

July 12, 1927.

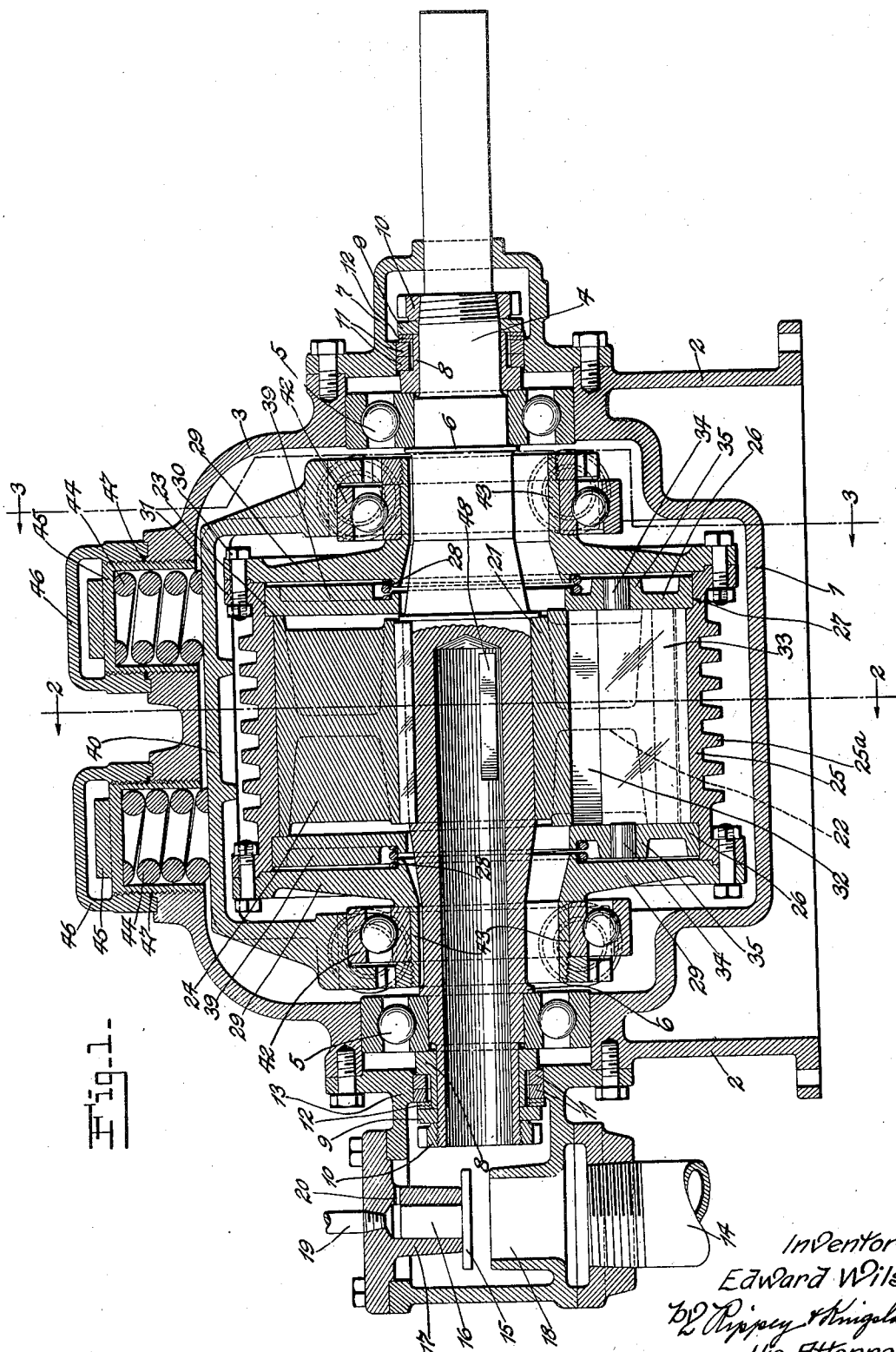
E. WILSON

1,635,523

COMPRESSOR

Filed March 22, 1926

4 Sheets-Sheet 1



Inventor.
Edward Wilson,
by *Pippen & Kingland*
His Attorneys.

July 12, 1927.

