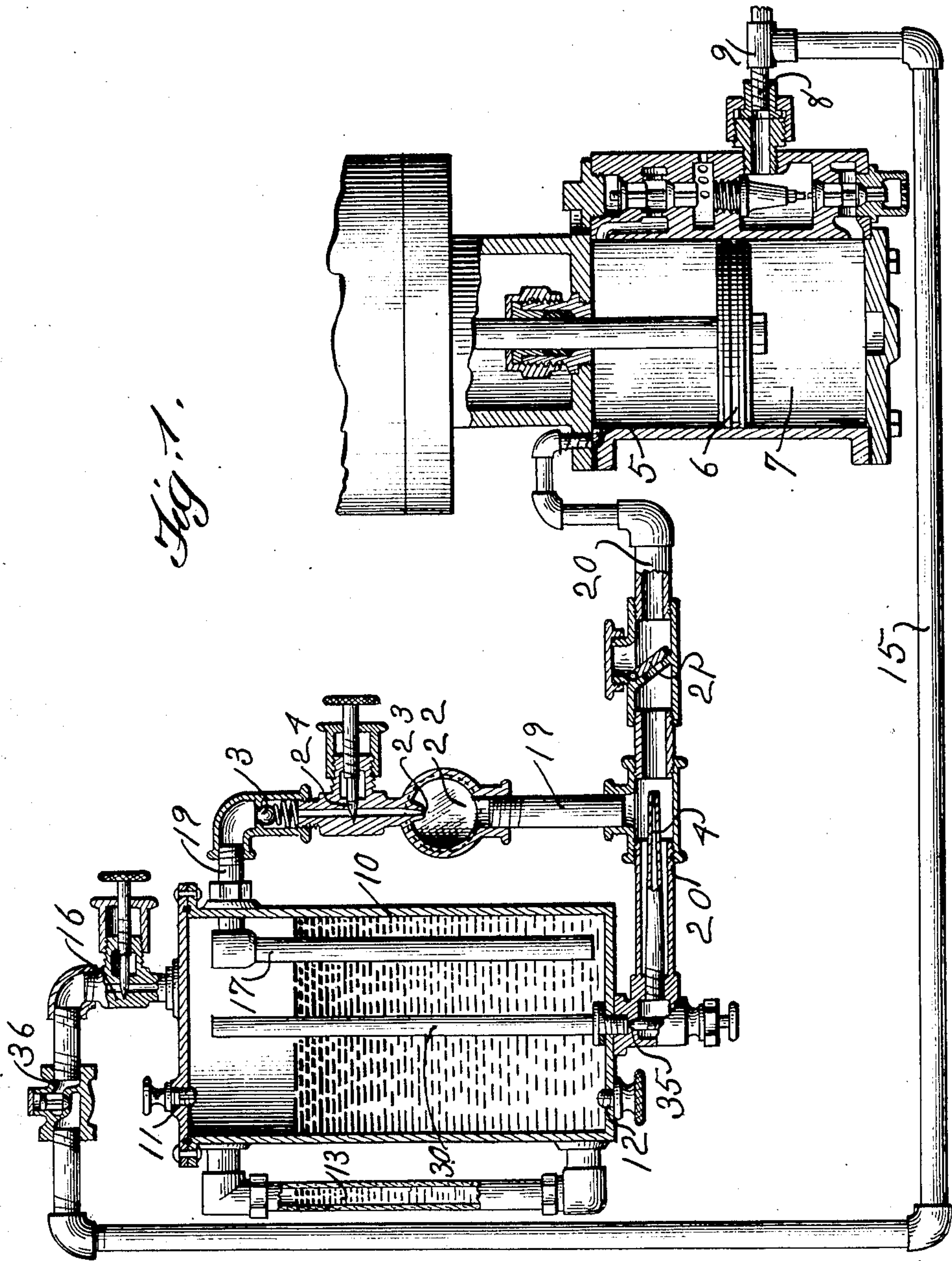


F. T. TALCOTT.
LUBRICATING APPARATUS.
APPLICATION FILED JUNE 20, 1908.

918,392.

