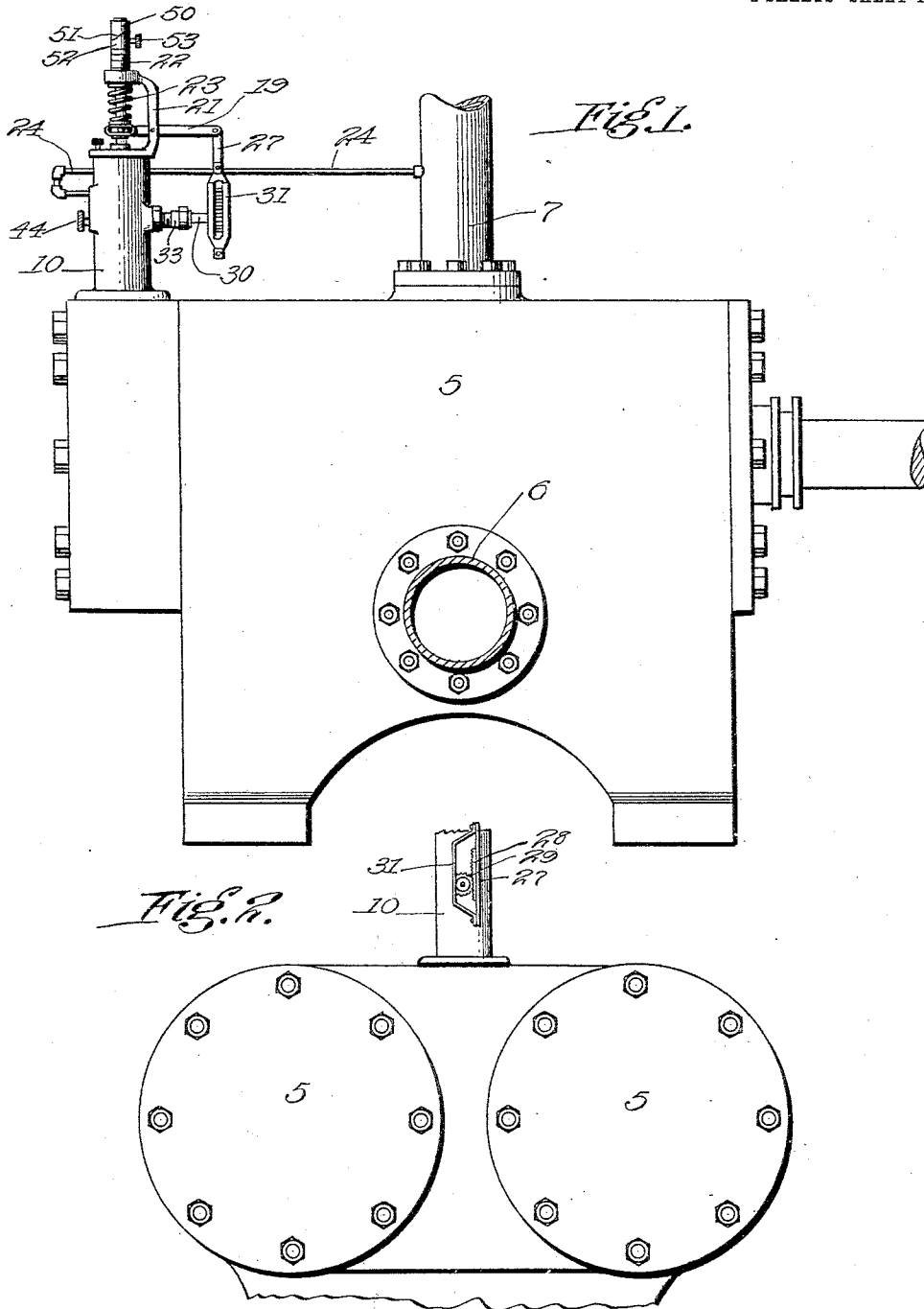


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GOVERNOR FOR AIR COMPRESSORS.
APPLICATION FILED SEPT. 11, 1908.

934,323.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



Witnesses
James T. Backelaw
Ollie Palmer.

