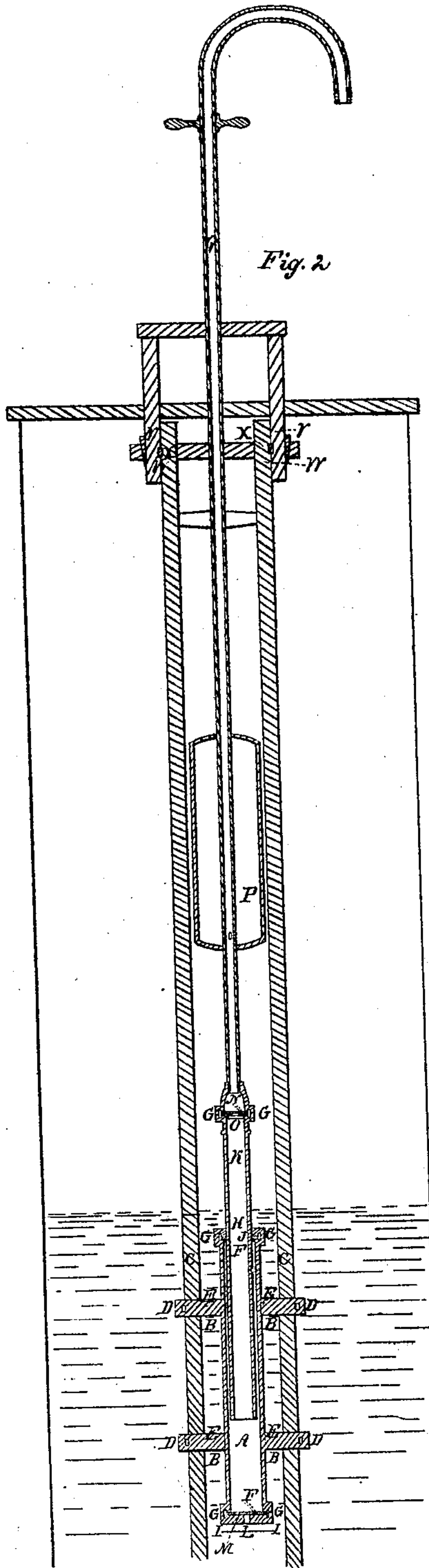
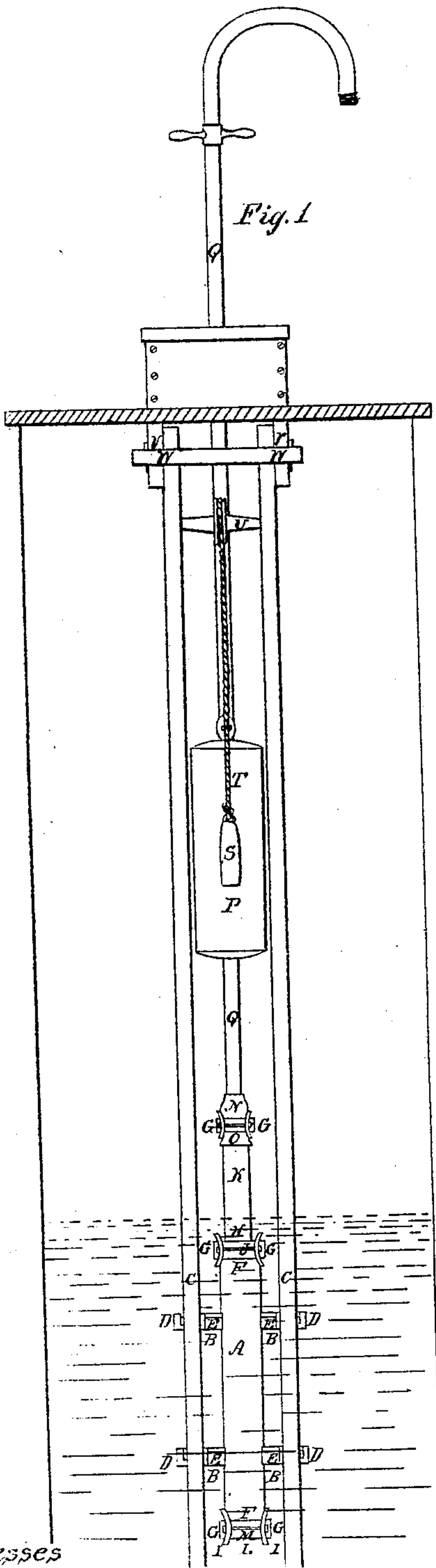


C. Warner,
Pumps,

No 29,424,

Patented July 31, 1860.



Witnesses
C. Warner
Chapman Warner

Inventor
Chapman Warner

UNITED STATES PATENT OFFICE.

CHAPMAN WARNER, OF BROOKLYN, NEW YORK.

PUMP.

Specification of Letters Patent No. 29,424, dated July 31, 1860.

To all whom it may concern:

Be it known that I, CHAPMAN WARNER, of the city of Brooklyn, county of Kings, and State of New York, have made an improvement in Pumps for Raising Water; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure I represents a perspective view of the pump suspended in a well. Fig. II a longitudinal section of the same.

The purpose of my invention is to make an efficient pump of metal and place it in a well for use at the lowest possible price. In doing this I have availed myself of the best known devices that are suited to my plan and which *per se* are not new but I have so combined and arranged these elements as to be useful, cheap, and durable in a new and most efficient manner.