E. WILSON

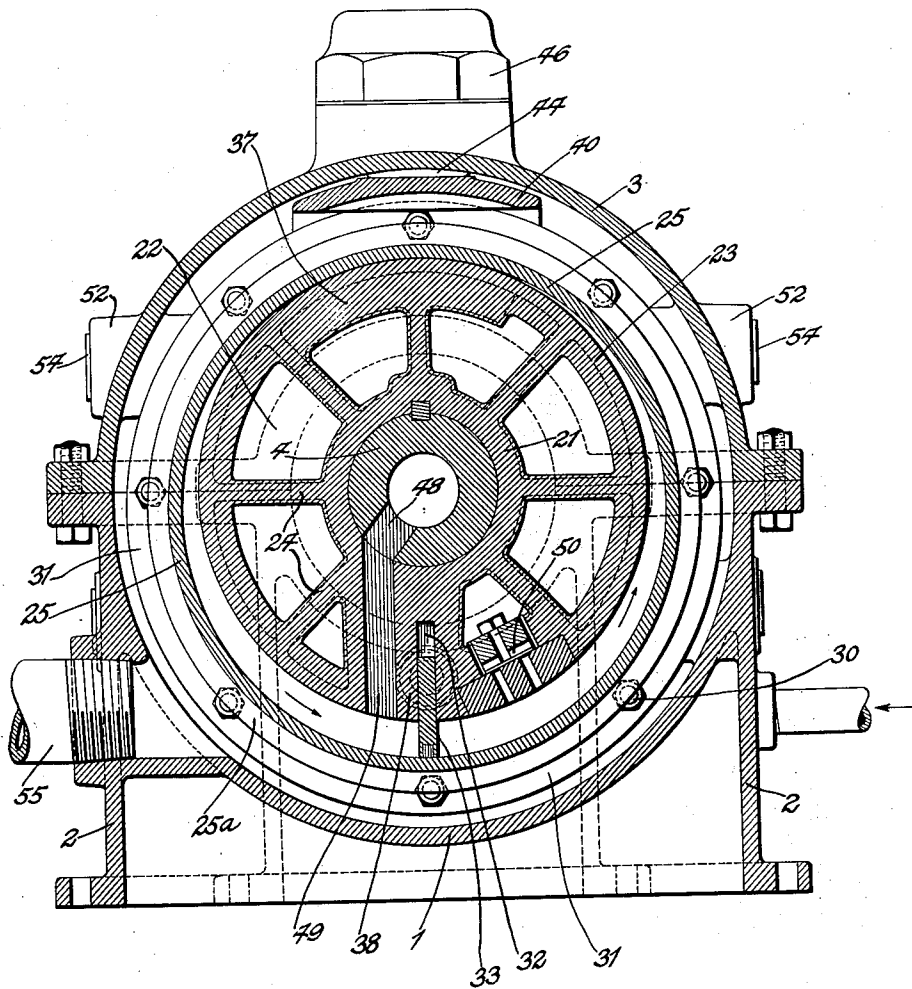
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Fig. 2.



Inventor:
Edward Wilson,
by R. P. Rippey & Kingland,
His Attorneys.

July 12, 1927.

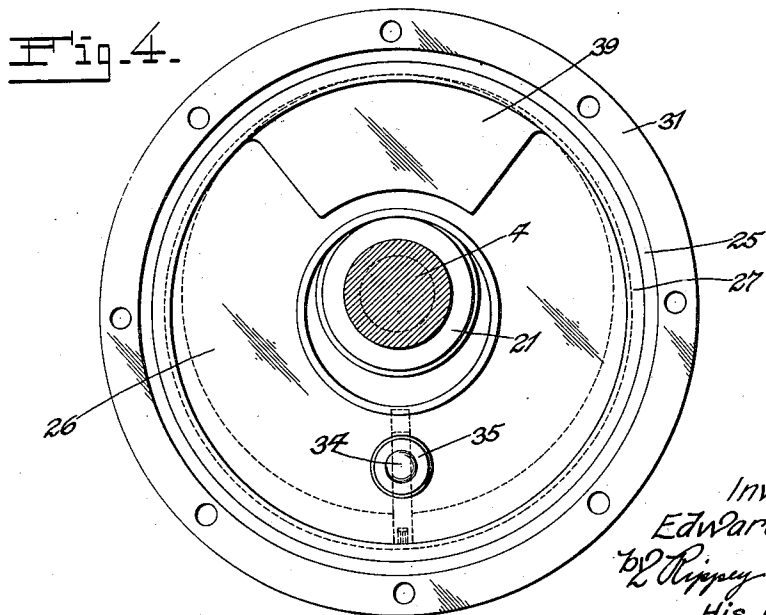
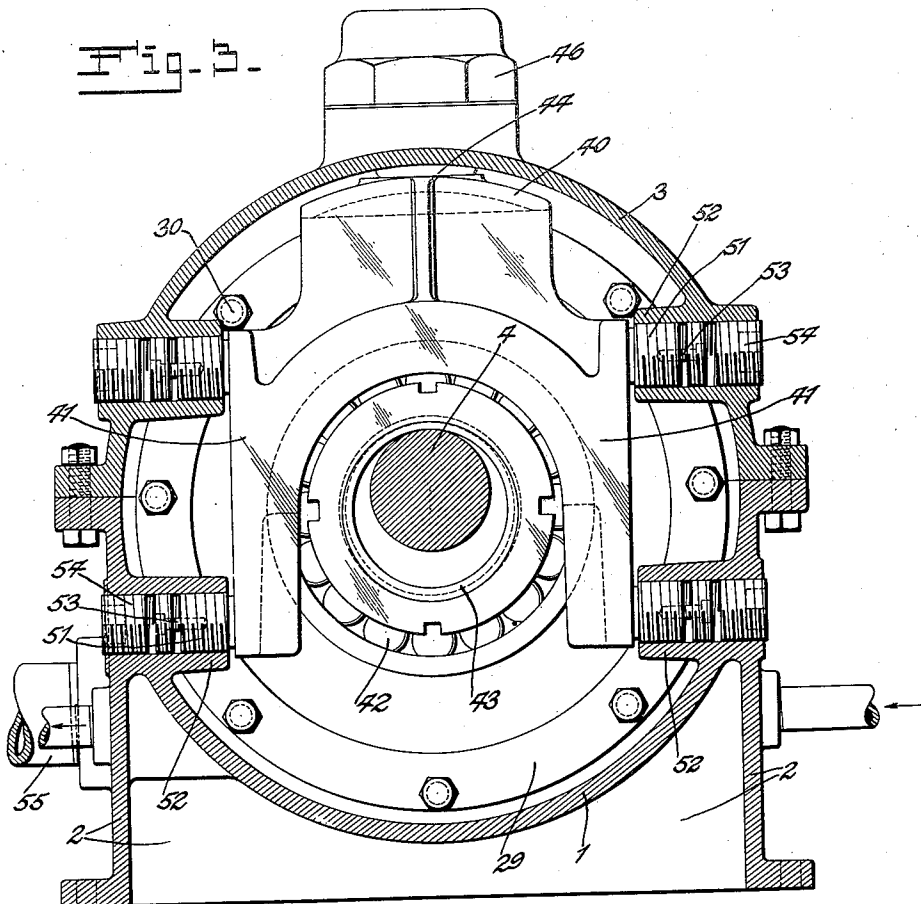
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E. WILSON

