rotary compressor to the compression side.

What I claim, and desire to secure by Letters Patent, is—

1. In a rotary compressor the combination with a casing having the interior faces of the heads thereof formed with a plurality of grooves, a shaft extending through the casing, a drum mounted upon said shaft, a liquid seal being formed by the grooved heads and the ends of the drum, said drum also having guideways formed therein, radially-sliding blades reciprocating in said guide-

ways, and means for introducing a lubricant to the guideways of the blades.

2. In a rotary compressor the combination with a casing having the interior faces of the heads thereof formed with a plurality of circular grooves, a shaft extending through said casing, a drum mounted upon said shaft, and forming a liquid seal with the grooved heads of the casing adjacent to the bearings of the shaft, said drums having guideways therein, blades reciprocating in said guideways, said drum also being grooved to permit the free circulation of a lubricant in and between said guideways, and means for introducing the lubricant to the grooves in the drum.

In witness whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

CASSIUS CLAY PALMER.

Witnesses:

WALTER A. PAULING,
CHARLES J. RATHJEN.