

(Model.)

A. J. LEWIS.

OIL PUMP.

No. 251,256.

Patented Dec. 20, 1881.

Fig. 1.

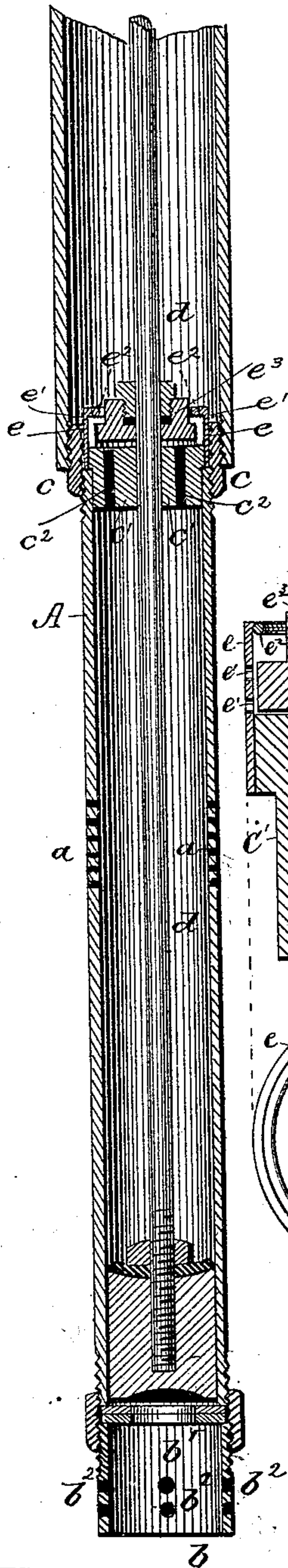


Fig. 2.

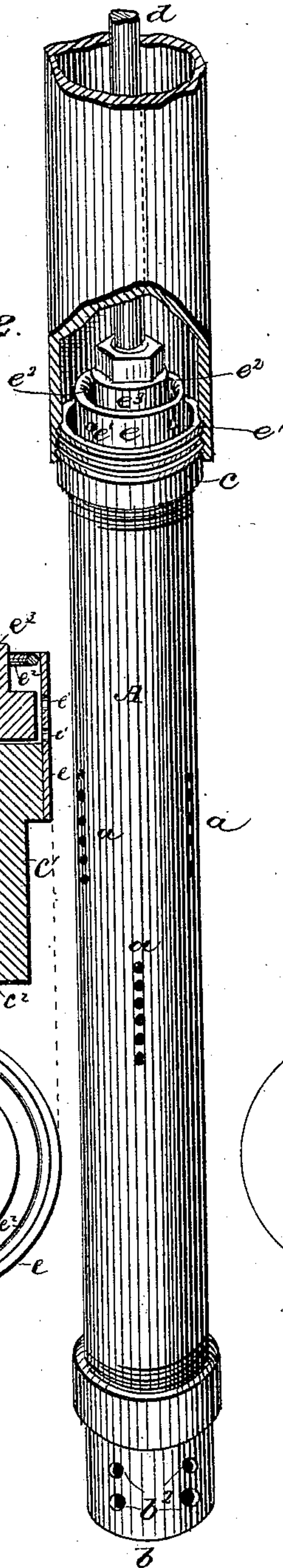


Fig. 3.

