

(No Model.)

W. E. ELLIOTT.
AIR COMPRESSOR.

No. 568,433.

Patented Sept. 29, 1896.

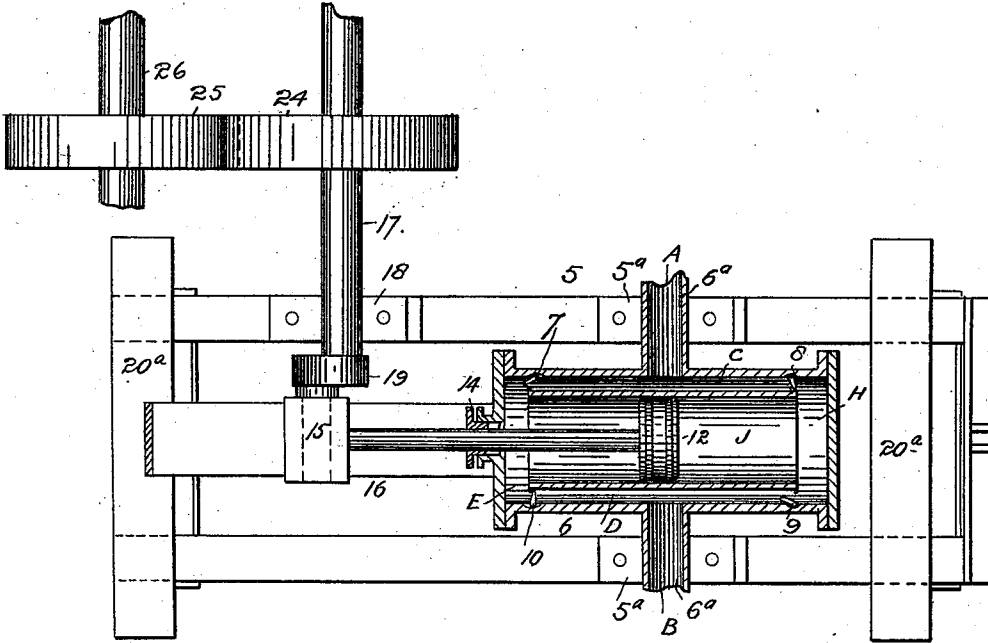


FIG. 2

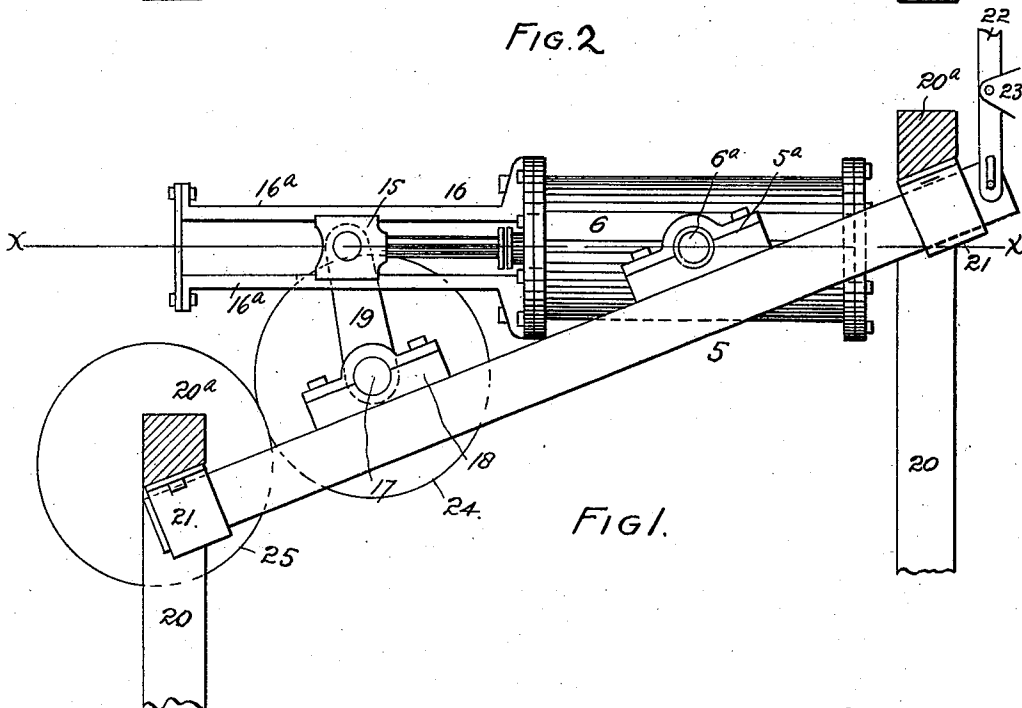


FIG. 1

Witnesses
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Inventor
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By his Attorney *J. P. Brie*

UNITED STATES PATENT OFFICE.

