

G. SCHMIDT.

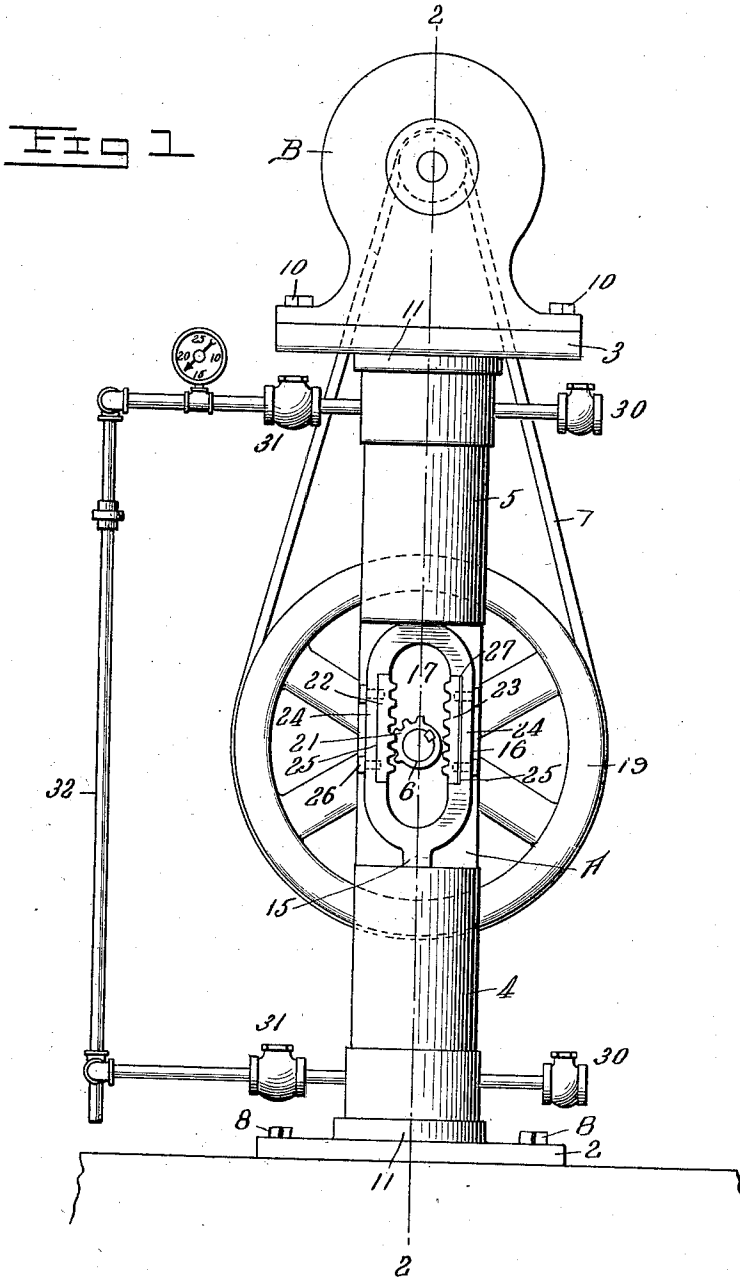
AIR PUMP.

APPLICATION FILED NOV. 28, 1910.

1,015,087.

Patented Jan. 16, 1912.

