

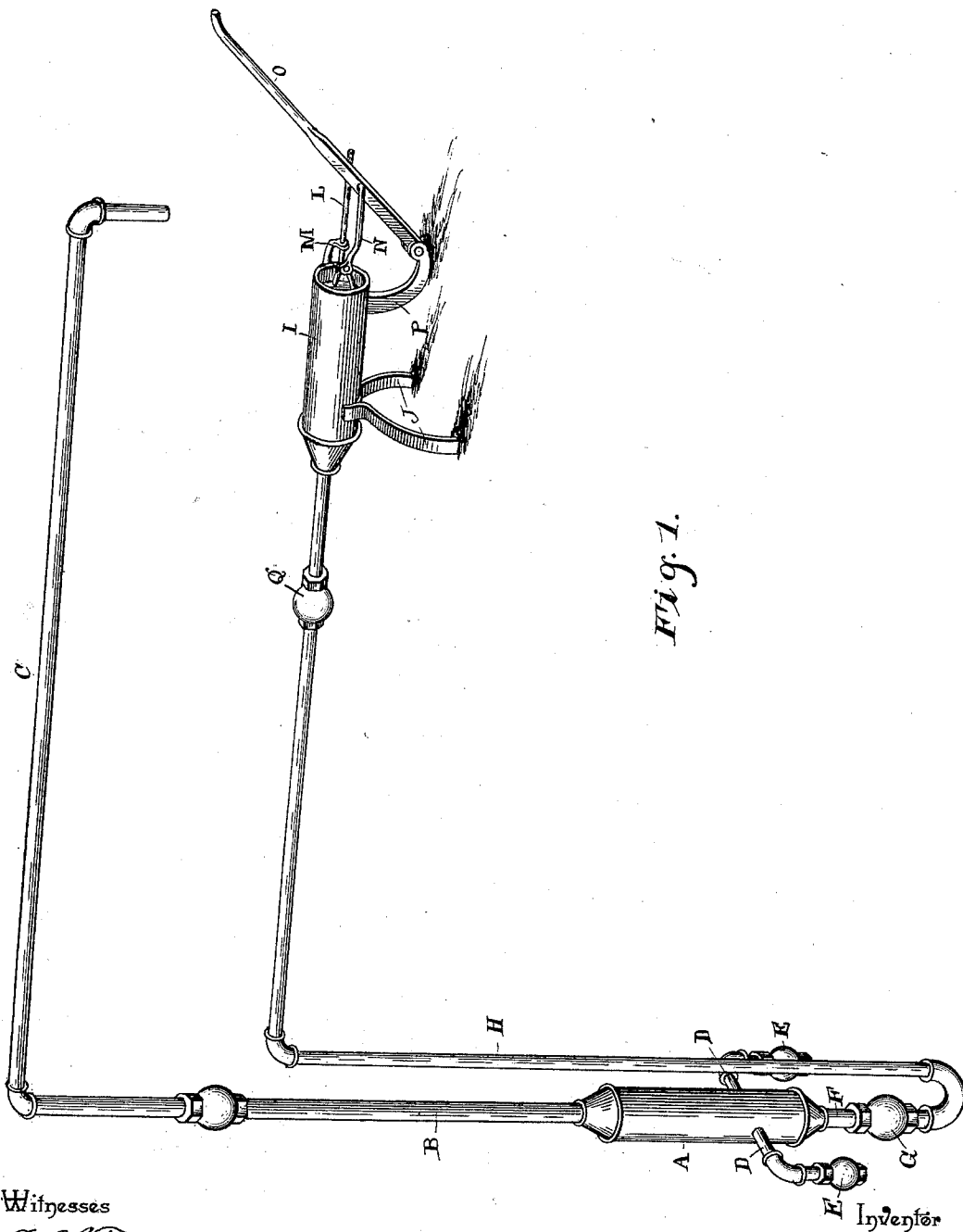
(No Model.)

2 Sheets—Sheet 1.

W. B. NEVILL.
EJECTOR PUMP.

No. 513,412.

Patented Jan. 23, 1894.