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4 Sheets-Sheet 3



Inventor:
Edward Wilson,
by Rippey & Kingland,
His Attorneys.

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Fig. 5.

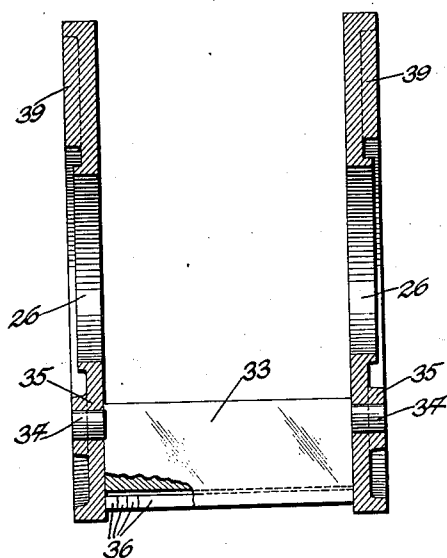


Fig. 6.

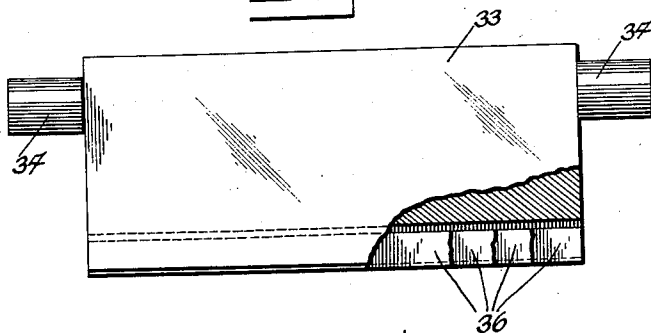
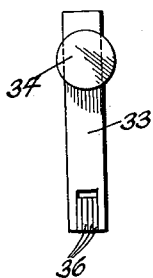


Fig. 7.



Inventor:
Edward Wilson,
by Rippey & Kingland,
His Attorneys.

UNITED STATES PATENT OFFICE.

EDWARD WILSON, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE NATIONAL PUMP & COMPRESSOR COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF DELAWARE.

COMPRESSOR.

Application filed March 22, 1926. Serial No. 96,371.

This invention relates to compressors, and is adapted for many uses and especially adapted for use as a refrigerating machine.

An object of the invention is to provide an improved compressor designed and adapted for operation for many purposes, and including a stationary housing supporting a rotary shaft having a rotor attached thereto within the housing and supporting a rotor cylinder in floating relationship to the shaft and provided with equipment for effecting compression of the air or gas and discharging the compressed air or gas into the housing.

Another object of the invention is to provide an improved compressor in which the rotor and a rotor cylinder in which it is enclosed are maintained in the proper cooperative relationship to effect compression of the air or gas as an incident to the operation of the rotor.

Another object of the invention is to provide an improved compressor of simplified construction that is highly efficient in operation, durable, and which may be manufactured at comparatively low cost to supply the existing need and public demand for such a machine.

Other objects of the invention will appear from the following description, reference being made to the accompanying drawings in which—

Fig. 1 is a vertical longitudinal sectional view of my improved compressor.