2 SHEETS—SHEET 1.



Witnesses
H. C. Rohette
A. P. Klingworth

Inventor
Gottfried Schmidt

By *Meyer, Kuschner & Co*
Attorney

G. SCHMIDT.
AIR PUMP.

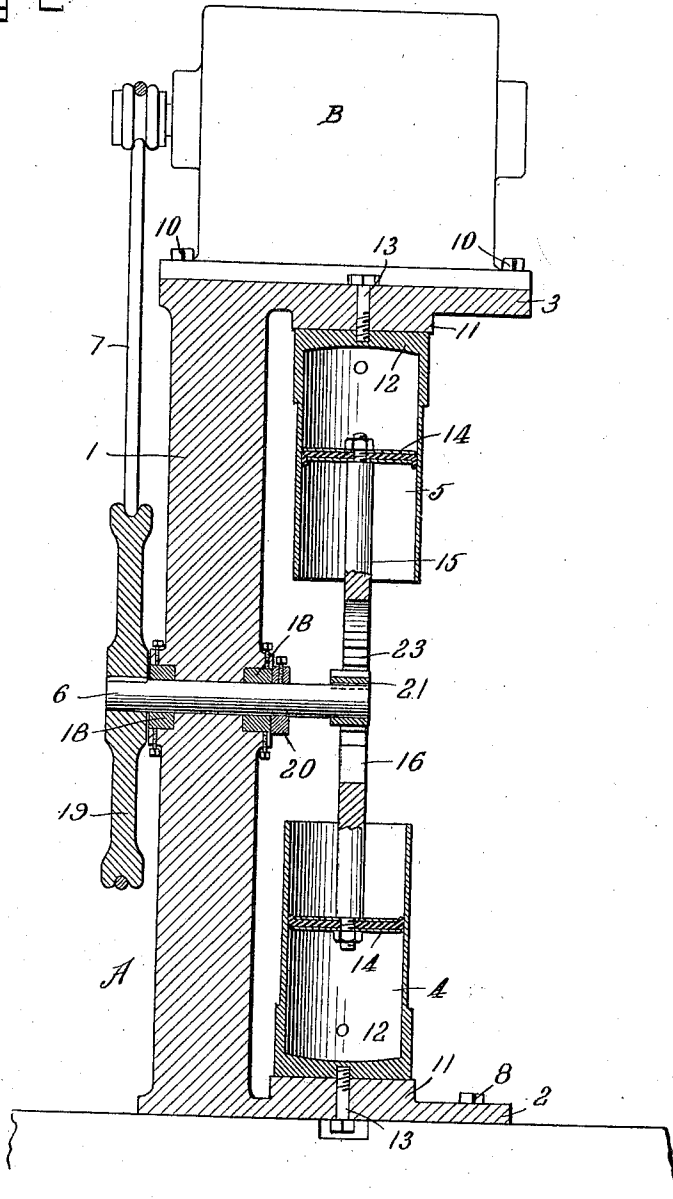
APPLICATION FILED NOV. 28, 1910.

1,015,087.

Patented Jan. 16, 1912.

2 SHEETS—SHEET 2.

Fig 2



Inventor

Gottfried Schmidt

Witnesses

H. C. Pollock

J. P. Heringworth

By Meyer, Luskman & Co

Attorney

UNITED STATES PATENT OFFICE.

GOTTFRIED SCHMIDT, OF HAZLETON, PENNSYLVANIA.

AIR-PUMP.

1,015,087.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed November 28, 1910. Serial No. 594,578.

To all whom it may concern:

Be it known that I, GOTTFRIED SCHMIDT, a citizen of the United States, residing at Hazleton, in the county of Luzerne and State of Pennsylvania, have invented new and useful Improvements in Air-Pumps, of which the following is a specification.

This invention relates to air pumps, and has for its object to provide a simple, strong and economical double cylinder pump, comprising few parts compactly assembled in a rigid frame with the cylinders in alignment and a single reciprocating piston rod having a piston head on each end, and means intermediate said ends for converting rotary motion of the driving shaft into rectilinear movement for operating the pump.

A further object of the invention relates to the novel frame supporting the several parts of the air pump which is preferably a unitary casting, simple, compact and reversible thereby enabling the parts to be assembled quickly and accurately and with the fewest possible number of connections.

With these and other objects in view the invention consists of the combination and arrangement of parts hereinafter described and claimed and illustrated in the accompanying drawings in which:—

Figure 1 is an elevation of the improved pump, and Fig. 2 a vertical sectional view on the line 2—2 of Fig. 1.