Witnesses

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D. P. Prokhaupfer

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Inventor

By his Attorneys,

Ch Snow & Co.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

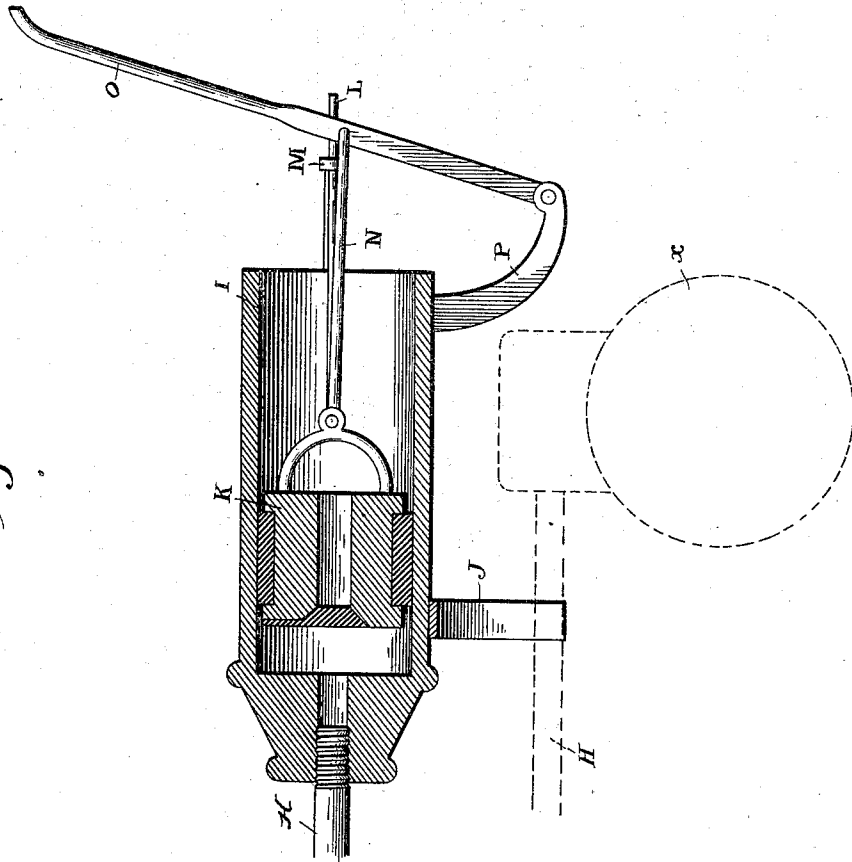
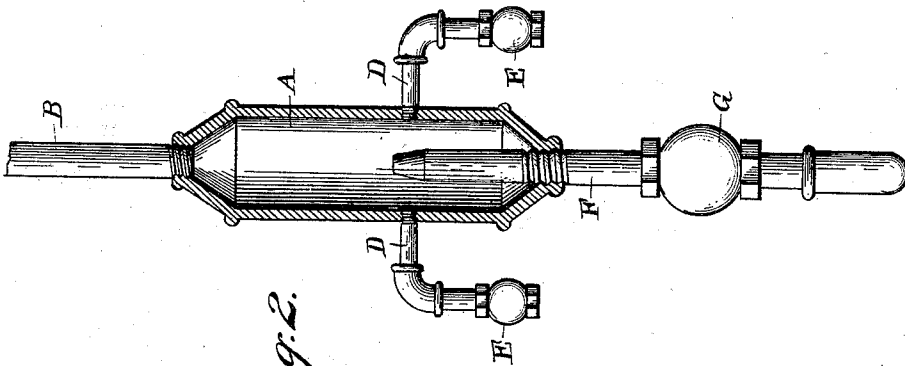


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM BIRT NEVILL, OF ROCKWALL, TEXAS, ASSIGNOR OF ONE-HALF
TO J. B. HANDLEY, OF SAME PLACE.

EJECTOR-PUMP.

SPECIFICATION forming part of Letters Patent No. 513,412, dated January 23, 1894.

Application filed May 19, 1893. Serial No. 474,819. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BIRT NEVILL, a citizen of the United States, residing at Rockwall, in the county of Rockwall and State of Texas, have invented a new and useful Ejector-Pump, of which the following is a specification.

This invention relates to pumps; and it has for its object to provide certain improvements in ejector pumps operated by air or steam pressure, whereby means shall be provided for easily lifting water to any suitable height, and conducting the same any distance from the well.

To this end the main and primary objects of the invention are to provide certain improvements in pumps of the character noted, to secure easy operation and practical efficiency.

With these and other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of a pump constructed in accordance with this invention. Fig. 2 is an enlarged sectional view of the combined water and air cylinders showing the connections of the water and air pipes therewith. Fig. 3 is an enlarged detail sectional view of the air cylinder and the pumping devices therein.