Fig. 2 is a vertical cross sectional view approximately on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view approximately on the line 3—3 of Fig. 1.

Fig. 4 is an end elevation of the cylinder with the cylinder end plate removed showing the trunnion plate of the rotor in elevation therein and the shaft in section.

Fig. 5 is a cross sectional view of the trunnion plates of the rotor showing the connection of the piston plate therewith.

Fig. 6 is a view of the piston plate detached from the trunnion plates and partly in section.

Fig. 7 is an end elevation of the piston plate.

The housing of the machine comprises a lower housing member 1 having a support-

ing flange 2 which, when placed upon a supporting base, forms a confined chamber adapted to contain water as a cooling medium for the machine; and an upper housing member 3 the lower edge of which is seated upon the upper edge of the lower housing member to form a housing enclosing the compressor mechanism.

A shaft 4 is journaled in anti-friction bearings 5 mounted in the end walls of the housing and is held from longitudinal movement in either direction by shoulders 6 against the inner sides of said bearings. To one end of the housing a chamber 7 is attached and supports a sealing device around the shaft 4 comprising a shouldered cylindrical member 8 having its inner end engaging the inner ring of the anti-friction bearing 5. The member 8 is held in place by a ring 9 against the outer end thereof and a nut 10 screwed on the shaft. Sealing rings 11 encircle the reduced portion of the member 8 and by lateral contact with said member 8 and with rings 12 and by peripheral contact with the wall of the housing 7 form a seal.

A similar sealing device to the parts of which like reference characters are applied is provided adjacent to the bearing 5 at the opposite end of the housing, the rings 11 of the second sealing device contacting with the inner wall of the chamber 13. An inlet pipe 14 opens into the chamber to admit thereto the air or gas to be compressed. The shaft 4 extends into the chamber 13 and is hollow from said end a sufficient distance to form a passage to admit into the compressor the air or gas to be compressed. A valve disc 15 has a stem 16 operating in a guide 17 and is movable to and from position to open and to close the inlet opening 18 to the chamber 13. A pipe 19 opens into the chamber 13 through the guide 17 and a port 20.

The rotor shown rotates with the shaft 4 within the housing of the machine. The rotor is of improved construction comprising a hub 21, a circumferential flange or web 22 integral with the hub approximately midway of its length, a cylinder 23 integral with the flange or web 22, and a series of webs 24 integrally connecting the hub 21, the

cylinder 23 and the flange or web 22. This construction provides a cored or chambered cylinder.

A cylinder 25, having a number of circumferential cooling ribs or fins 25^a, of larger inside diameter than the outside diameter of the rotor cylinder 23 is supported upon the upper peripheral portion of and surrounds said cylinder 23 (Fig. 2). Within the cylinder 25 at each end of the rotor an annular trunnion plate 26 is mounted, said trunnion plates bearing against the ends of the rotor cylinder 23 and having their peripheries within grooves 27 in the cylinder 25. The trunnion plates 26 are pressed inwardly against the rotor cylinder 23 by springs 28 interposed between the trunnion plates and end plates 29 attached to the cylinder 25 by bolts 30 passing through the end plates 29 and circumferential flanges 31 on the cylinder 25.

The rotor is provided with a radial slot 32 in which a piston plate 33 is mounted and has its outer edge held in contact with the cylinder 25. The ends of the piston plate have trunnions 34 mounted in bearings 35 in the trunnion plates 26. Packing or sealing strips 36 are mounted in a groove in the outer edge of the piston plate 33 and, by contact with the inner surface of the cylinder 25, form an impervious joint. The ends of the piston plate 33 fit closely against the inner surfaces of the trunnion plates 26 and prevent the passage of air or gas between said parts.

The rotor is provided with a counterbalance weight 37 diametrically opposite from the heavier part 38 of the rotor in which the piston plate 33 is mounted and the inlet and outlet passages are formed as hereinafter described. So, too, the trunnion plates 26 are provided with weights 39 diametrically opposite from and counterbalancing the piston plate 33.

A yoke 40 extends longitudinally above the cylinder 25 and has a pair of depending arms 41 at each end (Fig. 3) embracing and thrusting upon anti-friction bearings 42 mounted on hub portions 43 formed integral with and extending outwardly from the end plates 29. Springs 44 (Fig. 1) mounted in hollow spring seats 45 press upon the yoke 40 causing the yoke to hold the cylinder 25 close against the rotor 23. The spring seats 45 are screwed in threaded holes in the upper housing member 3 and, because of such arrangement, may be adjusted to vary the tension of the springs 44. Caps 46 are screwed upon the extended ends of the spring seats 45 and, by pressure upon packing 47, obtain hermetic joints.