Patented Apr. 13, 1909.

2 SHEETS—SHEET 1.



Witnesses:

R. H. Bassett.
R. H. Flint

Inventor.
Frank T. Talcott
by
A. P. Sullivan
Atty

APPLICATION FILED JUNE 20, 1908.

Patented Apr. 13, 1909.

2 SHEETS—SHEET 2.



Witnesses

R. H. Joswell.
R. W. Flint.

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Frank J. Talcott
by
A. P. Perry
Attorney

Attorney

UNITED STATES PATENT OFFICE.

FRANK T. TALCOTT, OF ASHTABULA, OHIO, ASSIGNOR OF ONE-HALF TO J. C. TOPPER, OF ASHTABULA, OHIO.

LUBRICATING APPARATUS.

No. 918,392.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed June 20, 1908. Serial No. 439,559.

To all whom it may concern:

Be it known that I, FRANK T. TALCOTT, a citizen of the United States, residing at Ashtabula, in the county of Ashtabula and State of Ohio, have invented a new and useful Lubricating Apparatus, of which the following is a specification.

My invention relates to improvements in lubricating apparatus for inclosed mechanism, and particularly to lubricating apparatus for air pumps and compressors for fluids, and my object is to provide means whereby in a pump or compressor the moving piston and the interior of the cylinder may be lubricated by oil or other lubricants atomized and forced into the cylinder under pressure created by the forward movement of the piston and whereby the lubricant used may be continuously so introduced at a predetermined rate, if so desired, so long as the piston is in motion and the pump or compressor is therefore in action, and will automatically cease when the pump or compressor stops.

In the drawings accompanying this specification Figure 1 is a sectional elevation of a power air pump equipped with my device, and Fig. 2 is a similar sectional elevation of an air pump equipped with a modified form of my device.

Similar numerals refer to similar parts in the several figures.

The reservoir for lubricant 10 is shown in cylindrical form and is provided at the top and bottom respectively with filling and cleaning openings 11 and 12. At the side of the reservoir 10 is shown a gage glass 13.

Leading from a point 9 on the discharge 8 of the compressor cylinder 7 is a pipe 15 opening into the upper portion of the reservoir 10. This pipe carries fluid from the discharge 8 to the reservoir 10 under pressure induced by the forward movement of the piston 6 and is preferably equipped with a regulating valve 16 to regulate the fluid pressure upon the lubricant contained in the reservoir 10 and a check valve 36 to prevent back pressure.

Leading from a point within the reservoir 10, near the bottom of the reservoir and below the surface of the lubricant contained in the casing, is a discharge pipe 17 extending out of the reservoir 10 and connected to an extension 19 of said pipe 17. The extension 19 connects with a discharge pipe 20 which leads to the intake 5 in the upper portion

of the cylinder 7 of the compressor. The discharge pipe 20 carries fluid under pressure induced by the forward motion of the piston 6. Preferably a sight glass 22 is coupled in the pipe 19 and the pipe terminates in a drip nozzle 23 in the upper portion of the sight glass 22. The pipe 19 is furnished with a suitable valve 24 by means of which the rate at which the lubricant is fed through the sight glass 22 may be controlled.

Leading from the upper portion of the reservoir 10 and from a point above the level of the lubricant contained therein is shown, in Fig. 1, a discharge pipe 30 which passes through the bottom of the reservoir 10 and is connected to the pipe 20 and is furnished, at the point of connection with pipe 20, with a suitable valve 35 by means of which the fluid pressure in the pipe 20 may be controlled. From a point near the valve 35 a nozzle 4 is preferably extended through the pipe 20 to a point beyond the intersection of the extension 19 and the pipe 20 for the purpose of atomizing the lubricant as it drips through the sight glass 22 and the extension 19 to the pipe 20. Preferably, a check valve 3 is placed in the pipe 19 and a check valve 21 in the pipe 20 beyond its intersection with the extension 19.

