

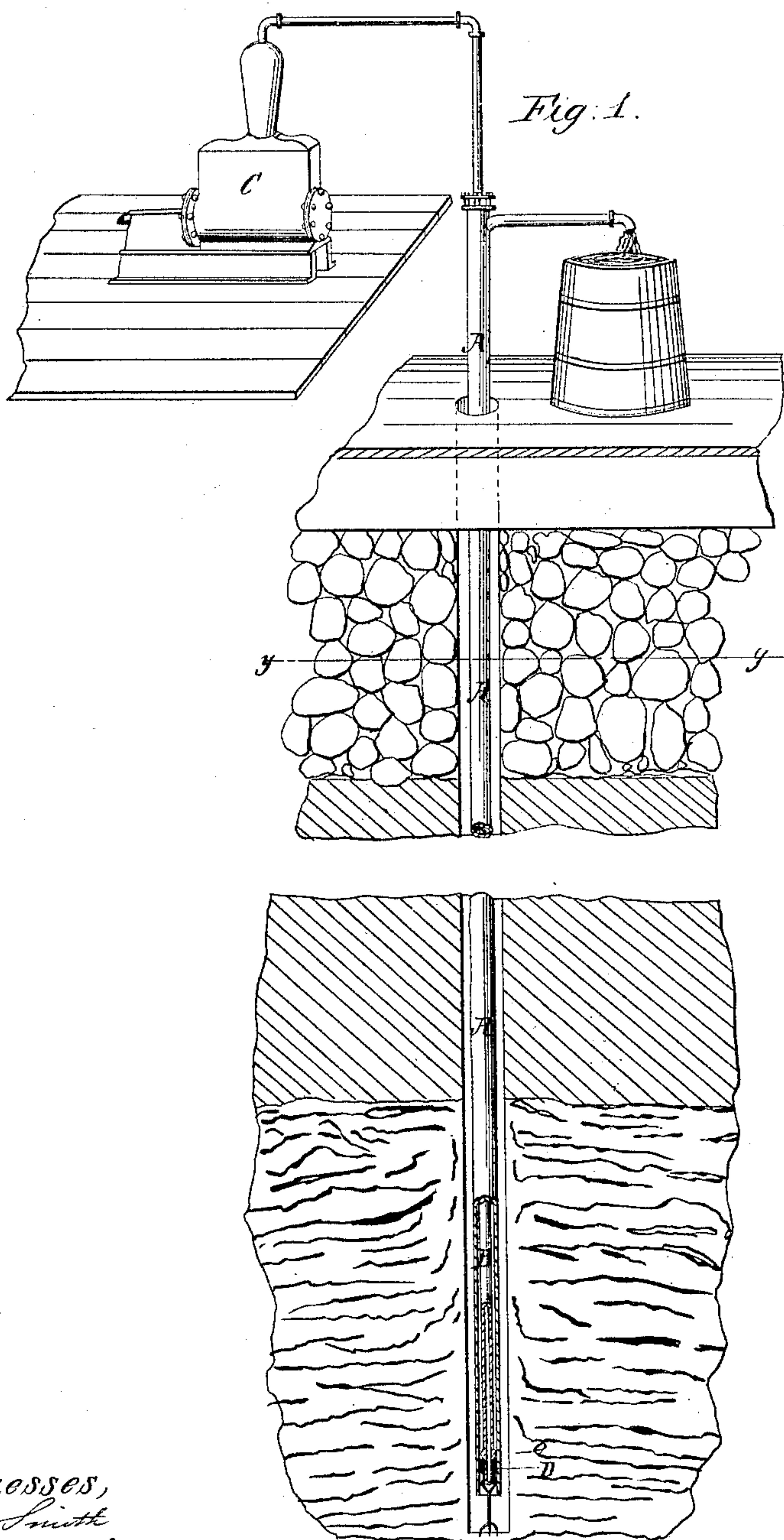
(No Model.)

2 Sheets—Sheet 1.

G. M. MOWBRAY.
EJECTOR FOR OIL WELLS.

No. 44,878.

Patented Nov. 1, 1864.



