UNITED STATES PATENT OFFICE.

JNO. B. READ, OF TUSCALOOSA, ALABAMA.

PUMP FOR RAISING WATER.

Specification of Letters Patent No. 6,714, dated September 11, 1849.

To all whom it may concern:

Be it known that I, JOHN B. READ, of the town and county of Tuscaloosa and State of Alabama, have invented sundry new and useful Improvements in the Atmospheric and Lifting Pump; and I do hereby declare that the following is a full and exact description of the same.

My improvements consist, in forming the upper part of the pump chamber of a trumpet shape, so that the piston when raised somewhat higher than its usual working limit, may enter this enlarged part of the pump chamber, and be sufficiently loose therein to allow any water above it, to pass freely below it on its outside; also in attaching the lower valve, which is to be spherical to the lower part of the piston by some flexible connection as a small metallic chain, the chain to be of such a length, that the lower valve may be raised from its seat whenever the piston is elevated into the enlarged part of the pump chamber as mentioned above; thus allowing a free passage into the well for any water above the piston, and affording the means of withdrawing the lower valve from the pump, along with the piston, and the upper valve attached to the piston in any of the ordinary modes, whenever it may be necessary for repairs or any other purpose.

To facilitate the understanding of my improvements and to enable others skilled in the art to construct pumps on the improved plan which I suggest, I refer to the annexed drawing.

My improvements are applicable to atmospheric and lifting pumps of the ordinary forms, as well as to that represented in the drawings sent herewith, and may be used with facility and advantage whether the pumps be constructed entirely of metal, entirely of wood, or of wood and metal combined.

Figure 1 of my drawings represents an atmospheric and lifting pump in its entire length, and is a representation of the model prepared to exhibit my improvements; it may be made of cast iron, or other metal, in joints of five to ten feet in length, and screwed together at the transverse lines *a*, *b*, *c*, *d*, *e* &c.; the platform 2, 3 and the upright piece 1 to which the first joint of the pump A and the handle with its connected fixtures is attached, will of course be of wood. The joint A is made fast to the upright support 1 by screws, and in it are inserted two stop cocks 6 and 7, to the last of which a hose pipe is attached; B is a globular air vessel just below the platform, C the pump chamber, D the lower joint of the pump with apertures for admitting the water; 13 is the piston with the upper valve attached, 15 the lower valve connected with the piston by the small chain 16, and 14 is the lower valve aperture; the handle 25 with its fulcrum at 10, plays loosely between two small rollers placed in an aperture in the upper part of the piston rod, 8, 9 represents a guide for maintaining the perpendicular action of the piston rod, 11, 12 is a guide for the handle, and at 11 is a small pin by removing which the handle may be raised higher than its ordinary upper working limit; 17 is a cap screwed on the first joint A, by loosening which, and unscrewing the piston rod at a point near 8, the piston rod with the upper and lower valves attached may be readily removed from the pump; 20 and 21 are small iron rods which with a third posterior to the pump and not shown in the drawing, are intended to support and steady the pump when necessary; they are made fast below by hooks to the outside of the pump chamber by means of a metallic collar with three apertures, and after passing through the platform, are secured above by the screw nuts 22 and 23. Water is to be raised from D to C by atmospheric pressure, not exceeding of course some twenty-eight feet, and to be lifted from C to the surface at A through the space A C, whatever it may be. The joint C constitutes the pump chamber in which plays the piston 13; it is to be cast somewhat thicker than the other joints as represented; at the upper part it is to taper outward gradually, through a space of several inches, until it widens to the same bore with the body of the pump above; the bottom of the pump chamber is spherical with a circular aperture at 14 for the lower valve.

Fig. 2 represents a vertical and posterior section of the pump chamber, showing at *i* and *k* the superior thickness of its sides to the other joints, and especially at E the manner in which its upper part gradually widens out to the same diameter with the upper part of the pump cylinder.

Fig. 3 represents the piston *l*, *m*, with part of the rod and the upper valve *n*, attached, and especially the lower valve F and the

2 Sheets—Sheet 1.

P. ROLLHAUS.

Cooking Range.

No. 6,715.

Patented Sept. 11, 1849.