From the bore in the shaft 4 a passage 48 opens into a passage 49 through the rotor. The passage 49 intersects the periphery of the rotor near the rear side of the piston

plate 33. As seen in Fig. 2 the rotor turns in a counterclockwise direction so that as the area of the space at the right of the piston plate diminishes compression is obtained. As the space at the right of the piston plate 33 diminishes the space at the left increases in volume, becoming filled with air or gas. When the piston plate passes beyond the upper vertical radius of the rotor the air or gas that had entered through the passage 49 is continuously and successively compressed and forced through a valve 50 into the rotor, and thence through the openings in the trunnion plates 26 and the cylinder end plates 29 into the housing of the machine.

To maintain the yoke 40 in proper relationship to its associated parts guides 51 (Fig. 3) are screwed in threaded parts 52 of the machine housing at the outer sides of the respective arms 41 of the yoke. These screws hold the yoke centered and permit free operation of the yoke. The guides 51 may be firmly held in their adjusted positions by lock screws 53 and the openings may be hermetically sealed by pipe plugs 54 screwed in the outer ends of the parts 52.

The compressed air or gas is conducted from the machine through an outlet pipe 55.

From the foregoing and by reference to Figs. 1 and 2, it will be understood that as the rotor turns in a counterclockwise direction air or gas is drawn into the machine through the inlet pipe 14 and through the several passages comprising the hollow shaft 4, slot 48 and passage 49, to the space between the rotor and the cylinder 25. As the rotor continues to rotate in a counterclockwise direction the air or gas is compressed and forced through the valve 50, and thence from the rotor through the openings in the trunnion plates 26 and the end plates 29 into the machine housing.

This machine may be manufactured at comparatively low cost and sold to meet an existing public need for an inexpensive refrigerating machine and other purposes. The parts and assembly are not complicated. They are of strong construction and durable quality and may be maintained in proper cooperative relationship without difficulty. The structure of the machine may be varied within equivalent limits without departure from the nature and principle of the invention, as set forth in the appended claims.

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

1. A compressor comprising a rotor, a cylinder enclosing and supported by the rotor, a yoke supported by the cylinder, and devices exerting pressure upon the yoke in a direction to press the cylinder against the rotor.
2. A compressor comprising a rotor, a cylinder enclosing and supported by the rotor, a yoke supported by the cylinder, devices ex-

erting pressure upon the yoke in a direction to press the cylinder against the rotor, and guides between which said yoke is movable.

3. A compressor comprising a rotor, a cylinder enclosing and supported by the rotor, hubs extending from the ends of said cylinder, and a yoke supported by said hubs and exerting pressure thereon in a direction to press the cylinder against the rotor.

4. A compressor comprising a rotor, a cylinder enclosing and supported by the rotor, hubs extending from the ends of said cylinder, a yoke supported by said hubs and exerting pressure thereon in a direction to press the cylinder against the rotor, and devices exerting pressure against said yoke in a direction to press said cylinder against the rotor.

5. A compressor comprising a rotor, a cylinder enclosing and supported by the rotor, end plates attached to the cylinder, annular plates between said end plates and the ends of the rotor, a spring between each end plate and the adjacent annular plate pressing said annular plate against the end of the rotor, and a device supported by said end plates pressing the cylinder against the rotor.

6. A compressor comprising a rotor, a cylinder enclosing and supported by the rotor, end plates attached to the cylinder, annular plates between said end plates and the ends of the rotor, a spring between each end plate and the adjacent annular plate pressing said annular plate against the end of the rotor, a device supported by said end plates pressing the cylinder against the rotor, and springs exerting pressure upon said device in a direction to press the cylinder against the rotor.

7. A compressor comprising a housing, a hollow shaft journaled for rotation in said housing, sealing devices between said shaft and the walls of said housing, a rotor attached to said shaft in said housing, a cylinder enclosing and supported by said rotor and being of larger diameter than said rotor leaving spaces between the rotor and the cylinder on opposite sides of the place of contact of said cylinder with said rotor, annular plates between the ends of said cylinder and said rotor, a passage forming a communication from said hollow shaft to said space between said cylinder and rotor, and a piston supported by said plates effecting compression and forcing the compressed medium from said space into said housing outside of said cylinder.

8. A compressor comprising a housing, a hollow shaft journaled for rotation in said housing, sealing devices between said shaft and the walls of said housing, a rotor attached to said shaft in said housing, a cylinder enclosing and supported by said rotor and being of larger diameter than said rotor leaving spaces between the rotor and the cylinder

on opposite sides of the place of contact of said cylinder with said rotor, annular plates between the ends of said cylinder and said rotor, a passage forming a communication from said hollow shaft to said space between said cylinder and rotor, a piston supported by said plates effecting compression and forcing the compressed medium from said space into said housing outside of said cylinder, and yielding devices pressing said cylinder into contact with said rotor.

9. A compressor comprising a rotor, a rotary cylinder enclosing and supported wholly by the rotor, a yoke supported by the cylinder, and devices exerting pressure upon the yoke in a direction to press the cylinder against the upper side of the rotor leaving a space between the lower side of the rotor and the cylinder.