My invention consists in the mode of properly suspending a cylinder in a well below the surface rendering it adjustable and holding it in position for use at any desired elevation without the expensive braces and fixtures heretofore resorted to requiring much skill in their adjustment with a liability to derangement not found in my plan. To effect this object in a cheap and substantial manner, I construct my cylinder A, with two pairs of lugs or brace arms B one pair of which is near the top the other near the bottom of the vertical cylinder A.

These lugs are cast with a shoulder on them at E which on all the lugs is the same distance from the center of the cylinder A, beyond the shoulder E a tongue projects having a key hole through it as at D. Two wooden slats C, are prepared of such size and length as shall be sufficient for the purpose and through their lower ends mortises are made to receive the tongues D on the lugs E by driving a simple key through the key holes above named in the tongues D. The slats are firmly affixed to the cylinder in an exactly parallel position without any critical or accurate adjustment. The upper ends of the slat C, thus forming a permanent and strong frame work of support, are connected with two pendants *v v* that are affixed to the superstructure at the top of the well the mode of connection being by means of a clamp uniting both by keys as is clearly seen in the figures, the height of the

cylinder is determined by channels cut in the slat C, and pendants *v*, into which a cross bar or pin X that is inserted between them, by which means any depth can be reached by said cylinder, which it is intended shall hang very near the bottom of the well, so that no additional pipe will be required below it. Then passing a hollow plunger upon the upper end of which is a valve in a small cup, connected with the pipe through which the water rises by means of a movement of said pipe and plunger, which is produced by a hold upon the curved end with the hand of the operator, thereby dispensing with the use of a lever, as the plunger from its length passing into the cylinder any depth that may be required, will balance the amount of water which would be produced by a plunger of larger size and shorter stroke, and avoid the wear, friction and rattling of joints which are inevitable in the ordinary mode of working a pump.

To enable others skilled in the art to make my improved pump, I proceed to describe it more particularly:

(A) represents a hollow cylinder with lugs (B, B, B, B,) to which slats (C, C,) are attached. The form of these lugs are such that the slats can be fully secured by keys (D, D, D, D,) passing through holes near the ends, which holds them firmly against projecting shoulders at (E, E, E, E,) at a suitable distance from said cylinder to admit of the attaching of other parts there- to, hereinafter described. For cisterns or wells of medium depth—to wit—from 12 to 25 feet, the size and proportions for working the same without a lever, should be about as follows, to wit: The main cylinder should be 18 inches in length, having a caliber of 2 and $\frac{1}{4}$ inches, and at each end a projection or increased thickness forming a hem (F, F,) upon the outer surface of cylinder (A) about $\frac{5}{8}$ of an inch wide, for the purpose of giving additional strength to lugs (G, G, G, G,) by means of which the parts are connected and held together, and also to give additional bearing for leather, which at the upper end forms a packing, and is held to its place by ring (H), having lugs of similar form and size to those upon the ends of the cylinder to be connected by means of links (I, I, I, I).

A disk of leather (J) $\frac{1}{4}$ of an inch—or less—thick, should be placed between ring (H) and cylinder (A), having a hole in the

center, somewhat smaller than the diameter of plunger (K), so that as the latter is forced through, an excellent packing is formed. At the lower end of cylinder (A) is a circular plate (L), with a hole in the center, with lugs upon the sides corresponding to those on the ends of the cylinder. Between this plate and the end of the cylinder, a disk of leather (M), having a flap cut upon its center forms a hinge or connection for flap valve. This ring (H) and plate (L) can be drawn by means of a screw clamp so tight as to hold the leathers (J, M,) firmly in their respective positions, which it is intended they shall occupy.

The links (I I I I) are put over the lugs (G, G, G, G,) and firmly secured to their place by keys (D, D, D, D,). The plunger (K) should be from 1 and $\frac{3}{4}$ to 2 inches in diameter, and hollow—19 inches long having a cup (N) at the upper end, which is connected with it in the same manner that ring (H) and plate (L) are to the cylinder. The diameter of this cup corresponds with that of the plunger (K). This diameter should be preserved to the height of an inch, then reduced suitably for the insertion of a pipe the caliber of which will be $\frac{3}{4}$ of an inch. On the upper end of said plunger (K) and between it, and the cup (N) is a ring or plate (O), with a hole in the center $\frac{3}{4}$ of an inch

in diameter, upon which the valve in said cup rests.

An air vessel (P) surrounding the pipe (Q) serves to give a continuous stream, communication being had through holes (R, R, R,) in pipe (Q) near the bottom end of the air vessel (P.) As it will be necessary in some cases to use a counter balance to divide the power required in the upward and downward motion, that object is effected by a weight (S) attached to one end of a cord (T) the other end of which passes over a pulley (U) and is attached to the pipe. Additional slats V are connected by clamp or clamps W and with a wedge are brought to bear against the sides of pins X.

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

1. The valve cup N, in combination with the pipe and hollow plunger as above specified.
2. Adjusting the pump cylinder A, at the proper height by means of the pendants v, slats C and their attachments as and for the purposes described.

CHAPMAN WARNER.

Witnesses:

CHAUNCEY PERRY,
TIMOTHY PERRY.