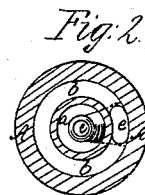
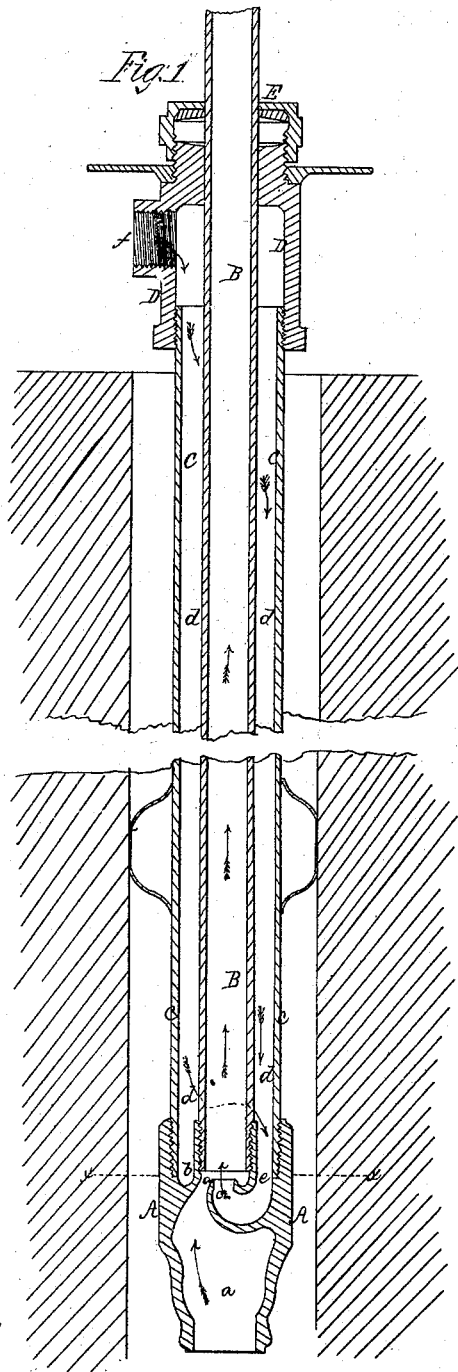


A. BREAR.  
OIL EJECTOR.

No. 47,793.

Patented May 23, 1865.



Witnesses:  
Henry T. Brown  
Geo W Reed

Inventor  
A. B. Brear

# UNITED STATES PATENT OFFICE.

ABEL BREAR, OF SAUGATUCK, CONNECTICUT.

## IMPROVEMENT IN OIL-EJECTORS.

Specification forming part of Letters Patent No. 47,793, dated May 23, 1865.

*To all whom it may concern:*

Be it known that I, ABEL BREAR, of Saugatuck, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Ejectors for Raising Oil from Wells and for other Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central vertical section of an injector constructed according to my invention, showing it applied in an oil-well. Fig. 2 is a horizontal section of the ejector in the plane indicated by the line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

The oil-tube of the ejectors now in common use for raising the oil from oil-wells is very liable to be clogged by the paraffine which exists in the oil becoming congealed by the cooling influence of the water which is present in the well, and which, with the arrangements of the oil and blast tubes heretofore adopted, is in immediate contact with the oil-tube.

The object of my invention is to protect the oil-tube from the cooling influence of the water, and to render or keep the oil limpid while being forced up from the well; and to this end it consists, principally, in the arrangement of the oil-pipe within the blast-pipe, so that the latter, with its contained air, steam, or gas, forms a protecting-jacket to the oil-tube.

To enable others skilled in the art to apply my invention to use, I will proceed to describe it with reference to the drawings.

A is the lower mouth piece or socket of the ejector, having a vertical central passage, *a*, extending directly through it, and having provided around the upper part of the said central passage an annular cavity, *b*, which is open at the top, but closed at the bottom, except at *e*, where it communicates with a turned-up nozzle, *c*, the mouth of which is concentric with the central passage, *a*.

B is the oil-tube, having its lower end screwed tightly into the upper part of the central passage, *a*, of the socket A.

C is the blast-tube surrounding the oil-tube, and of sufficiently larger caliber to leave between the two an annular passage, *d*, of suffi-

cient size for the blast. This tube is screwed tightly into a female thread cut around the outer sides of the cavity *b*. The upper end of the said tube has screwed tightly onto it a socket, D, at the top of which is a stuffing-box, E, through which the oil-tube passes, the said stuffing-box making a tight joint between the upper parts of the two tubes and providing for their unequal expansion and contraction. In one side of the socket D is an opening, *f*, for the connection of the blast-pipe. The tubes B C are of such length that the lower socket or mouth-piece, A, may be immersed to a suitable depth in the oil at the bottom of the well, and the upper socket, D, be at a suitable distance above ground.

The operation is as follows: The steam, air, or other gaseous body by the pressure of which the oil is to be raised, being admitted through the opening *f* to the socket D, descends the blast-tube C to the cavity *b* in the lower socket, A, and, passing through the opening *e* and nozzle *c*, forces up the oil through the tube B, which, being surrounded by the jacket of air or steam in the annular space *d* between the said tube and the tube C, is protected from the cooling influence of the water in the well. If steam were admitted through the tube C to force up the oil, it would of course warm the tube B; or if, as is the common practice, compressed air be used for the blast through the tube C, the increased temperature given to the air by the compression will have a similar warming effect on the tube B, and the paraffine will thereby be prevented from congealing and clogging the said tube, and the oil be kept limpid, so that it will flow freely upward.

I do not claim the use of steam or compressed air for elevating oil or other liquids.

What I claim as my invention, and desire to secure by Letters Patent, is—

In combination with my arrangement of the oil or discharge tube and the blast-tube of an ejector, the lower socket, A, constructed with a central passage, *a*, right through it, and with an annular cavity, *b*, surrounding the said passage, and communicating with the nozzle *c*, arranged within the said passage, substantially as and for the purpose herein specified.

ABEL BREAR.

Witnesses:

HENRY T. BROWN,  
GEO. W. REED.