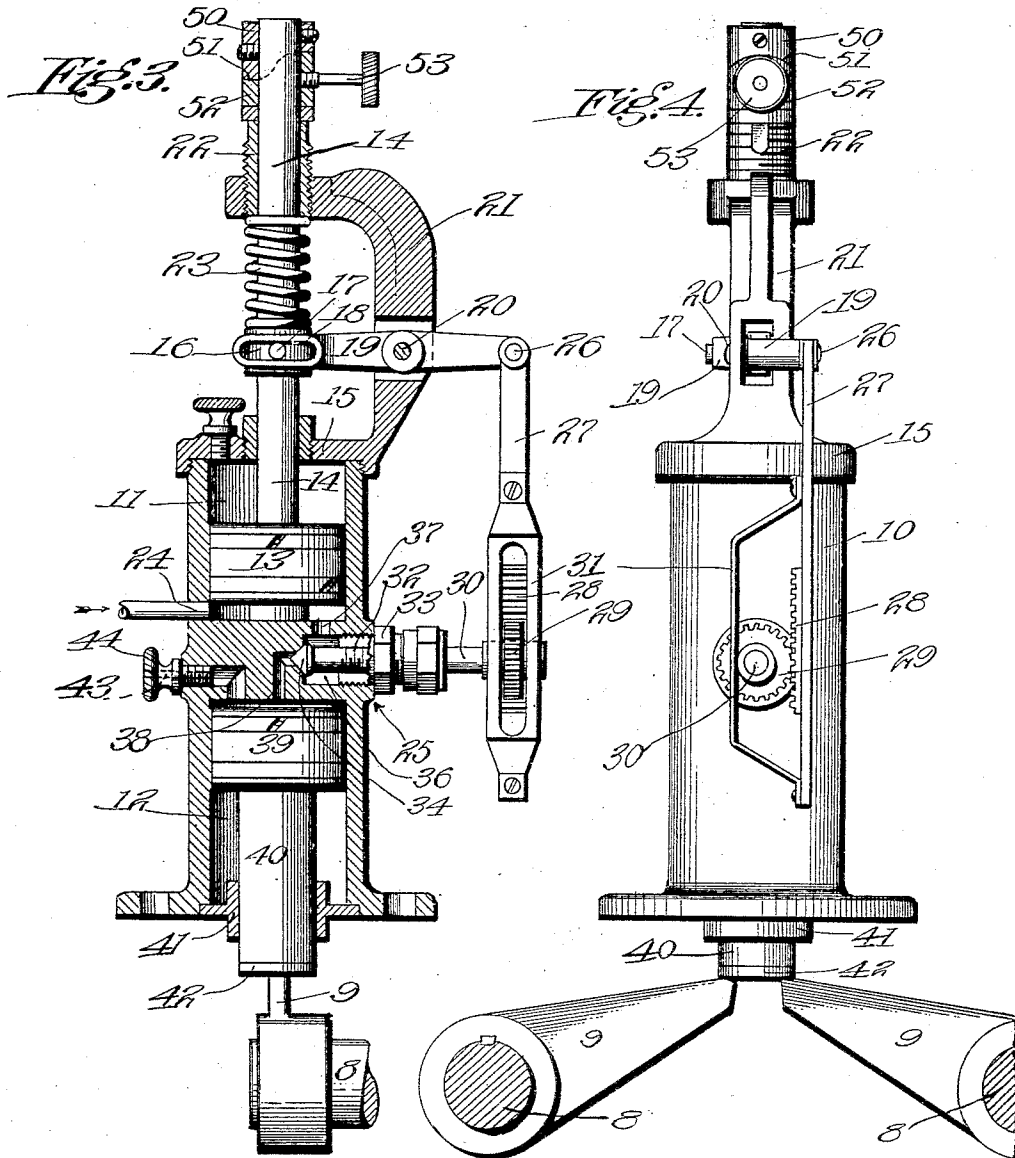
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UNITED STATES PATENT OFFICE.

JOHN H. KLOER AND DORSEY B. LEAVELL, OF LOS ANGELES, CALIFORNIA.

GOVERNOR FOR AIR-COMPRESSORS.

934,323.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed September 11, 1908. Serial No. 452,530.

To all whom it may concern:

Be it known that we, JOHN H. KLOER and DORSEY B. LEAVELL, citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Governors for Air-Compressors, of which the following is a specification.

This invention relates to a pressure governor to operate in conjunction with an air compressor and to keep the fluid pressure produced thereby at a constant point.

The invention consists of a mechanism adapted to act upon the valve levers of the compressor and to render the valves inoperative when the pressure exceeds a predetermined amount.

The governing mechanism comprises a spring seated pressure actuated valve adapted to open when the pressure is excessive. This valve controls the admission of pressure to a cylinder with a piston located therein for direct operation upon the compressor valve levers.

In the accompanying drawings, forming a part of this specification:—Figure 1,—is a side elevation of the cylinders of a double cylinder compressor equipped with the governor. Fig. 2,—is an end elevation of the same. Fig. 3,—is an enlarged longitudinal central section of the governor. Fig. 4,—is a rear elevation of the same.

