

W. SELAKOSKY.

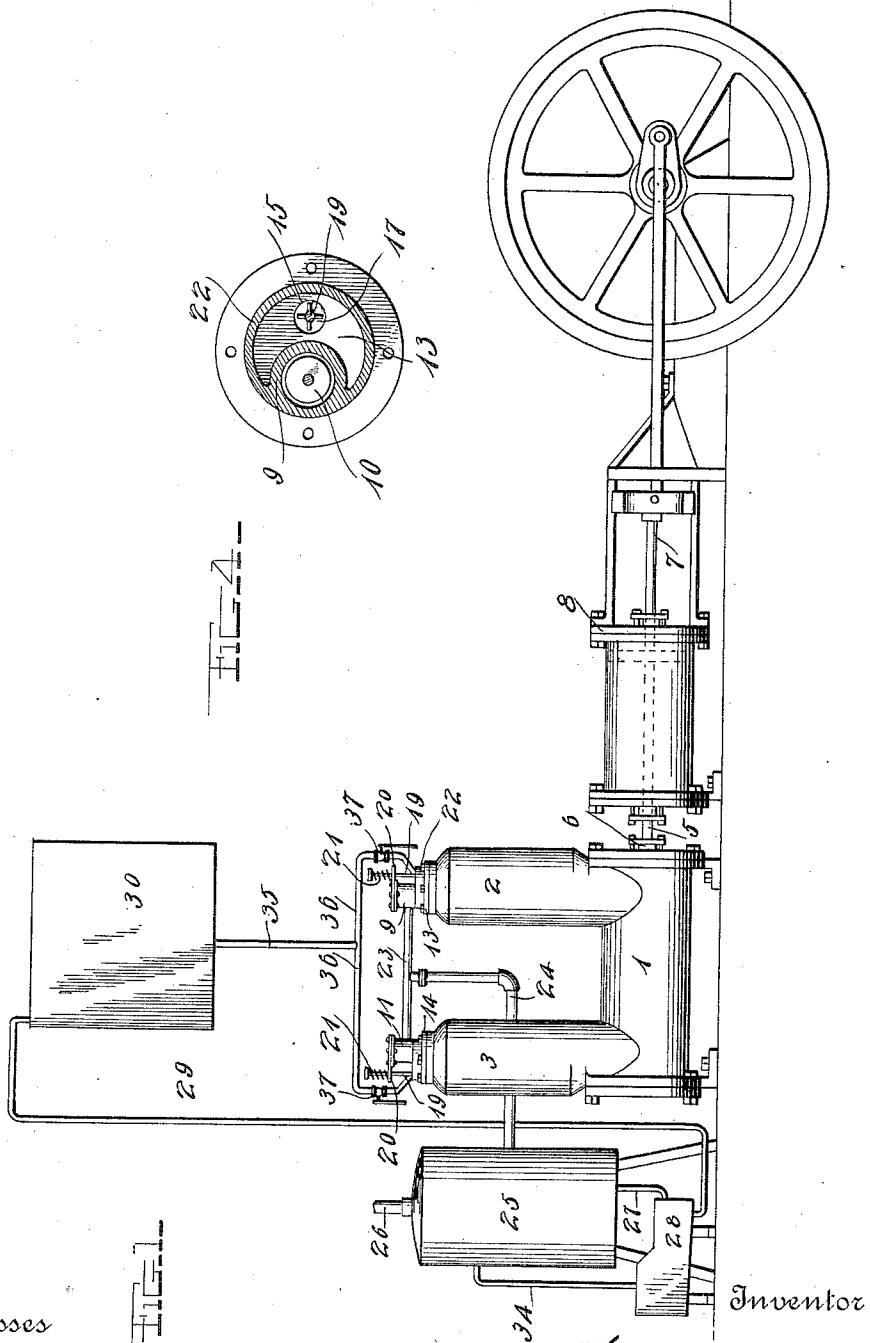
AIR COMPRESSOR.