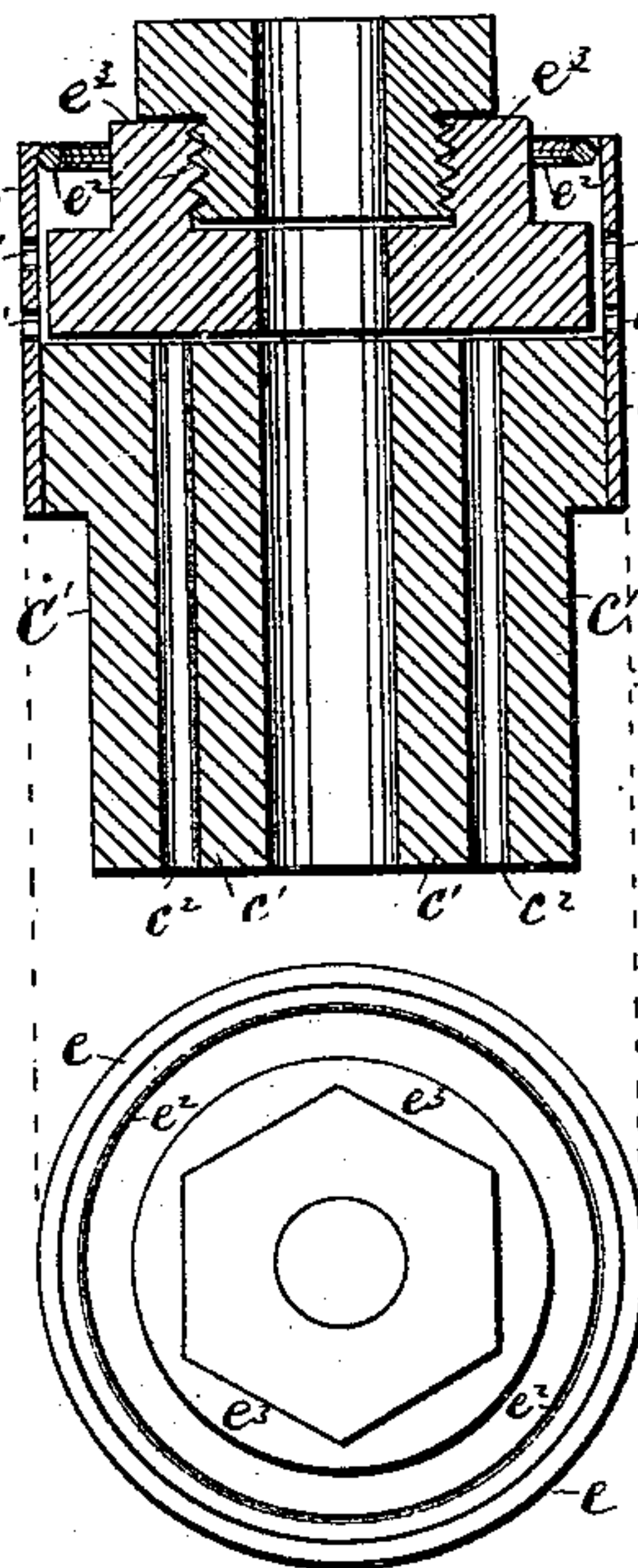
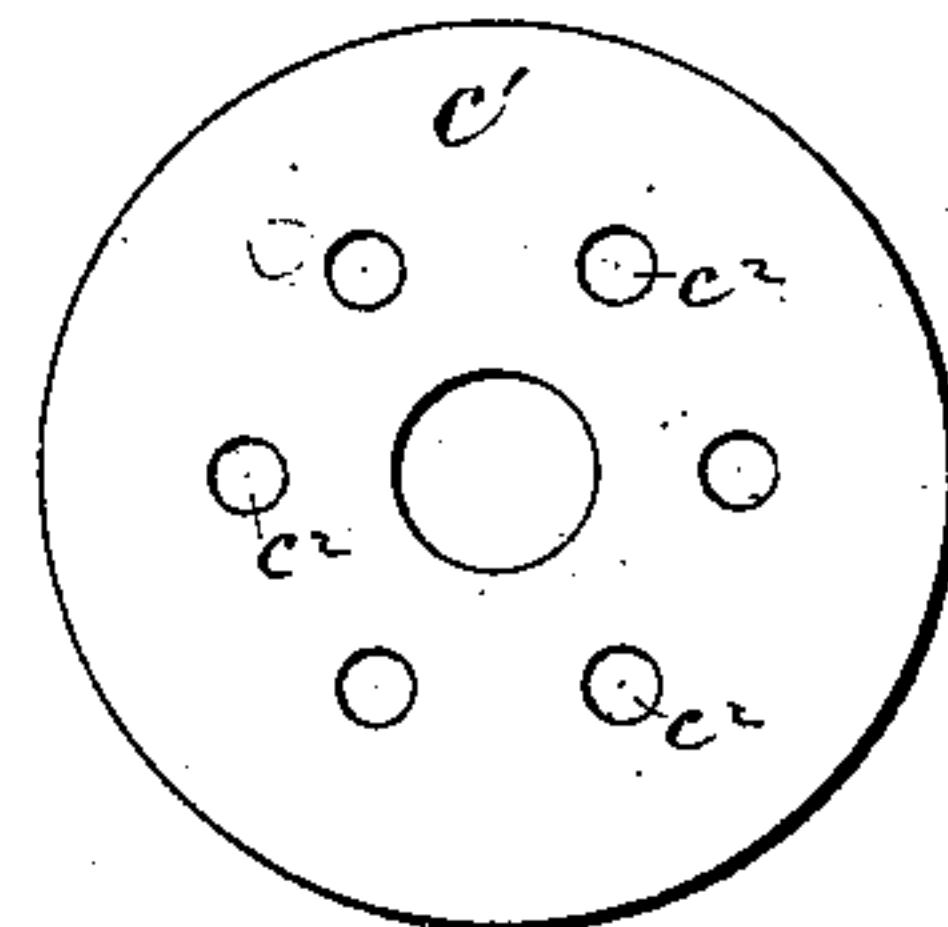


Fig. 4.



