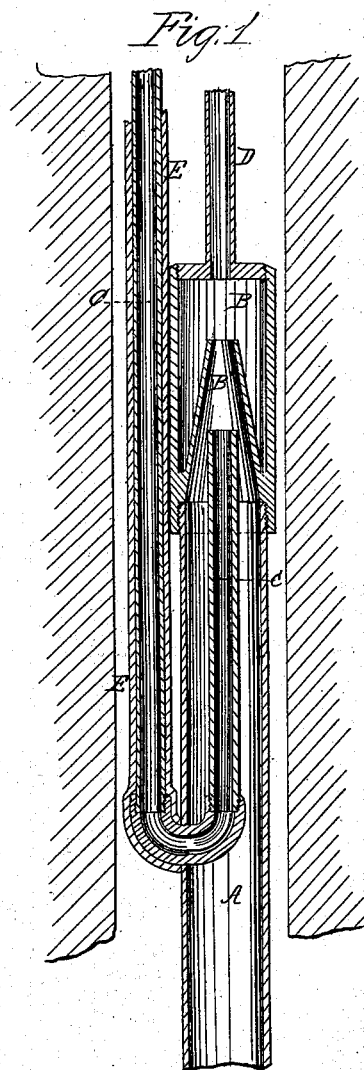


*E. Crooker,*  
*Ejecting Pump,*  
*No. 47,399,* *Patented Apr. 25, 1865.*



*Witnesses:*  
*W. B. Fortuoch*  
*Geo. H. Wallace*

*Inventor*  
*Erastus Crooker*

# UNITED STATES PATENT OFFICE.

ERASTUS CROOKER, OF BUFFALO, NEW YORK.

## IMPROVEMENT IN OIL-EJECTORS.

Specification forming part of Letters Patent No. 47,399, dated April 25, 1865.

### *To all whom it may concern:*

Be it known that I, ERASTUS CROOKER, of the city of Buffalo, county of Erie, and State of New York, have invented a method of preventing the condensation of steam in steam-pipes used in elevating oil from deep petroleum-oil wells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure I is a vertical section of a steam oil-ejector, which is located at or near the bottom of an oil-well, and the non-condensing steam-pipe by which the same is supplied with steam. Fig. II is a cross-section of same.

The nature of this invention relates to covering the steam-pipe by which the steam is supplied to the ejector with gutta-percha, india-rubber, or other suitable material, so that the steam-pipe shall not come in contact with oil or water in the well and thereby keep the steam-pipe hot, so that the steam will not condense therein.

In all the petroleum-oil wells, so far as my knowledge goes, where an effort has been made to raise or elevate the oil by an application of steam through ejectors there has been a great difficulty in getting the steam down to any considerable depth by reason of the low temperature of the wells, causing the steam to condense in the pipe before reaching a sufficient depth to operate the ejector. My improvement affords a remedy for this difficulty. The gutta-percha covering effectually protects the pipe from the effects of the cold water, air, and low temperature of the wells, and allows the steam to be forced down the pipe to any required depth without any ma-

terial condensation or loss of pressure; and hence my improvement will render the use of steam-ejectors for raising oil from these wells entirely successful.

The ejector consists of a suction-barrel, A, surmounted by a chamber, B, containing a conical nozzle, B', opening upward, and the steam-supply pipe C, the lower end of which is bent up in the form of a U, so as to discharge into the conical nozzle. D represents the oil-discharge pipe, opening into the top of the chamber B directly over the mouth of the conical nozzle. This pipe extends up to the surface of the ground and discharges into a proper receiver or tank. The steam-pipe C leads down into the well side by side with the discharge-pipe, being connected at its upper end to an appropriate boiler for generating steam to operate the ejector.

E represents a layer of gutta-percha, india-rubber, or other suitable material with which the steam-pipe C is covered throughout its whole length from the boiler to the ejector.

I disclaim the invention or discovery of the application and use of steam or compressed air for elevating oil or other liquids from deep wells. I also disclaim the ejector-instruments, now used for such purpose; but

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

A steam-pipe covered with gutta-percha or other equivalent material fitting closely thereto, in combination with an ejector and discharge-pipe, substantially as and for the purpose set forth.

ERASTUS CROOKER.

Witnesses:

GEO. W. WALLACE,  
W. H. FORBUSH.