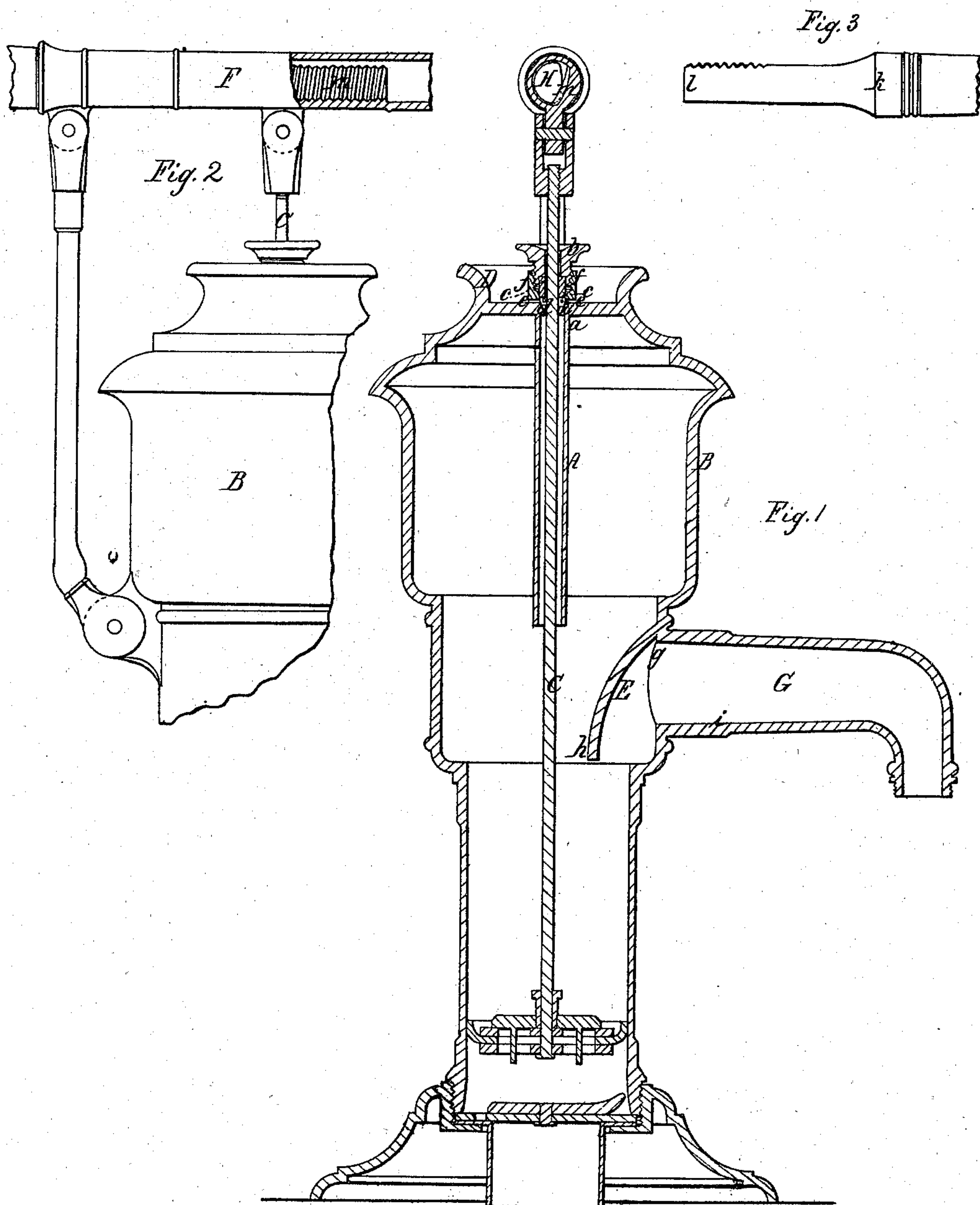


J. EDSON.  
PUMP.

No. 10,885.

Patented May 9, 1854.





# UNITED STATES PATENT OFFICE.

JACOB EDSON, OF BOSTON, MASSACHUSETTS.