Witnesses,
C. D. Smith
Edward H. Knight

Inventor,
Geo. M. Mowbray
Per *[Signature]*
H. H. H.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

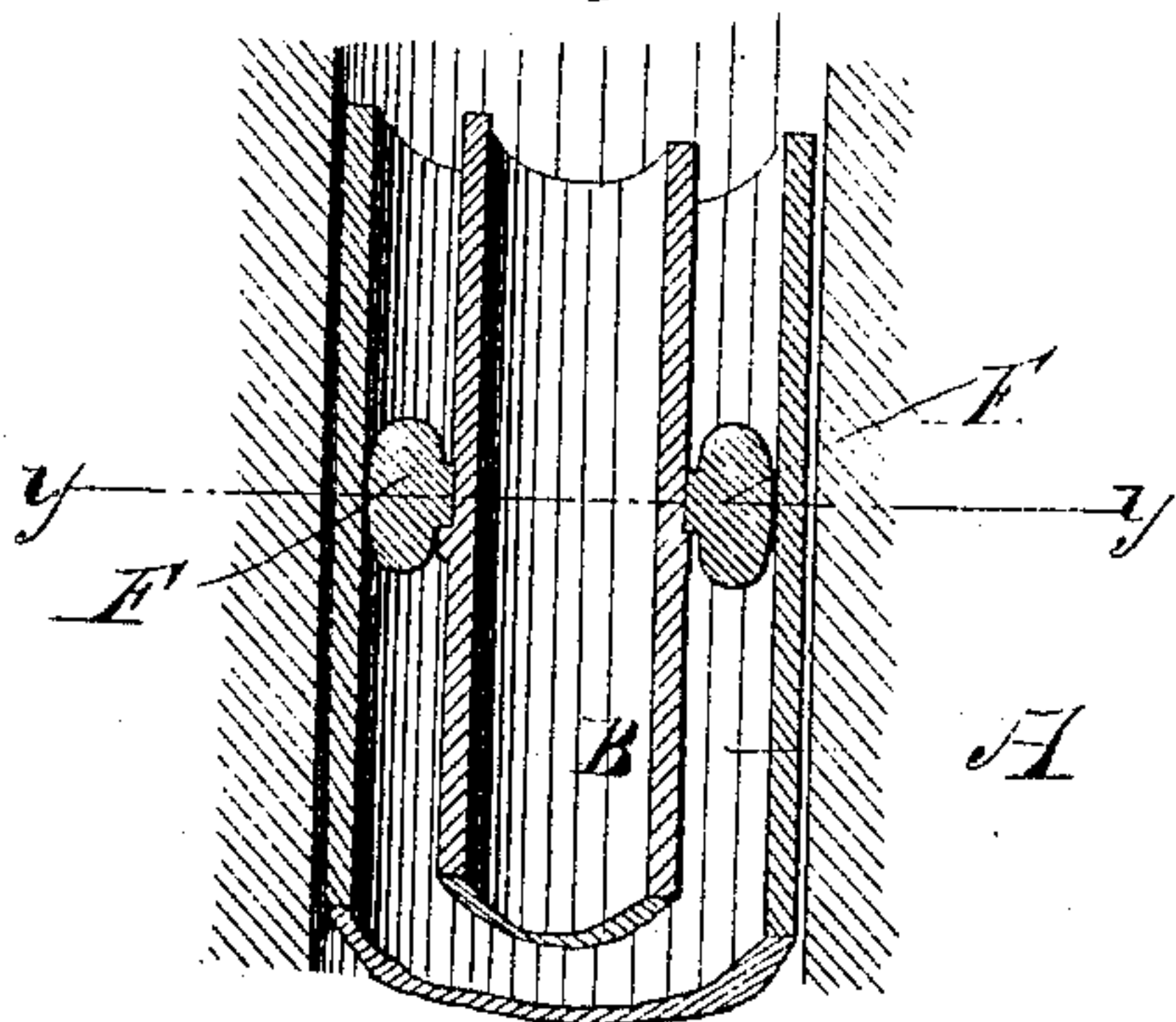


Fig. 3.

