

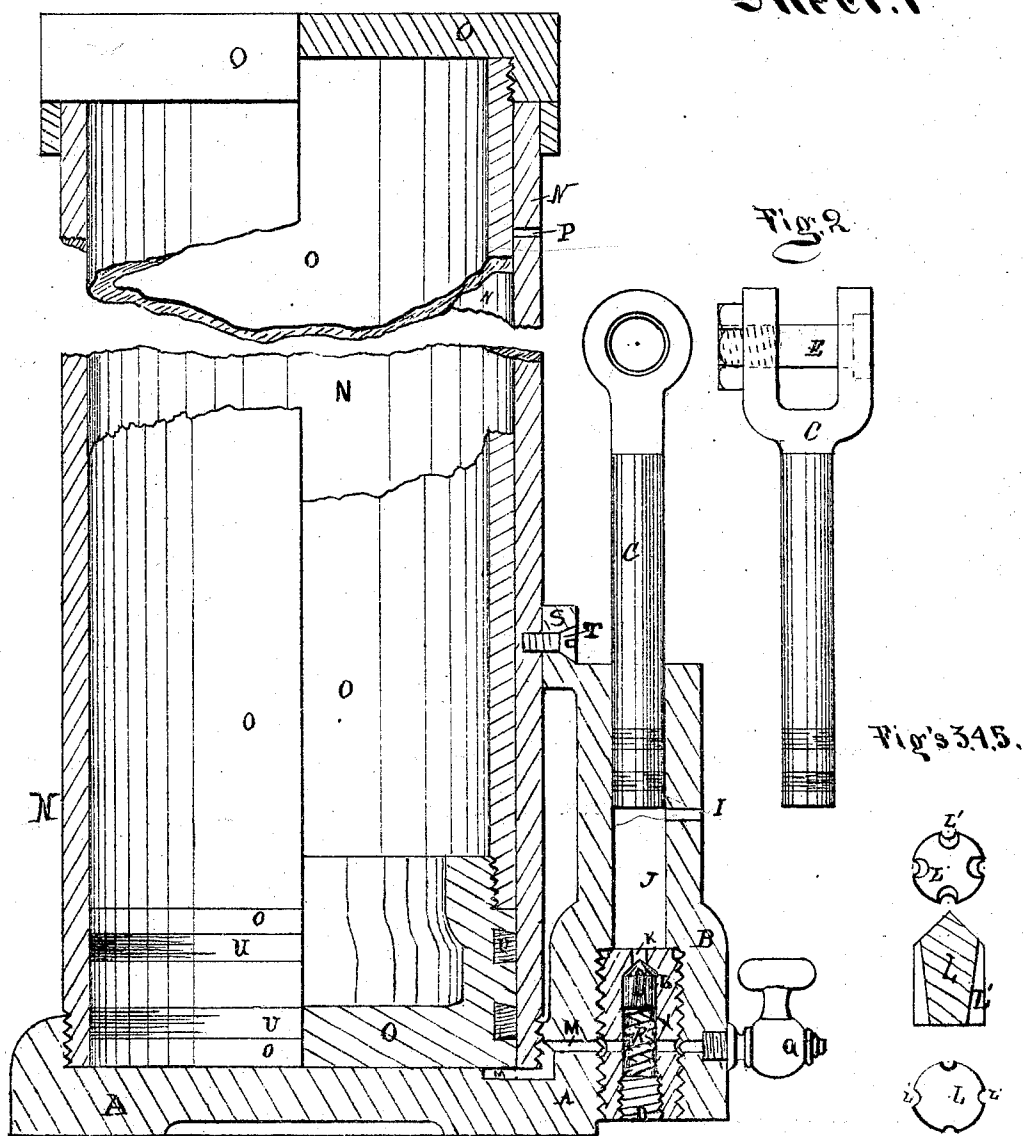
Ojeda's Aerostatic Jack

No. 118,475.

Patented Aug. 29, 1871.