APPLICATION FILED SEPT. 26, 1911.

1,044,583.

Patented Nov. 19, 1912.

2 SHEETS—SHEET 1.



Witnesses
J. R. Pierce
C. E. Hunt

Inventor
W. Selakosky.
by *A. B. Wilson & Co.*
Attorneys

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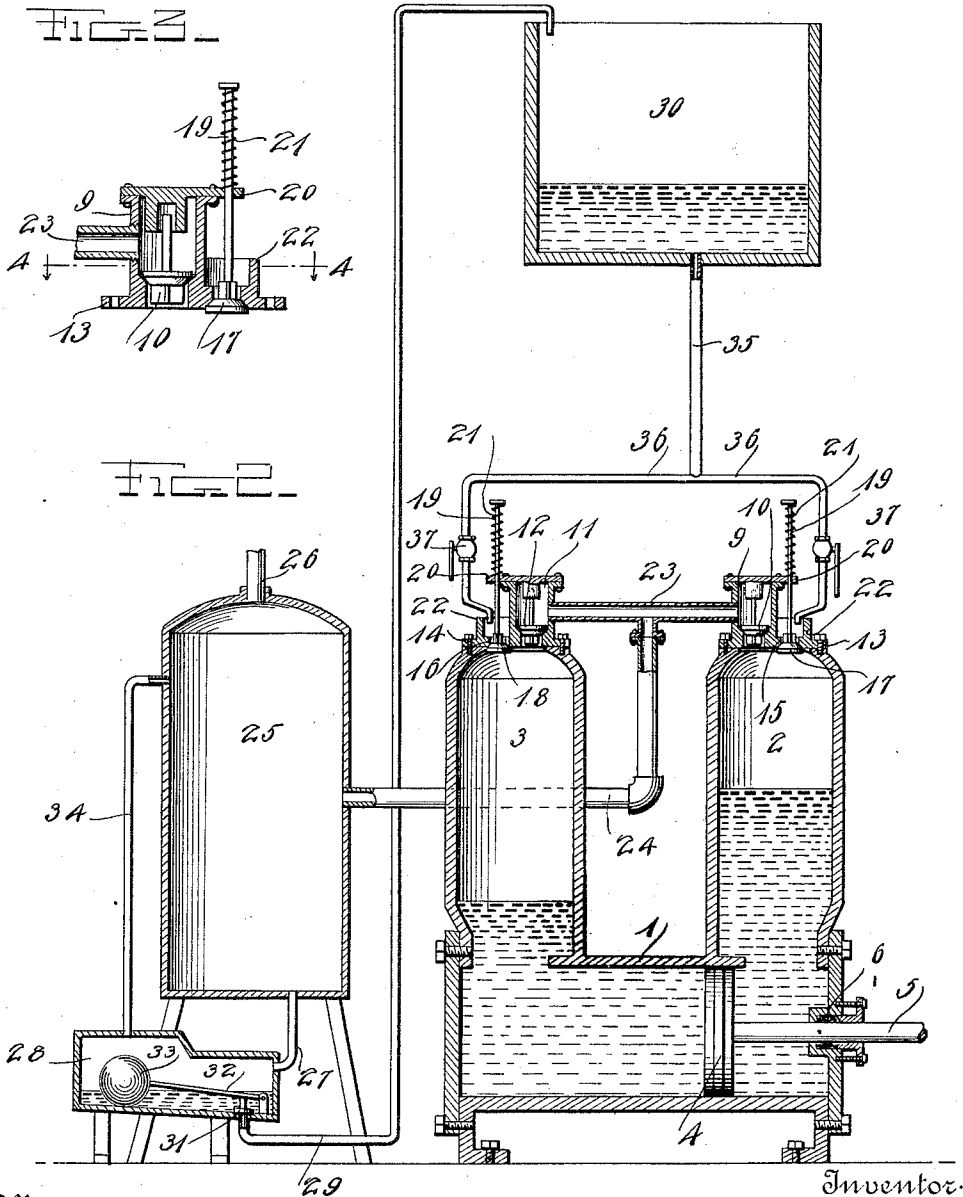
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UNITED STATES PATENT OFFICE.