10. A compressor comprising a rotor, a rotary cylinder enclosing and supported by the rotor and having an outward extension from each end wall, a bearing support upon each of said extensions, and a yoke pressing against said bearings and pressing the cylinder against the rotor.

11. A compressor comprising a rotor, a rotary cylinder of larger internal diameter than the external diameter of the rotor enclosing and supported by the rotor, a yoke supported by the cylinder and pressing the cylinder into contact with the rotor, and means holding the yoke from turning with the cylinder.

12. A compressor comprising a rotor, a rotary cylinder eccentrically enclosing and supported wholly by the rotor, means for pressing the cylinder into contact with the rotor, and a stationary housing enclosing all of said parts.

13. A compressor comprising a rotor, a rotary cylinder eccentrically enclosing and supported by the rotor, a piston in connection with the rotor and extending across the space between the rotor and the cylinder into contact with the cylinder, means for operating said piston, means for admitting air or gas through the rotor into the space between the periphery of the rotor and the cylinder, means for positively rotating the rotor leaving the cylinder to be turned only by frictional contact with the rotor, and a spring actuated element for pressing the cylinder into contact with the rotor.

14. A compressor comprising a rotor, a cylinder eccentrically enclosing the rotor and being wholly supported by bearing upon the upper peripheral portion of the rotor, a shaft extending through the cylinder and the rotor and being wholly out of contact with the cylinder, bearings supported by the cylinder, a yoke pressing against said bearings in a direction to press the cylinder against the upper peripheral portion of the rotor.

15. A compressor comprising a rotor, a cylinder eccentrically enclosing the rotor and being wholly supported by bearing upon the upper peripheral portion of the rotor, a shaft extending through the cylinder and the rotor and being wholly out of contact with the cylinder, bearings supported by the cylinder, a yoke pressing against said bearings in a direction to press the cylinder against the upper peripheral portion of the rotor, means for conducting air or gas through said shaft and through the rotor to the space between the periphery of the rotor and the cylinder, and a piston extending from the rotor to the periphery of the cylinder.

16. A compressor comprising a shaft; a hub attached to said shaft; a circumferential web integral with said hub intermediate of its ends; a cylindrical portion concentric with said shaft and integral with said web; radial webs integral with said hub, said circumferential web and said cylindrical portion; a cylinder eccentrically enclosing and supported by said cylindrical portion; spring actuated devices for pressing said cylinder into contact with said cylindrical portion at their upper sides leaving a space between said cylinder and said cylindrical portion at the sides of their line of contact; means for conducting air or gas into the space between said cylindrical portion and said cylinder; and means for effecting compression of the air or gas.

17. A compressor comprising a rotor shaft, a rotor attached to said shaft, a rotary cylinder eccentrically enclosing and supported by said rotor, an annular plate at each end of said rotor within said cylinder, resilient elements pressing said plates toward the rotor, a piston connected with said plates and movable radially within the rotor and retained in permanent contact with the inner periphery of the cylinder, bearings supported by the cylinder, a yoke supported by said bearings, guides for said yoke, and springs pressing said yoke against said bearings.

18. A compressor comprising a rotor, a cylinder of larger internal diameter than the external diameter of the rotor supported eccentrically by the rotor, a piston operatively connected with the rotor and maintained in permanent contact with the inner periphery of the cylinder, a yoke wholly supported by the cylinder, and springs pressing upon said yoke.

19. A compressor comprising a rotary cylinder, a rotor within and supporting the cylinder in eccentric relationship thereto, a pair of annular plates between which the rotor is mounted, a radial piston connected with said plates and movable radially within the rotor and maintaining permanent contact with the inner periphery of the cylinder, a passage

through the rotor intersecting the periphery of the rotor near one side of said piston, and a valve controlled passage through the rotor at the opposite side of said piston.

20. A compressor comprising a rotary cylinder, a rotor within and supporting the cylinder in eccentric relationship thereto, a pair of annular plates between which the rotor is mounted, a radial piston connected with said plates and movable radially within the rotor and maintaining permanent contact with the inner periphery of the cylinder, a passage through the rotor intersecting the periphery of the rotor near one side of said piston, a valve controlled passage through the rotor at the opposite side of said piston, and a housing enclosing all of said parts and being in communication with the valve controlled passage.

21. A compressor comprising a housing, a rotor shaft supported by the housing, a rotor attached to the shaft within the housing, a rotary cylinder supported eccentrically by the rotor, bearings mounted on and supported by said cylinder, and a yoke pressing against said bearings.

22. A compressor comprising a housing, a rotor shaft supported by the housing, a rotor attached to the shaft within the housing, a rotary cylinder supported eccentrically by the rotor, bearings mounted on and supported by said cylinder, a yoke pressing against said bearings, guides for the yoke, and springs pressing the yoke against said bearings.

23. A compressor comprising a rotary shaft, a cylinder, mechanism mounted on the shaft within the cylinder supporting the cylinder in eccentric relationship to and wholly out of contact with the shaft, and means for effecting compression within said cylinder when said shaft and said mechanism are rotated.