## PUMP.

Specification of Letters Patent No. 10,885, dated May 9, 1854.

*To all whom it may concern:*

Be it known that I, JACOB EDSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Pumps, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1, is a vertical section through the pump. Fig. 2, is an elevation of the same; Fig. 3, a portion of one of the brake bars.

The pumps of this description where the pump rod passes down through the center of the air chamber, the air from the latter escapes gradually through the packing around the piston rod, and thus the efficiency of the air chamber is impaired, if not altogether destroyed.

To remedy this inconvenience and to obtain an air chamber that shall be positively tight however loosely the pump rod may be packed, is the object of my first improvement; which consists in the attachment of a tube A, to the interior of the pump B, as represented in Fig. 1, through which the pump rod C, is permitted to pass, the tube being soldered or otherwise secured to the top of the air chamber so as to form an air and water tight joint at *a*. It is evident now if the packing of the pump rod be ever so imperfect no air can at any time escape from the air chamber after the water has risen in the pump to a level with the bottom of the tube A.

My pump is designed to be used either as a lift or force pump, and may be changed from one to the other by tightening or loosening the screw *b*, to which is attached the packing *c*, of the piston, which is composed of india-rubber, or other suitable substance, and which is forced into the conical opening *d*.

*e* are holes bored through the socket *f* around its whole circumference, and opening a communication between the cup D, and the interior of the tube A.

When the packing *c*, is raised as represented in Fig. 1, the communication between the cup D, and the interior of the pump is opened through the holes *e*, and the pump may be used as a lift pump. When the packing is depressed into the conical opening *d*, for the purpose of packing the pump-rod, the communication between the holes *e* and the tube A, is cut off, and

the pump may be operated as a force-pump. When it becomes necessary to introduce water into the pump on putting it into operation, the screw *b*, is raised and water is poured into the cup D, and passes through the holes *e*, into the body of the pump.

In order to increase the capacity of the air chamber when the pump is used as a force-pump, and at the same time to make use of a portion of the same as a water chamber, when the pump is used as a lift pump, I have adopted the following device.

E is an inclined partition within the body of the pump descending from the top of the spout at *g* to a point *h* somewhat below the level *i* of the spout; it will be perceived that by means of this construction, when the pump is used as a lift-pump that the water will rise in the space below the bottom of the tube A, and will also continue to flow from the spout in an unbroken stream until the level of the water within the pump has descended to near the point *h*, the partition E, preventing the air within the pump from entering the spout and producing that continued flow of water in a small stream for some time after the pump has ceased to operate, as in lift pumps of ordinary constructions, while the space between the point *h* and the bottom of the tube A, is made to serve at the same time as an addition to the air chamber B, and also as a water chamber as above specified.

Some method of securely attaching the brake-arm to the pump so that they may be instantaneously and firmly secured thereto and at the same time be easily removed is very desirable particularly for ships' pumps. By the ordinary mode of fastening the brake bars in place, however tightly they may fit at the point *k*, at the entrance of the socket F, if they do not fit as tightly at their inner ends *l*, they will still be loose, and even though they may be made to fit snugly from *k* to *l*, they will often work loose on being operated. To obviate this difficulty and to hold the handles on brake bars securely in the sockets, the latter are cast with a short section of the inclined edges or screw threads *m*, projecting from their interior surface, the brake bar is then shaved down upon one side so as easily to enter the oblong hole H, it is then turned that the sharp edges *m*, may cut into the bar and draw it by their inclination firmly into the socket, where it is held without the pos-



sibility of shaking out of place though it may be instantly loosened for removal by turning it back in the opposite direction.

I claim—

5 1. The tube A, in combination with the air chamber B, constructed and operating in the manner and for the purpose set forth.

2. The cup D, in combination with the holes *e*, and the packing *c*, constructed and

applied to a force-pump as described and 10 for the purpose set forth.

3. The inclined partition E in the rear of the spout G, operating in the manner and for the purpose set forth.

JACOB EDSON.

Witnesses:

JNO. MURDOCH,  
SAM. COOPER.