WILSON SELAKOSKY, OF WHITE HAVEN, PENNSYLVANIA.

AIR-COMPRESSOR.

1,044,583.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed September 26, 1911. Serial No. 651,405.

To all whom it may concern:

Be it known that I, WILSON SELAKOSKY, a citizen of the United States, residing at White Haven, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Air-Compressors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in air compressors.

One object of the invention is to provide an air compressor in which air is compressed by fluid pressure thus reducing the friction of the parts to a minimum and which is provided with an improved construction and arrangement of automatically operating air inlet and discharge valves.

Another object is to provide an air compressor of this character having means whereby the compressing fluid is continuously supplied to the pumping cylinders by the pressure of air contained within the compressed air tank to compensate for the loss of any of this fluid which may have been forced from the cylinders with the air or otherwise removed therefrom thus maintaining at all times the proper quantity of compressing fluid in the cylinders.

A further object is to provide means whereby the compressing fluid which may have been forced or discharged from the pumping cylinders is automatically returned thereto.

With these and other objects in view the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

Figure 1 is a side view of my improved air compressor and the means for operating the same; Fig. 2 is an enlarged vertical sectional view of the compressor; Fig. 3 is a detail vertical sectional view through the cap and the inlet and discharge valves for one of the air compressing chambers; Fig. 4 is a horizontal sectional view on the line 4-4 of Fig. 3.

My improved air compressor comprises a pumping cylinder 1 having arranged on

its opposite ends air receiving and discharging chambers 2 and 3, the inner ends of which communicate with the opposite ends of the cylinder 1 as shown. In the pumping cylinder 1 is arranged a piston 4 which is operatively connected with a piston rod 5 which works through a stuffing box 6 in one end of the cylinder 1 and is secured at its opposite end to any suitable motive power, the same being here shown and is preferably connected with the piston 7 of a steam engine 8 arranged adjacent to the compressor as shown. In the cylinder 1 and the chambers 2 and 3 is placed a suitable quantity of air compressing fluid, said fluid being preferably oil as this form of compressing fluid will not freeze. The compressing fluid extends up into the chambers 2 and 3 to a suitable distance and being disposed on opposite sides of the piston it will be readily seen that as the piston is reciprocated in the cylinder 1 that the level of the fluid will be alternately raised and lowered in the chambers 2 and 3.

On the upper end of the chamber 2 is arranged a valve casing 9 having therein an upwardly opening air discharging valve 10 while on the upper end of the chamber 3 is arranged a valve casing 11 having therein an upwardly opening air discharge valve 12. The lower ends of the valve casings 11 communicate with the upper ends of the chambers 2 and 3 and the communicating passages between the casings and the chambers are normally closed by the valves 10 and 12 as clearly shown in Fig. 2 of the drawing. The valve casings 10 and 11 have formed on their lower ends annular plates 13 and 14 which preferably form caps or covers for the open upper ends of the cylinders 2 and 3, said cap plates being secured to the upper ends of the chambers by fastening screws or in any other suitable manner. In the cap plates 13 and 14 adjacent to one side of the valve casings 10 and 11 are respectively formed air inlet ports 15 and 16 said ports 15 and 16 having respectively engage therewith air intake valves 17 and 18, said valves having upwardly extending stems 19 which are slidably engaged with apertured guide lugs 20 formed on the end plates of the discharge

valve casings, said stems having on their upper ends heads between which and the guide lugs 20 are arranged coiled springs 21 the pressure of which is exerted to normally hold the valves 17 and 18 in closed position. The cover plates 13 and 14 are each provided with an upwardly projecting segmental flange 22 which, together with the discharge valve casing form a tray or oil receptacle on the upper side of the cover plates 13 and 14 in which is disposed the air inlet ports 15 and 16. The purpose of the trays or oil receptacles will be hereinafter described.