24. A compressor comprising a rotary shaft, a cylinder, mechanism mounted on the shaft within the cylinder supporting the cylinder in eccentric relationship to and wholly out of contact with the shaft, means for effecting compression within said cylinder when said shaft and said mechanism are rotated, a yoke holding the cylinder in proper relationship to the other parts, and springs pressing upon said yoke.

25. A compressor comprising a housing, a shaft rotatively supported by said housing, a cylinder within said housing, and compressor mechanism within said cylinder driven by said shaft and supporting said cylinder in eccentric relationship to and out of contact with said shaft.

26. A compressor comprising a housing, a shaft rotatively supported by said housing, a cylinder within said housing, compressor mechanism within said cylinder driven by said shaft and supporting said cylinder in

eccentric relationship to and out of contact with said shaft, and a passage for conducting air or gas between the compressor mechanism and the cylinder.

27. A compressor comprising a housing, a shaft rotatively supported by said housing, a cylinder within said housing, compressor mechanism within said cylinder driven by said shaft and supporting said cylinder in eccentric relationship to and out of contact with said shaft, and a passage for conducting air or gas between the compressor mechanism and the cylinder and therefrom into the housing outside of the cylinder.

28. A compressor comprising a housing, a shaft rotatively supported by said housing, a cylinder within said housing, compressor mechanism within said cylinder driven by said shaft and supporting said cylinder in eccentric relationship to and out of contact with said shaft, a passage for conducting air or gas between the compressor mechanism and the cylinder and therefrom into the housing outside of the cylinder, and means forming a seal between the shaft and the housing.

29. A compressor comprising a housing, a shaft rotatively supported by said housing, a sealing device between the shaft and the housing, a cylinder within said housing, mechanism cooperating with said cylinder and driven by said shaft and supporting said cylinder in eccentric relationship to and out of contact with said shaft for effecting compression by rotation of said shaft, a yoke supported by said cylinder, and elements exerting pressure against said yoke to maintain proper cooperative relationship between said cylinder and said mechanism.

30. A compressor comprising a housing, a shaft rotatively supported by said housing, a sealing device between the shaft and the housing, a cylinder within said housing, mechanism cooperating with said cylinder and driven by said shaft and supporting said cylinder in eccentric relationship to and out of contact with said shaft for effecting compression by rotation of said shaft, a yoke supported by said cylinder, elements exerting pressure against said yoke to maintain proper cooperative relationship between said cylinder and said mechanism, and guides for said yoke preventing lateral vibration of said yoke.

31. A compressor comprising a housing, a shaft rotatively supported by said housing, sealing means between said shaft and said housing, a cylinder rotative within said housing and out of contact with said shaft, mechanism attached to said shaft within said cylinder and supporting said cylinder in eccentric relationship to said shaft and said mechanism, and passages for conducting air or gas between said mechanism and said cylinder and from between said mechanism and

said cylinder into the housing outside of said cylinder.

32. A compressor comprising a housing, a shaft rotatively supported by said housing, sealing means between said shaft and said housing, a cylinder rotative within said housing and out of contact with said shaft, mechanism attached to said shaft within said cylinder and supporting said cylinder in eccentric relationship to said shaft and said mechanism, passages for conducting air or gas between said mechanism and said cylinder and from between said mechanism and said cylinder into the housing outside of said cylinder, and yielding devices for maintaining proper contact between said cylinder and said mechanism.

33. A compressor comprising a housing, a shaft rotatively supported by said housing, sealing means between said shaft and said housing, a cylinder rotative within said housing and out of contact with said shaft, mechanism attached to said shaft within said cylinder and supporting said cylinder in eccentric relationship to said shaft and said mechanism, passages for conducting air or gas between said mechanism and said cylinder and from between said mechanism and said cylinder into the housing outside of said cylinder, yielding devices for maintaining proper contact between said cylinder and said mechanism, and means for preventing lateral displacement of said devices.

34. A compressor comprising a rotary shaft, a cylindrical rotor attached to said shaft, a rotary cylinder supported by said rotor in floating and eccentric relationship to said shaft, means for conducting air or gas between said rotor and said cylinder, a piston in connection with said rotor contacting with the interior periphery of said cylinder, a valve controlled passage for conducting air or gas from one side of said rotor through said rotor and said cylinder, and a housing confining the parts aforesaid.

35. A compressor comprising a housing, a rotary shaft extending through said housing, bearings supported by said housing in which said shaft is journaled, hermetic sealing devices between said shaft and said housing preventing escape of air or gas from said housing, a rotor attached to said shaft within said housing, a cylinder supported in eccentric relationship to said rotor and in eccentric and floating relationship to said shaft, means for effecting compression within said cylinder when said rotor is rotated by said shaft, and means for conducting the compressed air or gas from within said cylinder to said housing outside of said cylinder.

