

No. 637,694.

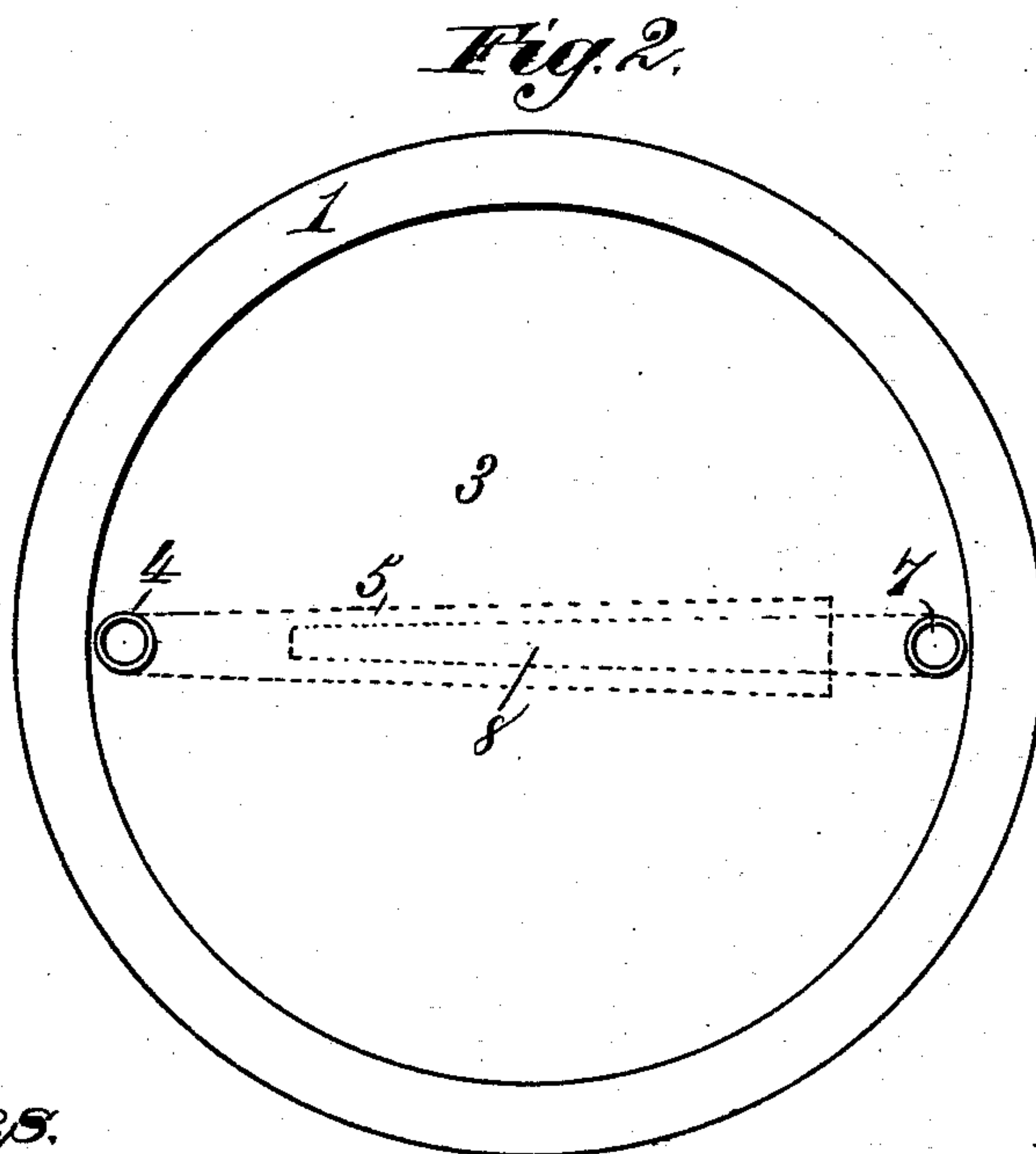