The discharge valve casings 9 and 11 are connected together by a discharge pipe 23 which is connected by an air conducting pipe 24 to a compressed air tank 25 which may be located at any suitable point adjacent to or at a distance from the compressor. The compressed air tank 25 is provided in its upper end with an air discharge pipe 26 and has arranged in its lower end an oil drip or discharge pipe 27 which connects with an oil receiving box or tank 28 which is connected by an oil conducting pipe 29 with a main oil tank 30 arranged at a suitable elevation above the air compressing chambers 2 and 3. The lower end of the pipe 29 which communicates with the oil box or tank 28 is normally closed by an automatically operated valve 31 the stem of which is connected with the beveled arm or lever 32 of a float 33 arranged in the casing 28 as shown. By thus arranging the box or tank 28 and connecting the same with the air compressing tank 25 it will be seen that any oil which may be discharged into said air compressing tank with the air from the compressing chambers 2 and 3 will drain into the box or tank 28 and that when a sufficient quantity of oil has thus drained into said box, the float 33 will be lifted by the rise of the oil, thus raising the valve 31 and opening the end of the pipe 29 which will permit the discharge of the oil from the box or tank 28. In order to force the oil out of the box and up the pipe 29 into the main oil tank 30, I preferably connect said box with the air compressing tank 25 by an air conducting pipe 34 whereby the compressed air from the tank 25 will enter the box 28 and force the oil therein out through the open end of the pipe 29 and up the latter into the main oil tank 30. When the oil has thus been forced from the box 28 the float will again lower and cause the valve 31 to close the end of the pipe 29.

The main oil tank 31 has connected to its lower end an oil discharge pipe 35 the lower end of which has connected thereto branch pipes 36 having their ends communicating with the trays or oil receptacles formed by the flanges 22 on the upper ends of the cover plates 13 and 14 of the air compressing

chambers 2 and 3. In the branch pipes 36 are arranged oil controlling valves 37 which are provided to regulate the discharge of the oil from the tank 30 to the oil receptacles or trays on the compressing chambers 2 and 3. The oil thus discharged into said receptacles or trays is discharged therefrom into the chambers 2 and 3 through the air inlet ports 15 and 16 each time the air inlet valves 17 and 18 open. By thus supplying the air chambers 2 and 3 with oil, the oil in said chambers is continuously and automatically maintained at the proper level thus facilitating the regular and even operation of the compressor.

While the compressing medium for the air has been herein described and is preferably in the form of oil it is obvious that water or any other suitable fluid may be employed in place of the oil. By employing a fluid compressing medium the working parts of the compressor are continuously lubricated thus facilitating the free and easy operation thereof.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is:

In an air compressor, a pumping cylinder, air compressing chambers connected therewith, a piston slidably mounted in said cylinder, a fluid compressing element actuated by said piston to alternately draw air into and force the same from said chambers, cap plates arranged on said chambers, said plates having formed therein valved inlet and discharge ports communicating with said chambers, oil receptacles forming a part of the plates and surrounding the inlet ports, a compressed air tank adapted to receive the air forced through said discharge ports, a main compressing fluid tank, a fluid receiving box located below and connected with said compressed air tank and adapted to receive any compressing fluid which may be discharged from the air compressing chambers into said tank, a fluid conducting pipe to connect said box with said main compressing fluid tank, a float operated valve arranged in said box and adapted to normally close the end of said pipe, said valve being opened by the rise of the fluid in said box, a compressed air conducting pipe to connect said tank with said box whereby the fluid in the latter is forced through said fluid conducting pipe to said fluid tank by the pressure of air contained

in the compressed air tank, a pipe leading
from the bottom of the fluid receiving tank,
the discharge ends of the opposite branches
of which lead to but are disconnected from
5 the oil receptacles of the plates, whereby the
fluid in said tank is supplied to said air
compressing chambers.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

WILSON SELAKOSKY.

Witnesses:

CHAS. F. KUGLER,
GEO. W. HORTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."