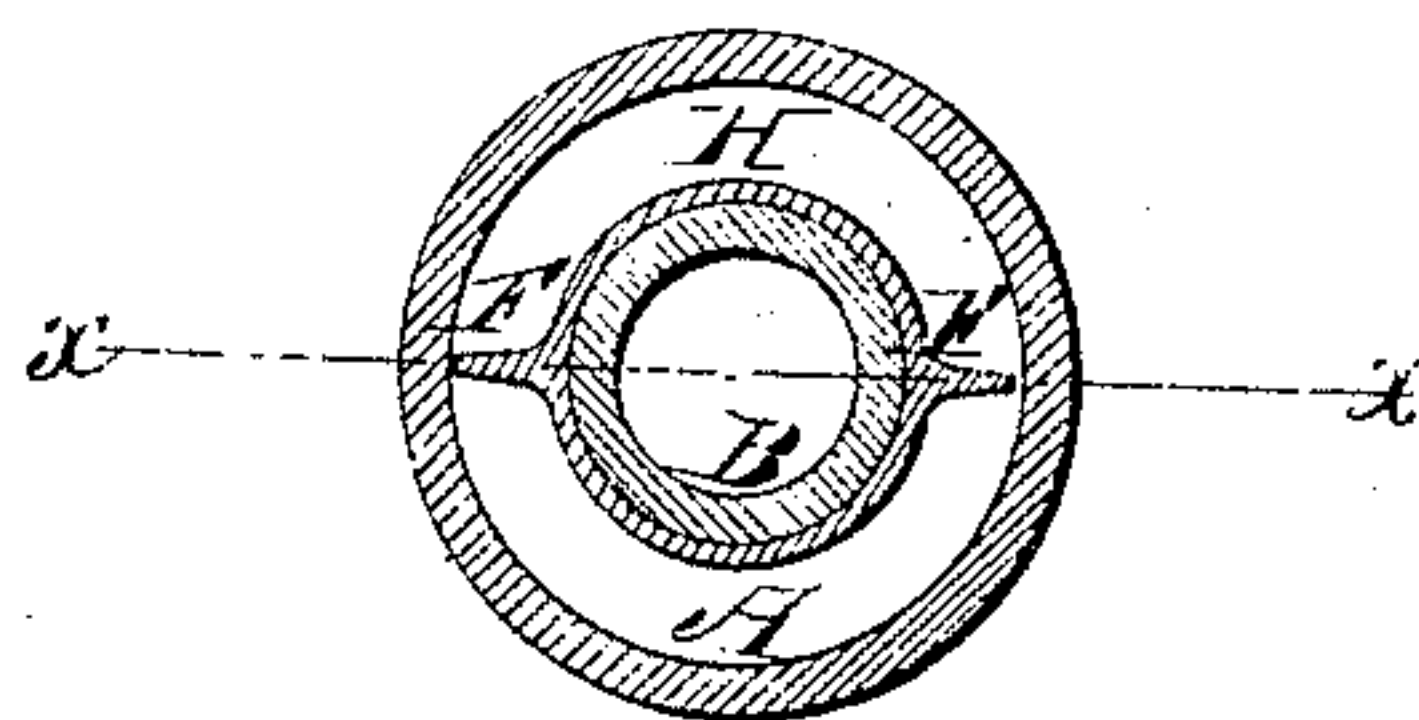


Fig. 4.