In the modified form of my invention shown in Fig. 2 a pipe 2 leads directly from a point on the discharge 15 of the compressor cylinder 7 to a valve 14, which valve 14 controls the flow of fluid from the pipe 15 to the pipe 20. The pipe 2, it will be seen, passes entirely outside the reservoir 10. In this form of my device the pipe 2 is preferably equipped with a check valve 18. The pipe 2 may lead from any point on the fluid supply between the discharge 9 and the valve 16. Any device for atomizing the lubricant may be placed in the pipe 20 instead of the contracted nozzle shown in the drawing.

In operation the pressure on the lubricant in the reservoir 10 is fixed and adjusted by the use of the valve 16, the rate of the drip of the lubricant through the sight glass 22 and the extension 19 is fixed by setting the valve 24, and the pressure in the pipe 20 is fixed by setting the valve 35, the pressure in the pipe 20 being made at the outset higher than that in the extension 19 and the difference so fixed being maintained by the action of the check valves shown. During operation the rate of lubrication can be increased

or diminished by adjustment of the controlling valves, and, the initial and operative pressure being taken from the discharge of the compressor, lubrication will automatically cease when the pressure goes down through the stoppage of the piston. The lubricant being introduced in the form of a spray, above the piston and during its forward stroke, the lubrication of the inner walls of the cylinder, against which the piston is moving, is completely accomplished.

I claim as my invention.

1. In a device of the class described, a compressor; a reservoir adapted to contain a lubricant; a fluid supply pipe leading from the discharge side of said compressor to said lubricant reservoir; a second fluid supply pipe adapted to convey fluid to said compressor; means connecting said fluid supply pipes whereby fluid may flow from said first mentioned to said second mentioned fluid supply pipe; a lubricant discharge pipe leading from said reservoir and discharging into said second mentioned fluid supply pipe; and means included in said second mentioned fluid supply pipe for atomizing the lubricant supplied thereto.

2. In a device of the class described, a compressor; a reservoir adapted to contain a lubricant; a fluid supply pipe leading from the discharge side of said compressor to said lubricant reservoir; means included in said fluid supply pipe for controlling the flow of fluid therethrough; a second fluid supply pipe adapted to convey fluid to said compressor; means included in said second fluid supply pipe for controlling the flow of fluid therethrough; means connecting said fluid supply pipes whereby fluid may flow from said first mentioned to said second mentioned fluid supply pipe; a lubricant dis-

charge pipe leading from said reservoir and discharging into said second mentioned fluid supply pipe; means included in said lubricant discharge pipe for controlling the flow of lubricant therethrough; and means included in said second mentioned fluid supply pipe for atomizing the lubricant supplied thereto.

3. In a device of the class described, a compressor; a reservoir adapted to contain a lubricant; a fluid supply pipe leading from the discharge side of said compressor to said lubricant reservoir; means included in said fluid supply pipe for controlling the flow of fluid therethrough; a second fluid supply pipe adapted to convey fluid to said compressor; means included in said second fluid supply pipe for controlling the flow of fluid therethrough; means connecting said fluid supply pipes whereby fluid may flow from said first mentioned to said second mentioned fluid supply pipe; a lubricant discharge pipe leading from said reservoir and discharging into said second mentioned fluid supply pipe; means included in said lubricant discharge pipe for controlling the flow of lubricant therethrough; means included in said second mentioned fluid supply pipe for atomizing the lubricant supplied thereto; and means for maintaining a constant difference between the pressure of fluid in said lubricant discharge pipe and the pressure of fluid in said second mentioned fluid supply pipe.

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

FRANK T. TALCOTT.

Witnesses:

O. M. PARKER,
LE ROY VAN VLECK.