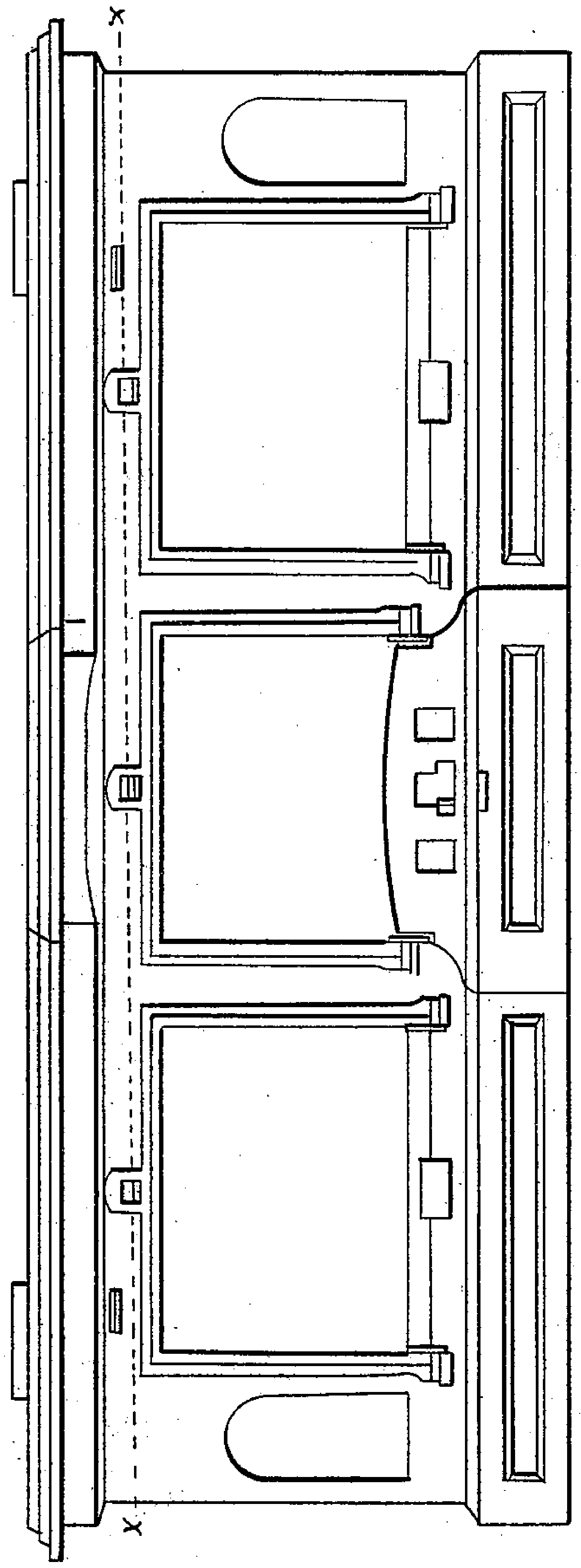

Fig. 1

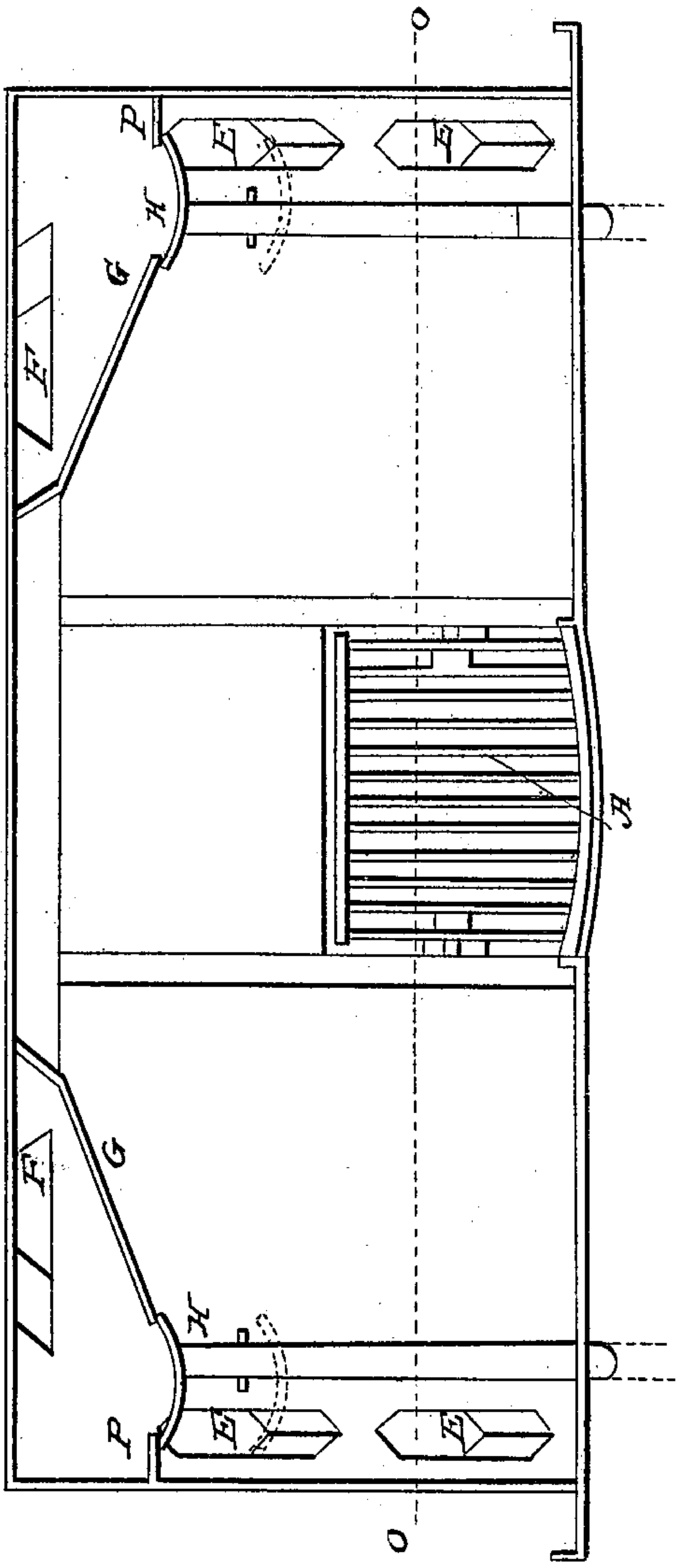

Fig. 2

N. PETERS, Photo-Lithographer, Washington, D. C.