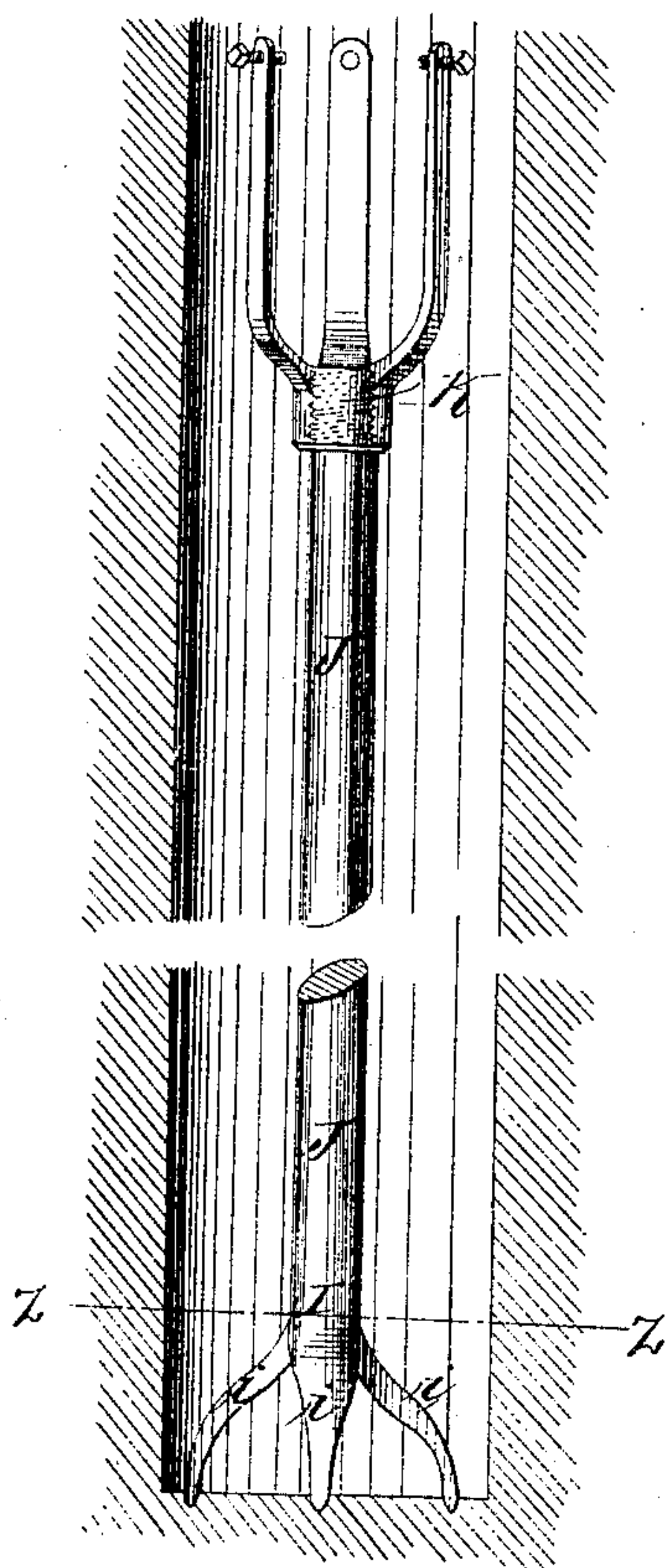


Fig. 5.

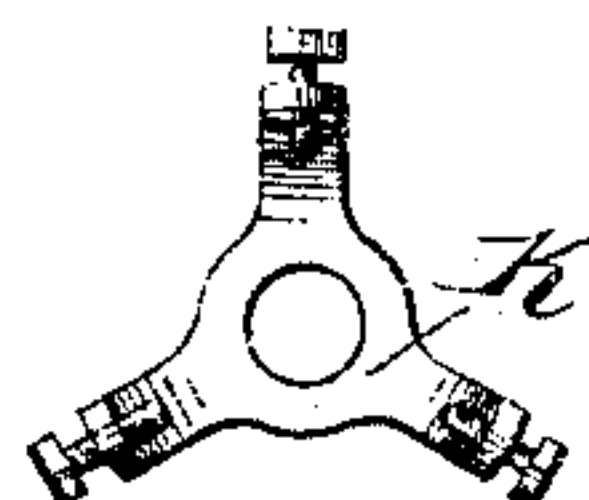
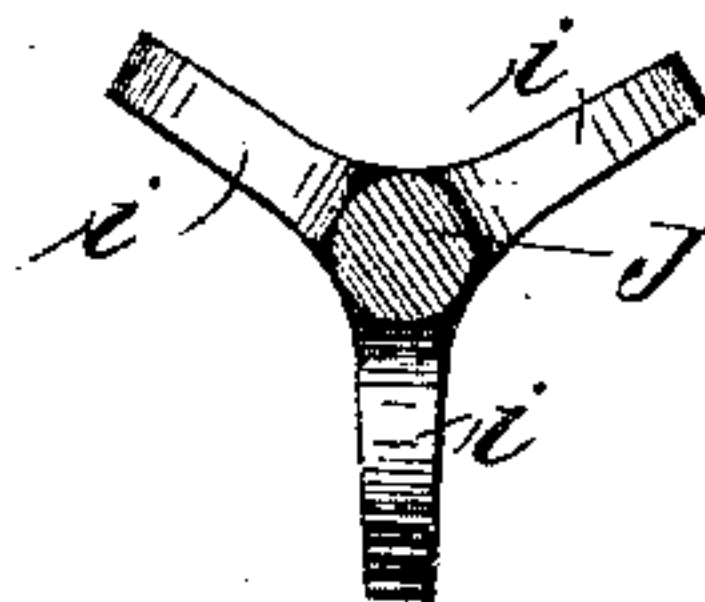


Fig. 6.