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ALFRED J. LEWIS, OF BARNHART'S MILLS, ASSIGNOR TO HIMSELF AND
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OIL-PUMP.

SPECIFICATION forming part of Letters Patent No. 251,256, dated December 20, 1881.

Application filed April 23, 1881. (Model.)

To all whom it may concern:

Be it known that I, ALFRED JOHN LEWIS, a citizen of the United States, residing at Barnhart's Mills, in the county of Butler and State of Pennsylvania, have invented a new and useful Improvement in Oil-Pumps, of which the following is a full, clear, and exact description, reference being had to the drawings hereto annexed.

10 The object of my invention is to provide a vacuum-pump for oil-wells which shall be adapted for agitating the oil, to keep all passages feeding or supplying said pump free from the accumulation of sediment, paraffine, salt, or
15 other obstructions, and to dispense with the ordinary inlet-valves, which are liable to get out of order.

In the accompanying drawings, Figure 1 represents a longitudinal section of the pump-chamber with the tubing above broken away, and Fig. 2 a perspective of the same with the tubing partly broken away; and Figs. 3 and 4, detail views, showing a vertical section and end views of the plug and its attachments.

25 In constructing my invention I employ an ordinary cylindrical piston-chamber, A, of any desired size or length, which I provide with one or more perforations, a , arranged in any desirable order near its central portion, so as
30 to leave sufficient room above for the vacuum. This chamber is provided with screw-threaded ends in order that it may be removably attached to other parts of the pump mechanism, and thereby be capable of being reversed end
35 for end.

To the lower end of the chamber is screwed an attachment, b , which serves as a support for the said chamber, and is provided with an interior collar, b' , upon which the piston rests
40 when detached from the motive power. This attachment or support is also provided with a number of perforations, b^2 , for the egress and ingress of the fluid when forced down by the piston. To the upper end of said piston chamber is screwed a coupling-joint, c , for attaching
45 suitable tubing by which the fluid is to be conveyed above ground, and within said end is secured a plug, c' , having a central perfora-

tion for the piston-rod d , and provided with a number of vertical perforations, c^2 , for the upward escape of the fluid when lifted by the piston. The upper portion of said plug is encircled by a metallic band, e , which is provided with horizontal perforations e' , leading into the said tubing, and having an interior collar, e^2 , at its upper end, for retaining in position a shouldered packing, e^3 , which is made of metal or other suitable material, and so constructed that it may have vertical movement upon the piston-rod, whereby it may expand or rise
60 when the fluid is lifted and allow the same to pass out at the perforations e' in the band e into the tubing above.

The piston d' I prefer to make solid, with a concave head on the lower end; but it may be
65 made with a valve, if so desired.

It will be seen that with an open piston-chamber, as above described, the downward stroke of the piston will cause the fluid to escape through the perforations at any point below the piston with such force as to agitate the entire contents of the well. In this manner all accumulations of sediment, &c., about the pump orifices will be effectually prevented. As the piston descends the vacuum above is
75 filled as soon as the piston passes the orifices in the chamber, and the fluid is lifted by successive upward strokes into the tubing until it escapes above ground.

It is evident that my invention secures a great advantage in dispensing with the usual valves, which are liable to get out of order. I do not limit myself to the peculiar form above described, for my invention may be variously modified so as to secure the same object—
85 namely, the receiving the fluid to be pumped without the necessity of its passing through valves before being taken up by the piston or forcing power.

It is also evident that my invention may be used for pumping not only fluids of all kinds, but also air or gases.

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

1. An agitating vacuum-pump having a per-

forated piston-chamber, in combination with a piston and a perforated plug, substantially as shown and described.

2. In a vacuum-pump, the piston-chamber
5 A, having perforations a near its central portion, in combination with the open-ended support b , having perforations b^2 and interior collar, b' , substantially as shown and described.

3. In a vacuum-pump, the perforated piston-
10 chamber A, having perforated support b secured to its lower end, in combination with the piston d and perforated plug c' , substantially as shown and described, whereby the contents

of the well may be agitated and the use of check-valves dispensed with, as set forth. 15

4. In combination with the perforated piston-chamber A and piston d , the plug c' , having vertical perforations c^2 , metallic band e , having horizontal perforations e' , and interior collar, e^2 , and expansible shouldered packing 20 e^3 , substantially as shown and described.

ALFRED JOHN LEWIS.

Witnesses:

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