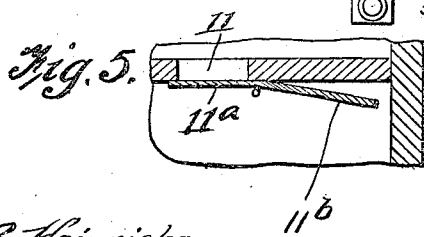
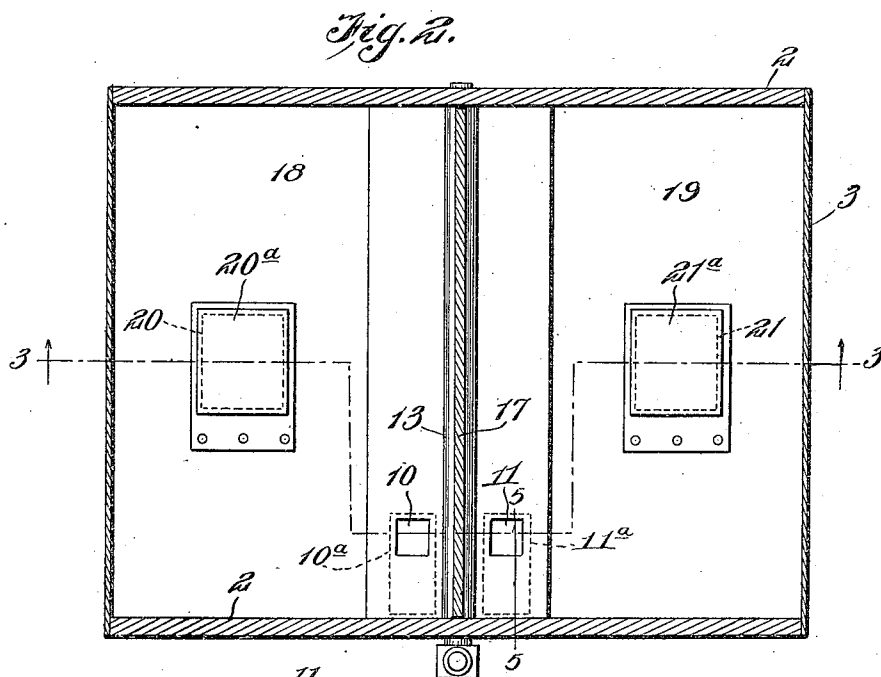
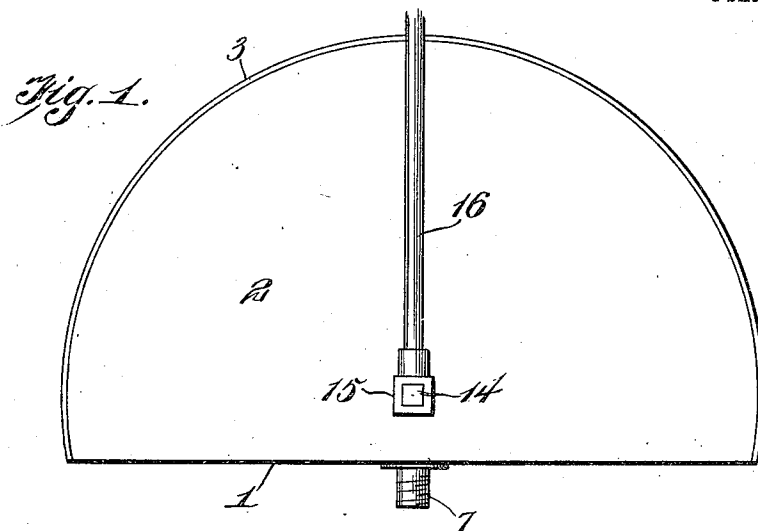


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 OSCILLATING PISTON PUMP.  
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961,618.

Patented June 14, 1910.

