

W. H. Elliot

Oil Pump,

N^o 33,736.

Patented Nov. 19, 1861.

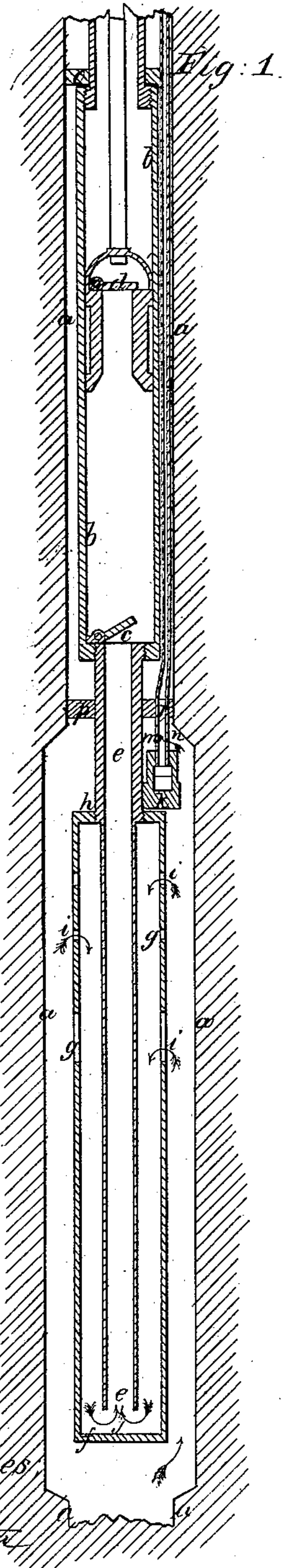


Fig. 2.

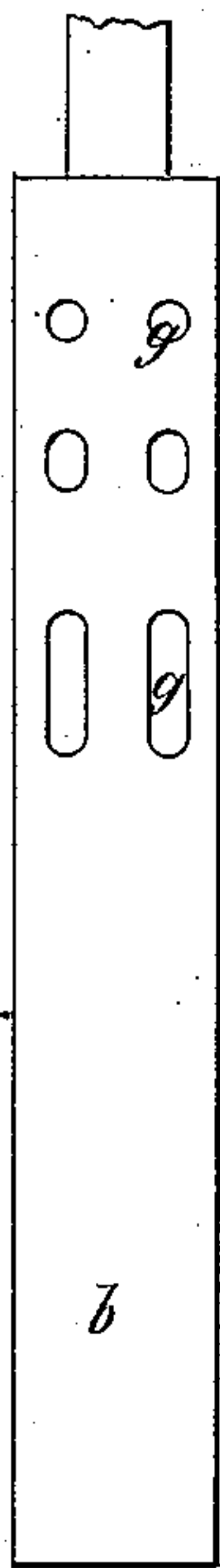


Fig. 3.

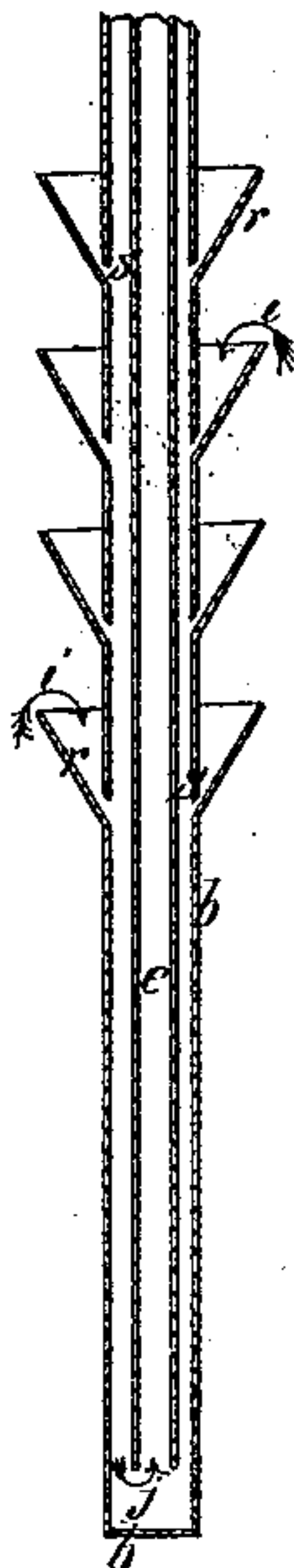


Fig. 4.