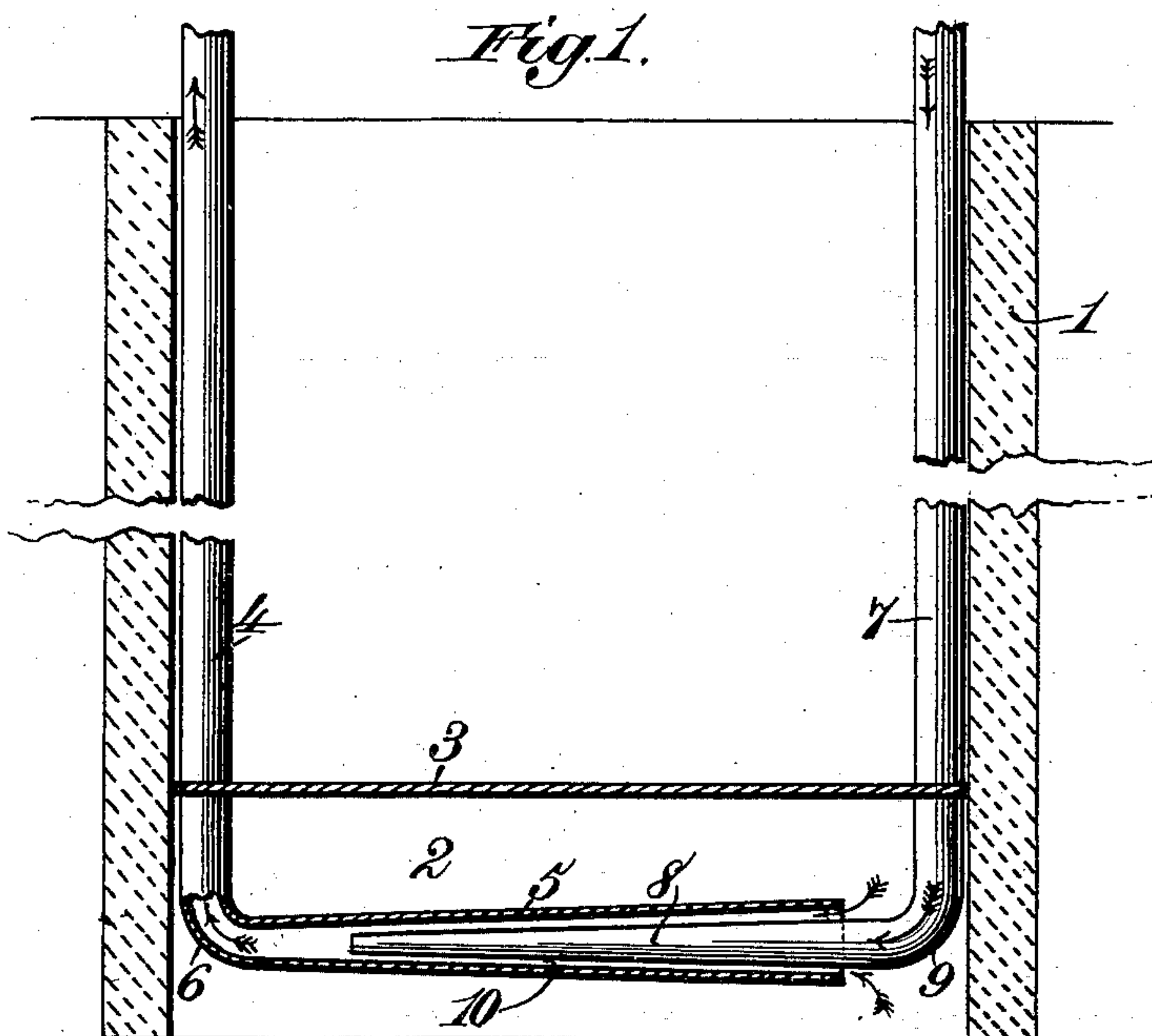
Patented Nov. 21, 1899.