36. A compressor comprising a housing, a rotary shaft extending through said housing, bearings supported by said housing in which said shaft is journaled, hermetic sealing devices between said shaft and said housing

preventing escape of air or gas from said housing, a rotor attached to said shaft within said housing, a cylinder supported in eccentric relationship to said rotor and in eccentric and floating relationship to said shaft, means for effecting compression within said cylinder when said rotor is rotated by said shaft, means for conducting the compressed air or gas from within said cylinder to said housing outside of said cylinder, and devices for pressing said cylinder in close contact with said rotor.

37. A compressor comprising a housing, a rotary shaft extending through said housing, bearings supported by said housing in which said shaft is journaled, hermetic sealing devices between said shaft and said housing preventing escape of air or gas from said housing, a rotor attached to said shaft within said housing, a cylinder supported in eccentric relationship to said rotor and in eccentric and floating relationship to said shaft, means for effecting compression within said cylinder when said rotor is rotated by said shaft, means for conducting the compressed air or gas from within said cylinder to said housing outside of said cylinder, and devices for pressing said cylinder in close contact with said rotor and permitting differential rotation of said rotor and said cylinder.

38. In a compressor, the combination of a rotor having a radial slot, a piston plate mounted in said slot for radial movements therein, a trunnion plate operatively connected with said piston plate at each end of the rotor movable eccentrically with respect to the rotor, and a cylinder enclosing the rotor and said trunnion plates and effecting relative movement of the trunnion plates and the rotor to move said piston plate.

39. A compressor comprising a rotary shaft, a rotor attached to and concentric with the shaft, and having a radial slot, a trunnion plate at each end of the rotor, a piston plate in said slot connected with said trunnion plates and movable thereby radially in said slot, and a cylinder enclosing said rotor and said trunnion plates and having independent rotative and floating relationship to said shaft.

40. A compressor comprising a rotary shaft, a rotor attached to and concentric with the shaft, and having a radial slot, a trunnion plate at each end of the rotor, a piston plate in said slot connected with said trunnion plates and movable thereby radially in said slot, and a cylinder enclosing said rotor and said trunnion plates and having independent rotative and floating relationship to said shaft and arranged to operate said trunnion plates in floating relationship to said shaft to move said piston plate.

41. A compressor comprising a rotary shaft, a rotor attached to said shaft and be-

ing concentric therewith and having a radial slot, a trunnion plate at each end of said rotor in eccentric relationship to said rotor and to said shaft, a piston plate in said slot and connected with said trunnion plates, and a cylinder supported by and enclosing said rotor in eccentric and floating relationship to said shaft and holding said trunnion plates in eccentric relationship to said rotor and said shaft.

42. A compressor comprising a rotary shaft, a rotor attached to said shaft and being concentric therewith and having a radial slot, a trunnion plate at each end of said rotor in eccentric relationship to said rotor and to said shaft, a piston plate in said slot and connected with said trunnion plates, a cylinder supported by and enclosing said rotor in eccentric and floating relationship to said shaft and holding said trunnion plates in eccentric relationship to said rotor and said shaft, and counterbalance weights in connection with said trunnion plates cooperative with said piston plate.

43. A compressor comprising a rotary shaft, a rotor attached to said shaft and provided with a radial slot, a trunnion plate at each end of said rotor in eccentric relationship thereto and in floating relationship to said shaft, a piston plate attached to said trunnion plates in said slot, counterbalance structure for said piston plate in connection with said trunnion plates, and a rotative cylinder enclosing said rotor and said trunnion plates in eccentric and floating relationship to said shaft.

44. A compressor comprising a rotary shaft, a rotor attached to said shaft and provided with a radial slot, a trunnion plate at each end of said rotor in eccentric relationship thereto and in floating relationship to said shaft, a piston plate attached to said trunnion plates in said slot, counterbalance structure for said piston plate in connection with said trunnion plates, a rotative cylinder enclosing said rotor and said trunnion plates in eccentric and floating relationship to said shaft, and means for holding said cylinder in contact with said rotor and said trunnion plates.

45. A compressor comprising a rotary shaft, a rotor attached to said shaft and having a radial slot, a trunnion plate at each end of said rotor, a piston plate connected with said trunnion plates and being operative thereby in said slot, a cylinder enclosing said rotor and said trunnion plates in eccentric relationship to said shaft and said rotor, and being supported by said rotor in eccentric relationship to said shaft and said rotor, and in concentric relationship to said trunnion plates and controlling said trunnion plates to move said piston radially in said slot in said rotor.

46. A compressor comprising a rotary

shaft, a rotor attached to said shaft and having a radial slot, a trunnion plate at each end of said rotor, a piston plate connected with said trunnion plates and being operative thereby in said slot, a cylinder enclosing said rotor and said trunnion plates in eccentric relationship to said shaft and said rotor, and being supported by said rotor in eccentric relationship to said shaft and said rotor, and in concentric relationship to said trunnion plates and controlling said trunnion plates to move said piston radially in said slot in said rotor, and means for holding said cylinder in contact with said rotor. 10

EDWARD WILSON.