2 SHEETS—SHEET 1.



*Michael Keller* <sup>Inventor</sup>

*Witnesses*  
*Louis R. Heinrichs*  
*C. C. Hines*

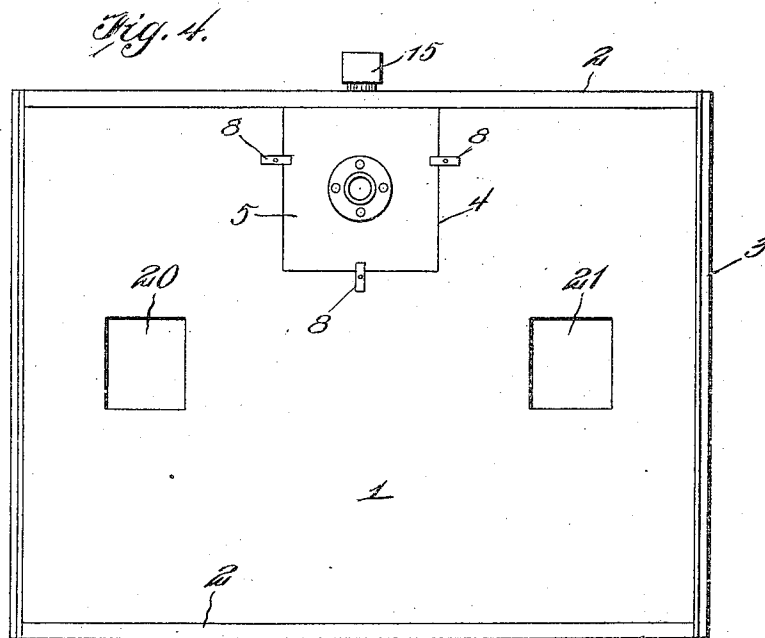
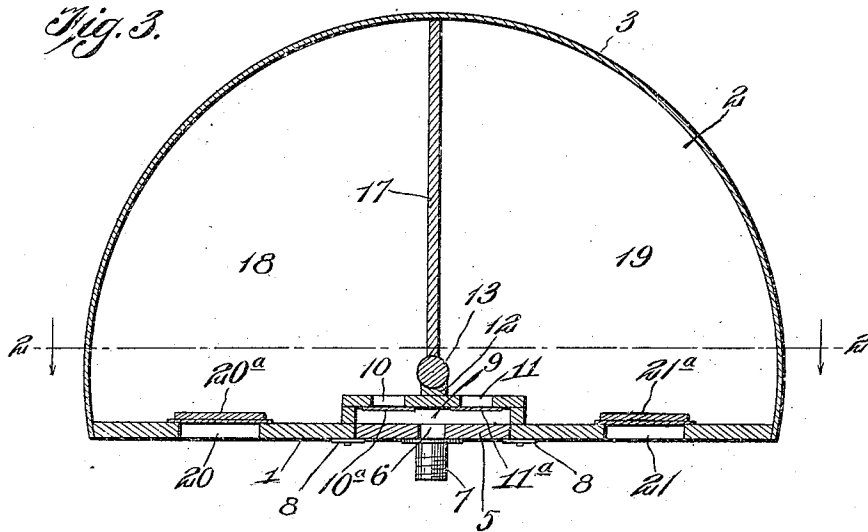
*Victor J. Evans* <sup>Attorney</sup>

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Witnesses

Louis S. Hennrichs

C. C. Hines.

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*Victor J. Evans* <sup>Attorney</sup>

Attorney

# UNITED STATES PATENT OFFICE.

MICHAEL KELLER, OF EUREKA, UTAH.

## OSCILLATING-PISTON PUMP.

961,618.

Specification of Letters Patent. Patented June 14, 1910.

Application filed August 6, 1909. Serial No. 511,571.

*To all whom it may concern:*

Be it known that I, MICHAEL KELLER, a citizen of the United States, residing at Eureka, in the county of Jaub and State of Utah, have invented new and useful Improvements in Oscillating-Piston Pumps, of which the following is a specification.

This invention relates to oscillating piston pumps for the use of blacksmiths and others, the object of the invention being to provide a comparatively simple and inexpensive construction of pump of this character provided with a swinging piston or pressure diaphragm forming compartments within the pump casing, and which is adapted to be conveniently operated and to expel a charge of air upon each back and forth movement thereof.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation through a pump constructed in accordance with my invention. Fig. 2 is a horizontal section of the same on the line 2—2 of Fig. 3. Fig. 3 is a vertical longitudinal section on the irregular line 3—3 of Fig. 1. Fig. 4 is a bottom plan view of the pump. Fig. 5 is a section on line 5—5 of Fig. 2.