WALTER E. ELLIOTT, OF DENVER, COLORADO.

AIR-COMPRESSOR.

SPECIFICATION forming part of Letters Patent No. 568,433, dated September 29, 1896.

Application filed March 10, 1896. Serial No. 582,682. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. ELLIOTT, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in air-compressors; and it consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a side elevation of the machine, the frame being shown partly in section. Fig. 2 is a longitudinal section taken through the mechanism, the frame being shown in plan or top view.

Similar reference-characters indicate corresponding parts in the views.

Let the numeral 5 designate a suitable supporting-frame upon which is trunnioned the cylinder 6, which is provided with journals 6^a, engaging suitable boxes 5^a, attached to the frame 5. The journals 6^a are hollow, forming inlet and exit ports A and B, respectively, which are connected with longitudinal channels or conduits C and D, formed in the walls of the cylinder and communicating with chambers E and H, formed in the cylinder-heads, said chambers communicating with the piston-chamber J. The passage of air through the cylinder is controlled by suitable valves 7 8 9 10, located at the extremities of the conduits C and D.

The piston 12 is connected with a stem 13, passing through a stuffing-box 14, attached to one end of the cylinder. To the outer extremity of the stem is attached a cross-head 15, adapted to reciprocate in a guide-frame 16, rigidly attached to the cylinder and composed of two arms 16^a, suitably connected at their outer extremities.

A crank-shaft 17 is suitably journaled in a box 18, attached to the frame. To the shaft 17 is attached a crank 19, one extremity of which is suitably connected with the cross-head 15.

The longitudinal frame is supported upon an upright frame 20 by means of stirrup-shaped straps or hangers 21, attached to the horizontal top bars 20^a. The frame 5 is longitudinally movable and may be shifted on the stirrup-shaped hangers by means of a lever 22, fulcrumed on a stationary support 23 and suitably connected with the frame 5. The crank-shaft 17 also carries a fast pulley 24, adapted to engage a friction-pulley 25, mounted on a suitable shaft 26, journaled in a suitable stationary frame. (Not shown.)

As the frame 5 moves in one direction the pulley 24 is made to engage the friction-pulley 25, whose shaft is operated by any suitable power. Hence as the pulley 24 engages the rotating friction-pulley 25 motion is communicated to the crank-shaft and the piston 12 actuated through the medium of the stem 13, the cross-head 15, and the crank 19. As the cross-head reciprocates in the guide-frame the cylinder is made to oscillate on the frame 5. As the piston moves, the air may be said to enter the cylinder via the journal-port A and pass out via the journal-port B. The cylinder-valves are so arranged that as the piston moves toward the right (referring to the drawings) the valves 7 and 9 will open and the valves 8 and 10 will close. Hence the air will enter the cylinder via ports A and C and chamber E and be forced out of the cylinder via chamber H and ports D and B, and as the piston moves in the opposite direction, or toward the left, the valves 8 and 10 will open and the other two valves will remain closed. In this case the air will enter the cylinder via the ports A C and chamber H and will pass out of the cylinder via chamber E and ports D and B.

It must be understood that I do not limit the invention to the valve mechanism shown, as any suitable construction of valves and ports may be employed in connection with the cylinder.

While the frame 5 is shown in the drawings occupying an inclined position, it will be read-

ily understood that it may occupy a horizontal position without in any manner departing from the spirit of the invention.

Having thus described my invention, what
5 I claim is—

1. The combination with a suitable stationary frame, of a longitudinally-movable frame supported on the stationary frame, the cylinder trunnioned on said movable frame, said
10 cylinder being provided with suitable ports and valves, the guide-frame rigidly attached to the cylinder, a cross-head engaging the guide-frame, a suitable piston and stem, the latter being attached to the cross-head, a shaft
15 journaled in the movable frame and having a crank also connected with the cross-head, a pulley fast on the crank-shaft, and another shaft journaled in a stationary frame and carrying a friction-pulley adapted to engage the
20 pulley on the crank-shaft when the movable

frame is properly adjusted, substantially as described.

2. The combination with a suitable supporting-frame, of the cylinder trunnioned on said frame and provided with suitable ports 25 and valve mechanism for controlling the passage of air through the cylinder, the guide-frame rigidly attached to the cylinder, the cross-head engaging the guide-frame, the piston whose stem is attached to the cross-head, 30 and a shaft journaled in the frame and having a crank connected with the cross-head, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

WALTER E. ELLIOTT.

Witnesses:

CHAS. E. DAWSON,
ALFRED J. O'BRIEN.