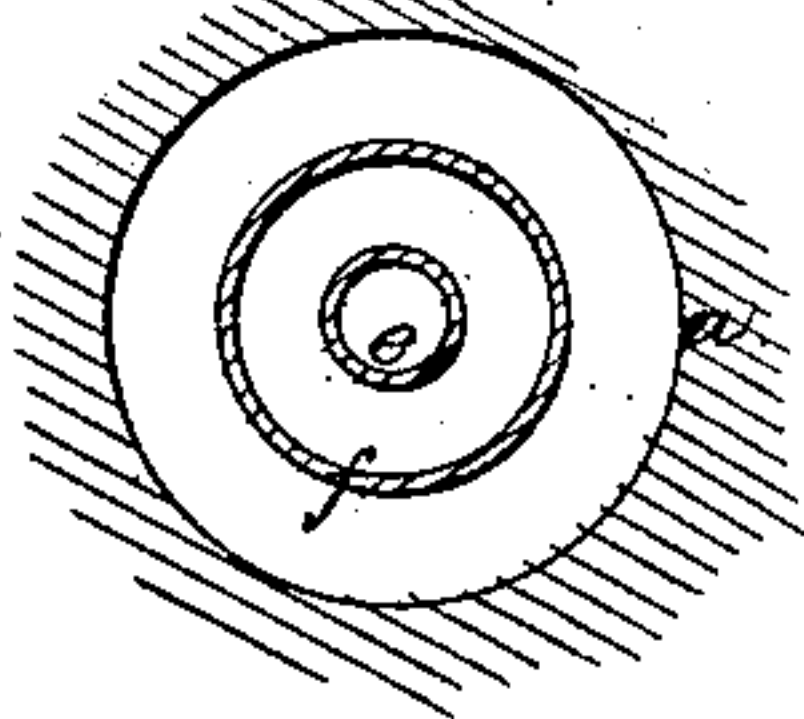
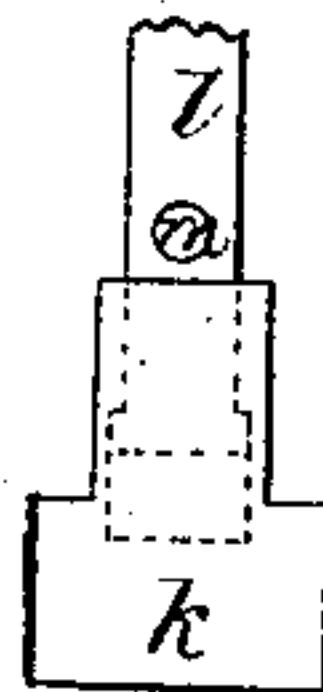


Fig. 5.



Witnesses
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WILLIAM H. ELLIOT, OF PLATTSBURG, NEW YORK.

IMPROVEMENT IN PUMPS FOR OIL-WELLS.

Specification forming part of Letters Patent No. 33,736, dated November 19, 1861.

To all whom it may concern:

Be it known that I, WILLIAM H. ELLIOT, of Plattsburg, in the county of Clinton, in the State of New York, have invented a new and Improved Oil-Well Pump; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Similar letters of reference indicate the same devices in all the figures.

To enable others skilled in the arts to comprehend, make, and use my invention, I will proceed to describe its nature, construction, and operation.

The nature of my invention consists in employing an inner well or trap below and in connection with the pump used in pumping oil-wells, into which the liquids, oil, and water fall, and so separate themselves by their specific gravity from the gases which rise with them and out of which these liquids are drawn by the suction-pipe of the pump.

It further consists in providing a balanced float-valve for the purpose of closing and opening the pipe through which the gases escape from the well.

Figure 1 is a section of my improved pump and of that portion of an oil-well which contains the pump. Fig. 2 is an elevation of the inner well. Fig. 3 is a section of an inner well, with a series of traps surrounding it to facilitate the separation of the liquids from the gases. Fig. 4 is a section of the oil-well, inner well, and suction-pipe. Fig. 5 is an elevation of a balanced floating valve closing the gas-escape pipe.

a is the oil-well; *a'*, a portion of the oil-well "barreled out" for the purpose of obtaining more room within the well; *b*, pump-cylinder; *c*, lower valve; *d*, upper or piston valve; *e*, suction-pipe; *f*, inner well; *g*, openings in the walls of the inner well, through which the liquids pass; *h*, screw-fastening of the inner well to the suction-pipe; *i*, arrows showing the direction of the liquids in passing into the inner well; *j*, arrows showing direction of the liquids in passing from the inner well into the suction-pipe; *k*, floating valve; *l*, escape-pipe for gases; *m*, openings into the same, which are closed by the floating valve *k* when it is raised by the water; *n*, arrow showing the direction of the gases; *o* and *p*, packing, which separates the upper from the lower portions of the well; *r*, traps

surrounding the inner well to facilitate the separation of the liquids and gases; *s*, openings from the bottom of the same into the inner well.

One of the great difficulties to be met with in working oil-wells arises from the presence of large quantities of gas rising with the water and oil, and this difficulty has become so serious in some cases as to render even the richest wells entirely useless.

The object of my improvements in oil-well pumps is to effect a perfect separation of the liquids from the gases and bring them to the surface of the earth through different channels, and this object is effected in the following manner: As the gases and the liquids rise together around the inner well the liquids pass through the openings *g* and fall to the bottom of the inner well, while the gases continue to rise and pass out through the escape-pipe *l*, which leads to the top of the well. The liquids thus separated from the gases by gravitation are taken from the inner well by the suction-pipe *e*. It is obvious that while there is any liquid in the inner well no gas can pass into the pump. The object of placing a valve upon the lower end of the escape-pipe *l* is to prevent the liquids from passing into that pipe when there is no gas present. When the liquids rise to the valve they float it and cause it to slide over the openings *m*, so as to close the escape-pipe to the passage of liquids. The presence of gas at the valve causes the liquids to fall, and thus opens the escape-pipe *l* to the passage of gas. The packings *o* and *p* are intended to cut off that portion of the well which is above the pump from that portion which is below it, so that the pump may bring out nothing except what comes into the well below it.

Having thus fully described my improved oil-well pump, what I claim as my invention, and wish to have secured to me by Letters Patent, is—

1. The employment of an inner well or trap in combination with the pump, as and for the purpose specified.

2. The employment of floating valve *k* in combination with the pump, as and for the purpose set forth.

Plattsburg, New York, October 9, 1861.

WM. H. ELLIOT.

Witnesses:

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