Fig. 1

Sheet 1



Witnesses

David T. Smith
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Inventor

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Ojeda's Aerostatic Jack

No. 118,475

Sheet 2

Fig. 6 Patented Aug. 29, 1871.

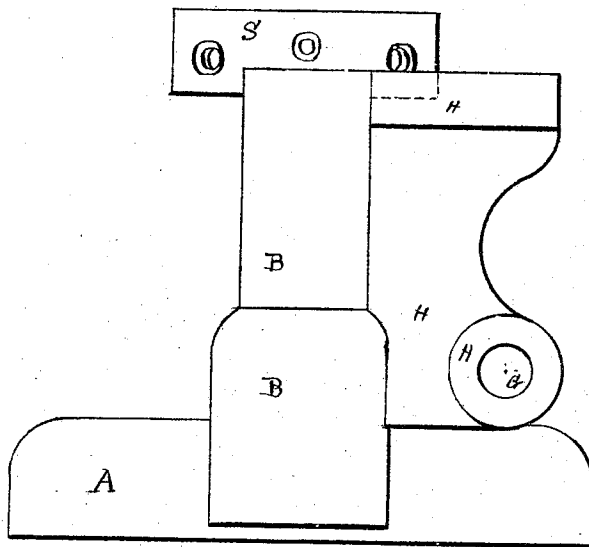


Fig. 7

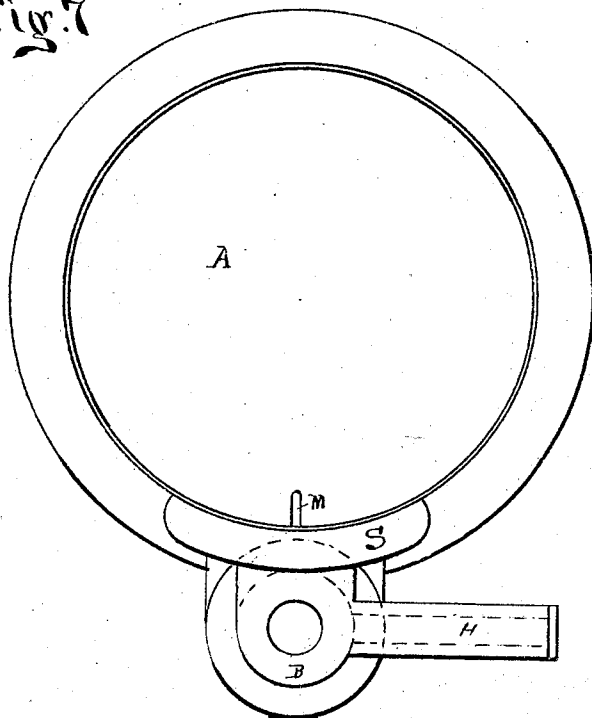


Fig. 8

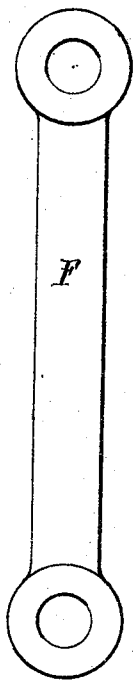


Fig. 9

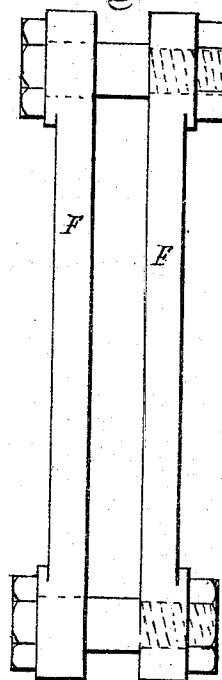
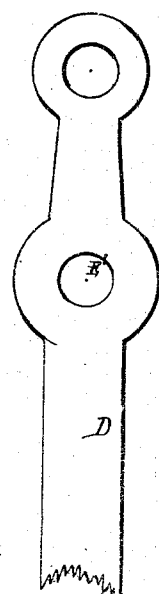


Fig. 10



Fig. 11



Witnesses

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UNITED STATES PATENT OFFICE.