Witnesses:

E. D. Smith
James B. Gully

Inventor:

G. M. Mowbray

UNITED STATES PATENT OFFICE.

GEORGE M. MOWBRAY, OF TITUSVILLE, PENNSYLVANIA.

IMPROVEMENT IN EJECTORS FOR OIL-WELLS.

Specification forming part of Letters Patent No. 44,878, dated November 1, 1864.

To all whom it may concern:

Be it known that I, GEORGE M. MOWBRAY, of Titusville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improvement in Pumps or Ejectors for Oil and other Wells; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a vertical section of the apparatus applied to a well. Fig. 2 is a vertical section, on a larger scale, at the line *x x*, Fig. 3, of parts of the concentric tubes, and of the guides, to be hereinafter described. Fig. 3 is a horizontal section of the same at *y y*, Figs. 1 and 2. Fig. 4 is an elevation of the anchor or step employed to support the inner tube or the deflector. Fig. 5 is a top view of the said anchor or step. Fig. 6 is a horizontal section thereof at *z z*, Fig. 4.

Similar letters of reference indicate corresponding parts in the several views.

The nature of my invention consists, first, in providing the inner tube with flanges or guides, which, projecting from its periphery and elongated in the line of the axis, serve to preserve it concentric with the outer tube, leaving an annular space around it for the rising column of oil or water; secondly, it consists in an anchor or step which supports the deflector at the lower end of the inner tube at the required height above the bottom of the shaft, and by its grip upon the ground preserves the deflector from rotation when the inner pipe is rotated for the purpose of adjusting the size of the annular space between the deflector and the bulb.

A is the outer pipe, and B the inner pipe, down which latter a body of air is forced by an air-pump, C, driven by any suitable motor. This air issues in a highly-compressed stream through the annular orifice between the deflector D and the bulb E.

To preserve the inner tube in a central position relatively to the outer tube, I employ flanges F, of a segmental or other shape, which are attached to a sleeve, ring, or collar, H, slipping upon or attached to the inner pipe, B, which flanges are perpendicular and

in contact, or as nearly so as the nature of the case will permit, with the inner sides of the outer pipe, A, to prevent the sagging of the inner pipe against the outer one. These flanges are made as long as may be necessary for strength, but are made narrow, so as not to oppose any great obstacle to the rising stream of air, oil, or water, and of course their length is parallel with the axis of the pipe. These wings may be cast upon the ordinary couplings which connect the sections of tubing.

I do not confine myself to the exact arrangement shown, but may vary it by modifications of detail which need hardly be described, as they would occur to any intelligent mechanic.

The anchor or step at the bottom of the shaft or well, and to which the deflecting-cup is screwed or riveted, consists of a tripod, I, with legs *i i i* and shaft J, with a flanged or armed socket, K. Its purpose is to support the weight of the inner pipe by resting on the ground and maintain the cup in a fixed position, so as to permit the raising or depressing of the air-tube and the conical bulb attached thereto, and consequently opening or partially closing the orifice through which the air issues, without removing the same from the well—that is to say, the lower cup having a determinate position while the air-tube and its attachments are adjustable relatively thereto by rotation of the pipe in the deflecting-cup through which it passes.

So uncertain and fickle are these wells in many instances that when a person has got a well into running order he would rather forfeit a thousand dollars than have to draw his tubing for the adjustment of the orifice or other purposes, and this on account of the difficulty in adjustment in exactly the same condition, which may be the only one in which the apparatus can be operative, owing to causes imperfectly understood, purely conjectural, and incapable of examination at the immense depth.

Having thus described my improvement, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The wings or flanges F, substantially as above described, and for the purposes set forth.

2. The tripod, or its equivalent, attached to a rod or pipe, with feet thereon resting on the ground at the bottom of a well, whereby to support the air-tube and its attachments and maintain the cup in a fixed position while the adjustment is being made, substantially as described, and for the purposes set forth.

To the above specification of my improve-

ments in ejectors for oil and other wells I have signed my hand this 29th day of September, 1864.

GEO. M. MOWBRAY.

Witnesses:

EDWARD H. KNIGHT,

T. N. CHASE.