In the drawing, A indicates the frame comprising a vertical column 1, from the ends of which on one side project brackets or plates 2 and 3 respectively, parallel to each other and perpendicular to the column. The column and brackets are preferably cast in one piece, thus providing a strong rigid support for a motor B, two pump cylinders 4 and 5 and the driving shaft 6. Instead of placing the column vertically, as shown, it may be secured in a horizontal or angular position if desired. The bottom bracket plate or foot 2 is provided with holes through which bolts 8 pass for fastening the frame A to a suitable base 9. Holes are made in the upper bracket plate or shelf 3 for bolts 10 which secure the motor B, in this instance an electric motor, in place on the top of the shelf. The inner or opposing sides of the two plates 2 and 3 have formed thereon projecting seats 11 against which the closed heads 12 of the respective cylinders 4 and 5 bear, the latter

being held rigidly and in axial alinement by means of bolts 13 passing through the plates 2 and 3 into the cylinder heads 12 as shown. It is to be noted that both ends of the column 1 are alike, and that the plates 2 and 3 are similar in every respect. It follows therefore that either end of the frame A may be placed uppermost when the parts are assembled. The faces of the two seats 11 may be finished simultaneously and the holes for the bolts 13 bored at one operation.

Within each cylinder 4 and 5 is a piston head 14 connected together by a single piston rod 15 having a yoke shaped intermediate section 16 formed with a central longitudinal opening 17 therethrough into which projects one end of the horizontal driving shaft 6 journaled in bearings 18 carried by the column 1. The shaft 6 passes through the column 1 midway between the plates 2 and 3, and has keyed on its end, outside the column, a grooved or other type of driving wheel 19. A collar 20, bolted on the shaft inside the column, prevents longitudinal movement of said shaft. A belt 7 connects the motor B with the driving wheel 19.

Keyed on the inner end of the shaft 6 within the yoke section 16 is a toothed segment 21 adapted to alternately engage racks 22 and 23 on the inner faces of the straight portions 24 of yoke section 16 for the purpose of reciprocating the pistons. The racks 22, 23, are removable from the yoke section, and preferably seated in depressions 25 in the straight portions 24 and held in place by bolts 26 passing through said straight portions into the rear of the racks. The length of piston stroke may be changed by employing a larger or smaller gear segment 21 and by using racks having backs of different thicknesses, or by placing filler pieces 27 between the racks and the bottoms of the depressions 25. The pump cylinders 4 and 5 are, in this instance, single acting with inlet valves 30, outlet valves 31 and a pipe line 32 leading from the outlet valves to a storage or pressure tank, or to the point of distribution or use.

What I claim is:—

1. In a pump, a frame comprising a column formed with a laterally projecting bracket or plate at each end perpendicular to said column and having a seat on its inner side, said brackets or plates being similar

to each other in all respects and lying in parallel relation with each other, bearings in said column midway between said brackets, a driving shaft mounted in said bearings parallel to said brackets, a cylinder secured on each seat on the inner side of the brackets and projecting toward each other and in the same axial line, a piston in each cylinder, a piston rod formed with an intermediate yoke joining said pistons, a gear segment on one end of said shaft adapted to alternately engage said racks as the shaft rotates for operating the pistons, a driving wheel on the opposite end of said shaft and on the outer side of the column, and driving means mounted on one of said projecting brackets connected to said driving means.

2. In a pump, an integral frame compris-

ing a column from each end of which and in the same direction projects a bracket or supporting plate perpendicular to said column, said brackets or plates being similar in all respects and in parallel relation with each other, and either adapted to support a driving motor, a seat on the inner side of each bracket for the attachment of a cylinder, and bearings surrounding a transverse opening through the column midway between its ends to support a driving shaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GOTTFRIED SCHMIDT.

Witnesses:

TESSIE HUTH,

PETER SCHNEIDER.

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