ANTHONY V. OJEDA, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN AEROSTATIC JACKS.

Specification forming part of Letters Patent No. 118,475, dated August 29, 1871.

To all whom it may concern:

Be it known that I, ANTHONY V. OJEDA, of San Francisco, in the county of San Francisco and State of California, have invented an Improved Aerostatic Lifting-Jack; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention has for its object the production of a jack adapted for the employment of air instead of water; and consists in certain details of construction, which will be fully described hereinafter.

In the annexed drawing, Figure 1, Sheet 1, is a vertical longitudinal section of a machine embodying my invention. Figs. 2, 3, 4, and 5, Sheet 1, and Figs. 6, 7, 8, 9, 10, and 11, are details of same.

Each part is distinguished by the same letter whenever it appears in the drawing.

A is the base or bed-plate. B is the air-pump, cast in one piece with and forming a part of the bed-plate. C is the air-pump plunger, worked by the lever D. The lever D is hinged to the plunger C by means of the bolt E passing through the hole E'. A jointed fulcrum is provided for the lever D by means of the links F, the upper ends of which are connected with the extremity of lever D, and the lower ends with the hole G of the guide-lug H cast on the pump. The guide-lug H, constructed as shown, serves to guide the lever D in a vertical plane, and, in combination with the upper part of the air-pump, forms sufficient guide for the plunger C, the barrel of the air-pump being made considerably longer than the stroke for that purpose. The plunger C is shown in Fig. 1 at the top of its stroke. I is a passage by which the air enters the barrel or chamber J of the pump.

When the plunger descends the passage I is closed, and the air contained in the chamber J is forced by the plunger through the passage K, through the grooves L' of the valve L, and passage M, to the interior of the cylinder N under the piston O, and, if the pumping is continued, will raise the piston until its lower extremity is above the small hole or safety-passage P, when

sufficient will escape through that passage to prevent the further ascent of the piston.

It is evident that the piston will raise with it a superincumbent weight greater in proportion to the power applied, as the cross-sectional area of the piston O is greater in proportion to the area of the plunger C.

Q is an air-cock, by opening which the compressed air will escape and the piston O be caused to descend either rapidly or slowly, at the will of the operator.

When the plunger C begins its ascent the valve L will be immediately closed by the spring R and the compressed air, and a partial vacuum formed above the valve in the chamber J, to be refilled with air through the passage I.

The cylinder N should be of wrought-iron, to secure great strength with light weight, and it is screwed into the base or bed-plate A, as shown.

In the upper part of the air-pump is a lug, S, curved to fit the outside of the cylinder. By means of this lug the top of the air-pump is secured to the cylinder by screws T. Care should be taken not to drill the holes for these screws quite through the cylinder, as a bad leak might be caused thereby.

The extremities of the piston O I prefer to form of cast metal and the central part of wrought-iron. The form of the parts and the manner of screwing them together, shown in the drawing, are intended for such a disposition of material.

The packing U is of leather, and is driven into dovetailed grooves, as shown, and condensed as much as possible when dry. This style of packing I prefer when great weights are to be raised, as, when well put in, it is perfectly tight and will last a long time, provided the cylinder, after boring, is ground very true and smooth; but, if the cylinder is rough, some other style of packing is preferable; and for raising light weights the packing described causes too much friction.

It is obvious that the proportions and details of construction of machines embodying my invention will vary according to the work for which they are intended; and it may be frequently convenient to reverse the action of the air-pump so

as to exhaust the air from the interior of the cylinder, and thus cause the pressure of the atmosphere on the exterior to move the parts, and with them the required weight.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The machine described, provided with the dis-

charge-cock 2, valve L, and safety-passage P, as set forth.

In witness whereof I have hereunto set my hand and seal.

ANTHONY V. OJEDA. [L. S.]

Witnesses:

C. W. M. SMITH,

H. S. TIBBEY.