Referring to the accompanying drawings, A represents a combined water and air cylinder arranged under the ground so as to be partly disposed in the water of the well from which the water is to be lifted, and said combined water and air cylinder A, has detachably connected to the top end thereof the discharge pipe B, which pipe may be led by suitable connections C, any distance above the cylinder A, and carried to any convenient point of use, near to or away from the well, and such pipe is of course of a size smaller than the diameter of the cylinder, but adapted to accommodate the full discharge of water from said cylinder.

The cylinder A, has detachably threaded into opposite sides thereof at an intermediate point the opposite water inlet pipes D, which

pipes open at their outer ends into the water of the well, and are provided with the check valve E, which prevent back flow of the water through such pipes, and detachably threaded into the lower end of the cylinder below the connections of the water inlet pipes therewith is the air or steam inlet pipe F. This pipe is provided with an inner ejector or nozzle portion which projects inside of the cylinder to a point above the connection of the pipes D therewith, so as to create a powerful suction for drawing the water into the cylinder through said pipes.

The air or steam inlet pipe F, which enters the lower end of the cylinder A, is provided with a check valve G, immediately below the cylinder, in order to prevent the water rising in the air or steam conducting pipe H. The air or steam conducting pipe H, rises to the top of the ground and leads to a point adjacent to the discharge end of the pipe C, so as to be convenient to the person desiring to draw the water from the well, and is attached to one end of the horizontal air cylinder I. The horizontal air cylinder I, may of course be arranged in any suitable position inside of a house or other convenient point, and is preferably supported on the stand legs J. The air cylinder I, is open at one end to accommodate the valved air plunger K, moving therein, which plunger has extended from one side thereof the plunger rod L, moving through the perforated rod guide M, attached to the open end of such cylinder. An operating link N, is pivotally connected at one end to the plunger rod L, and at its other end to the handle lever O. The handle lever O, is pivoted at its lower end to the depending leg bracket P, attached to the bottom side of the air cylinder, and also serving as a support therefor. Now it will be apparent that by manipulating the handle lever O, air is forced under pressure through the pipes H, and F, into the combined water and air cylinder A. The air entering the cylinder A, under pressure, draws in the water into such cylinder through the pipes D, and carries it up through the discharge pipe and to the point of use, thereby providing for the quick elevation of water by simple and efficient means.

If found desirable or convenient the han-

dle lever O, may be dispensed with and other suitable operating means connected with the plunger, and it will also be understood that the same principle will be still observed if steam is employed instead of air to maintain the necessary pressure to elevate the water, and in such case the pipe H, may be connected with an ordinary steam boiler X, such as shown in dotted lines in Fig. 3, of the drawings, and in either use the pipe H, is also provided with check valves Q, near its connection with the air pump or cylinder and the steam boiler, to prevent the return of air or steam.

15 The herein-described ejector pump possesses several advantages over constructions already patented, and it is to be noted that, by being of a separable construction, the taking apart and setting up of the pump parts is rendered very easy and convenient, and relative to the operation of the pump it is to be noted that the enlarged cylinder A, renders the operation of the pump much more effective than the constructions set up in previous patents, by reason of the fact that the said cylinder will not only accommodate a greater supply of water, but will insure the powerful lift thereof through the smaller discharge pipe B, while in the patented constructions, the supply of water from the inlet pipes leads directly into the discharge pipe, and necessarily requires a suction or pressure of gas or air sufficient to lift the entire supply, which under all conditions is not practicable.

35 Changes in the form, proportion and the minor details of construction as embraced within the scope of the appended claims may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

40 Having thus described the invention, what

is claimed, and desired to be secured by Letters Patent, is—

1. In a separable ejector pump, the combination of an enlarged water and air cylinder having threaded openings in its upper and lower ends, a discharge pipe detachably threaded into the threaded opening in the top of the cylinder, said discharge pipe being of a smaller diameter than the enlarged cylinder, separate and independent off-standing water inlet pipes D, detachably threaded at one end into opposite sides of the enlarged cylinder at a point intermediate of its ends and having lower open ends provided with check valves E, a valved air or steam pressure pipe having a threaded portion removably engaging the threaded opening in the lower end of the cylinder, and an inwardly extending ejector nozzle portion disposed above said threaded portion and projecting inside of the cylinder to a point above the connection of the pipes D, therewith, and a pump connected with said pressure pipe, substantially as set forth.

2. In a pump of the class described, the combination with the combined water and air discharge cylinder, and an air pipe connected therewith; of an open air cylinder connected with said air pipe and having stand legs one of which forms a pivot bracket, a valved plunger moving in said open cylinder, and the handle lever connected with said plunger and pivoted to said pivot bracket leg, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM BIRT NEVILL.

Witnesses:

J. B. HANDLEY,
W. B. HALL.