In the drawings 5 designates the cylinders of a double cylinder compressor of general type having intake pipe 6 and compression pipe 7. Valve stems 8 of the cylinders are provided with arms 9 on their ends and, as in the usual construction, it is only necessary to hold arms 9 down to the position shown in dotted lines in Fig. 4 to render the valves inoperative and consequently to stop the further compression of fluid through pipe 7. The present governor is designed to force these valve arms downwardly when the pressure in pipe 7 or in a connected tank or other storage chamber becomes excessive and to allow the valves to return to their normal operative positions when the pressure falls to the normal again.

The governor consists of a case 10 having two cylinders 11 and 12 therein. Upper cylinder 11 is provided with a piston 13 on a piston rod 14 which projects upwardly through cylinder head 15 and is provided with a trunnion collar 16 outside of the cylinder. Trunnions 17 on the collar engage

with slots 18 in the lower end of lever 19 pivoted at 20 to frame 21. Frame 21 is mounted upon cylinder head 15 and extends upwardly therefrom to form a guide for the upper end of piston rod 14. Rod 14 passes through an adjustable nut 22 in screw threaded engagement with frame 21 and a coiled spring 23 is confined between trunnion collar 16 and nut 22, the spring tending to press the trunnion collar, and with it the piston rod and piston, downwardly. A feed pipe 24 connects with cylinder 11 below piston 13, the pipe leading from compression pipe 7 of the compressor or from any suitable storage chamber or tank into which the compressor forces the fluid. When the pressure below piston 13 in cylinder 11 has become sufficient to raise the piston against the resilient pressure of spring 23, lever 19 is lower at its outer end and this movement is utilized for opening valve 25 which controls the mechanism operating directly upon the compressor valves.

Pivoted at 26 to the outer end of lever 19 is a downwardly extending bar 27 having a rack 28 mounted thereon in engagement with a pinion 29 mounted on valve stem 30. A guide 31 mounted on bar 27 keeps the rack in engagement with the pinion so that upon any vertical movement of the rack the pinion is correspondingly rotated. Valve stem 30 is screw threaded as at 32 and passes through stuffing box 33 in screw threaded engagement therewith, the threads, in this particular arrangement, being left-handed so that upon the downward movement of bar 27 valve stem 30 is screwed outwardly. Conical valve stopper 34 mounted upon the end of valve stem 30 bears against a correspondingly conical seat 35 and controls the communication between chamber 36 and cylinder 12. A port 37 connects cylinder 11 with chamber 36 so that upon the opening of valve 25 the fluid pressure from pipe 24 will be allowed to pass through cylinder 11, passage 37, chamber 36 and passage way 38 into cylinder 12. A piston 29 is provided on cylinder 12 and piston rod 40 connected thereto projects downwardly and out of the cylinder through guide 41. The lower end of piston rod 40 is provided with a hardened shoe 42 adapted to directly contact with valve arms 9.

If it becomes necessary to manually stop the compression of fluid it is sometimes desirable to accomplish this without stopping

the compressor from action. To provide for this a collar 50 with a cam face 51 is screwed upon piston rod 14 and a revoluble collar 52 with a corresponding cam face is placed between nut 22 and collar 50. By revolving collar 52 the piston rod may be raised and valve 25 opened, thus rendering the compressor valves inoperative. A set screw 53 is provided to hold collar 52 in place.

10 From the foregoing description it will be seen that whenever the pressure rises above a predetermined point piston 39 will be forced downwardly by the entrance of fluid pressure into cylinder 12 above it and the

15 valve arms will be consequently forced into a position to place the valves inoperative. A small leak port 30 is provided through thumb nut 44 so that the pressure within cylinder 12 may escape after the valve has

20 been closed by the downward movement of piston 13 when the pressure in the compression pipe or storage chamber has been reduced to the normal.

What we claim is:—

25 1. A compressor governor, comprising fluid operated means for controlling the com-

pressor valves, fluid operated spring means for controlling the operation of said valve controlling means, and manual means consisting of double cam shaped washers for 30 controlling said spring controlled means.

2. A compressor governor, comprising a casing, means in said casing for controlling compressor valves, spring controlled means in axial alinement with said valve control- 35 ling means, a wall between said valve controlling means and said spring controlled means, said wall having a passage therein leading from said spring controlled means to said valve controlling means, a valve in 40 said passage, means operatively connected with said spring controlled means and said valve and means for manually operating said spring controlled means.

In witness that we claim the foregoing we 45 have hereunto subscribed our names this 2nd day of September, 1908.

JOHN H. KLOER.

DORSEY B. LEAVELL.

Witnesses:

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