A. BACA.

DEVICE FOR FORCING WATER OUT OF WELLS.

(Application filed Apr. 8, 1899.)

(No Model.)



Witnesses,
Robert Everett,
J. B. Keefe

Inventor,
August Baca,
By James L. Norris
Att'y

UNITED STATES PATENT OFFICE.

AUGUST BACA, OF FAYETTEVILLE, TEXAS.

DEVICE FOR FORCING WATER OUT OF WELLS.

SPECIFICATION forming part of Letters Patent No. 637,694, dated November 21, 1899.

Application filed April 8, 1899. Serial No. 712,288. (No model.)

To all whom it may concern:

Be it known that I, AUGUST BACA, a citizen of the United States, residing at Fayetteville, in the county of Fayette and State of Texas, have invented new and useful Improvements in Devices for Forcing Water Out of Wells, of which the following is a specification.

My invention relates to an improved device for forcing water out of wells.

It is the object of my invention to provide improved means for raising water from a well by means of compressed air or steam.

I have illustrated the invention in the accompanying drawings, in which—

Figure 1 is a vertical sectional view through a well provided with my invention, and Fig. 2 is a sectional plan view on the line 2 2 of Fig. 1.

The reference-numeral 1 indicates the curbing of a cemented well. Secured in this curbing at a suitable distance from the bottom of the well in a manner to afford an air-tight compartment 2 is a steel or other metal plate 3.

The numeral 4 indicates an outlet-pipe for the water, which has its discharge at the top of the well, as usual, and in its lower portion extends through the plate 3 into the compartment 2, where it is bent to provide a longitudinally-extending portion 5. Said horizontal portion of pipe 4 is gradually enlarged from the bend 6 to its outer end, as clearly shown in Fig. 1.

The numeral 7 indicates the compressed-air or steam pipe, which at its upper end is connected with a suitable compressor or engine and in its lower portion extends through the plate 3 at a point diametrically opposite that at which the pipe 4 passes through said plate.

Said pipe 7 within the compartment 2 is also bent to provide a horizontally-extending portion 8, which projects well into the enlarged part 5 of pipe 4 and is tapered from its bend 9 to its outer end, so that its wall is concentric with that of the enlargement 5. The part 8 is of much less diameter than the part 5, so that an annular space 10 is provided between them, the gross area of which should equal the cross-sectional area of pipe 4 at its outlet.

It will be seen that the horizontal parts of pipes 4 and 7 do not rest on the bottom of the well, but occupy a position considerably above the same, so that in the operation of the apparatus there will be little or no tendency to carry up in the pipe 4 any sediment or foreign matter that may be in the bottom of the well. The plate 3 is located considerably above the water-line, as shown.

The operation is as follows: Steam or compressed air being supplied to pipe 7 passes out at the end of the horizontal pipe 8 into the pipe 4, and as there is no other outlet, the compartment 2 being air-tight, as stated, must pass up in pipe 4, thereby causing a suction which will operate to draw the water through the annular space 10 and up in the pipe 4 to the discharge. Any air that might escape, due to back pressure or other causes, from the suction end of pipe 4 will be held in the chamber 2, and thus operate by compression to assist in elevating the water.

Having thus fully described my invention, what I claim as new is—

A device for forcing water from a well comprising a plate secured in said well above the water-level thereof in a manner to afford an air-tight compartment in the lower part of said well, a pipe extending through said plate and having an enlarged horizontal portion submerged in the water of the well and a second pipe extending through said plate and having a reduced horizontal portion projecting into the enlarged part of said first-named pipe in a manner to afford an annular space between the two and adapted to have an elastic fluid forced therethrough, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AUGUST ^{his} X BACA.
mark

Witnesses:

VACLAV PAZDRAL,
METHOD PAZDRAL.