The pump comprises a semi-circular casing embodying a bottom wall 1, side walls 2, and a top wall 3, said side and top walls being of semi-circular form to produce a correspondingly shaped casing. The bottom wall 1 is provided adjacent one of the side walls 2 with an opening 4 adapted to be closed by a removable section or cover plate 5 provided with an air discharge opening 6 communicating with a nipple 7 fastened to said section or cover and adapted for connection with an air feed pipe leading to the forge or fire to be blown. This removable section or cover is adapted to be secured in closed position by turn buttons or other suitable fastenings 8. Mounted upon the upper side of the wall 1 within the body of the casing is an elevated wall forming an exhaust chamber 9, which is provided in its top on opposite sides of the transverse center with discharge ports 10 and 11 affording communication between the interior of the casing and the exhaust outlet 6. These

ports 10 and 11 are respectively controlled by inwardly opening flap valves 10<sup>a</sup> and 11<sup>a</sup>. Each of said valves comprises a plate having an angularly bent weighted end as shown at 11<sup>b</sup> in Fig. 5, to hold it closed and automatically close it after opening.

The exhaust chamber 9 extends transversely across the bottom wall and has superposed thereon a cleat or bar 12 having a concaved upper face. Seated in this concaved upper face of the bar is a transverse cylindrical shaft 13 having reduced spindles at its ends which are journaled in suitable bearing openings in the side wall 2. One of these spindles extends beyond the adjacent side walls 2 and is provided with an angular extremity 14 to receive a correspondingly shaped socket 15 on an operating lever or handle 16.

Secured to the shaft 13 within the casing is a piston or diaphragm 17 which extends transversely across the casing between the walls 2 and from the shaft 13 to the wall 3 and is adapted to move in close contact with said walls. This piston or diaphragm in its central position, shown in Fig. 3, separates the interior of the casing into two counterpart compartments 18 and 19. These compartments are respectively provided with air inlet ports 20 and 21 formed in the bottom wall 1 and which are controlled by upwardly opening flap valves 20<sup>a</sup> and 21<sup>a</sup>. The purpose of mounting the shaft 13 upon the concaved cleat 12 is to provide a substantially air tight seat for said shaft to prevent or reduce passage of air at this point between the compartments 18 and 19.

In the particular use of the pump, the latter may be supported in any preferred manner so as to dispose the operating handle or lever outwardly and in a vertical position. In using the pump, the lever 16 is alternately oscillated back and forth to impart a corresponding motion to the swinging piston or diaphragm 17. Assuming the latter to be in the central position shown in Fig. 3, it will be apparent that when it is moved in the direction of compartment 18 it will force what air is contained in said compartment outward through the port 10 and simultaneously draw air into the compartment 19 through the port 21, the valves 10<sup>a</sup> and 21<sup>a</sup> opening respectively for the exit and inlet of air from

said compartment and then closing for an obvious purpose. On the reverse movement of the piston or diaphragm, the air taken into the compartment 19 will be exhausted 5 through the port 11 and simultaneously air will be drawn into the compartment 18 through the port 20, in which operation the valves 11<sup>a</sup> and 20<sup>a</sup> will govern the ports to respectively permit of the discharge of air 10 from the compartment 19 and prevent its return and permit of the passage of air into the compartment 18 and prevent its exhaust. Hence it will be seen that by oscillating the piston back and forth, air will be alternately 15 drawn into the two compartments of the casing and discharged under pressure therefrom into the exhaust chamber and then out through the port 6.

From the foregoing description, the construction and mode of operation of my improved pump will be readily understood, and it will be seen that it provides a pump which is simple of construction, effective in use, capable of being easily operated and 25 which on each complete movement of the piston or diaphragm will discharge two charges of air. It will be understood, of course, that upon removing the cover plate 5, access may be conveniently obtained to 30 the valves 10<sup>a</sup> and 11<sup>a</sup> for the purpose of repairing or renewing the same.

I claim:—

An oscillating piston pump comprising a semi-cylindrical casing embodying a flat 35 bottom wall and semi-circular side and top walls, said bottom wall being provided on opposite sides of its transverse center with valve-controlled air inlet ports and having an opening therein on a line intermediate 40 of said ports, an exhaust chamber superposed upon said wall above said opening and provided with spaced valve-controlled discharge ports, a cover plate fitting within said opening and lying flush with the underside of the bottom wall, said cover plate 45 having an outlet port communicating with said chamber and a threaded coupling tube communicating with said port, means for detachably holding said cover plate in position, a swinging piston or diaphragm with 50 in the casing between the discharge ports of the exhaust chamber and separating said casing into companion compartments, each having a valve-controlled air inlet port and a valve-controlled discharge port, and means 55 for oscillating said piston or diaphragm.

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

MICHAEL KELLER.

Witnesses:

JAS. O'DRISCOLL,  
O. A. LINDSAY.