

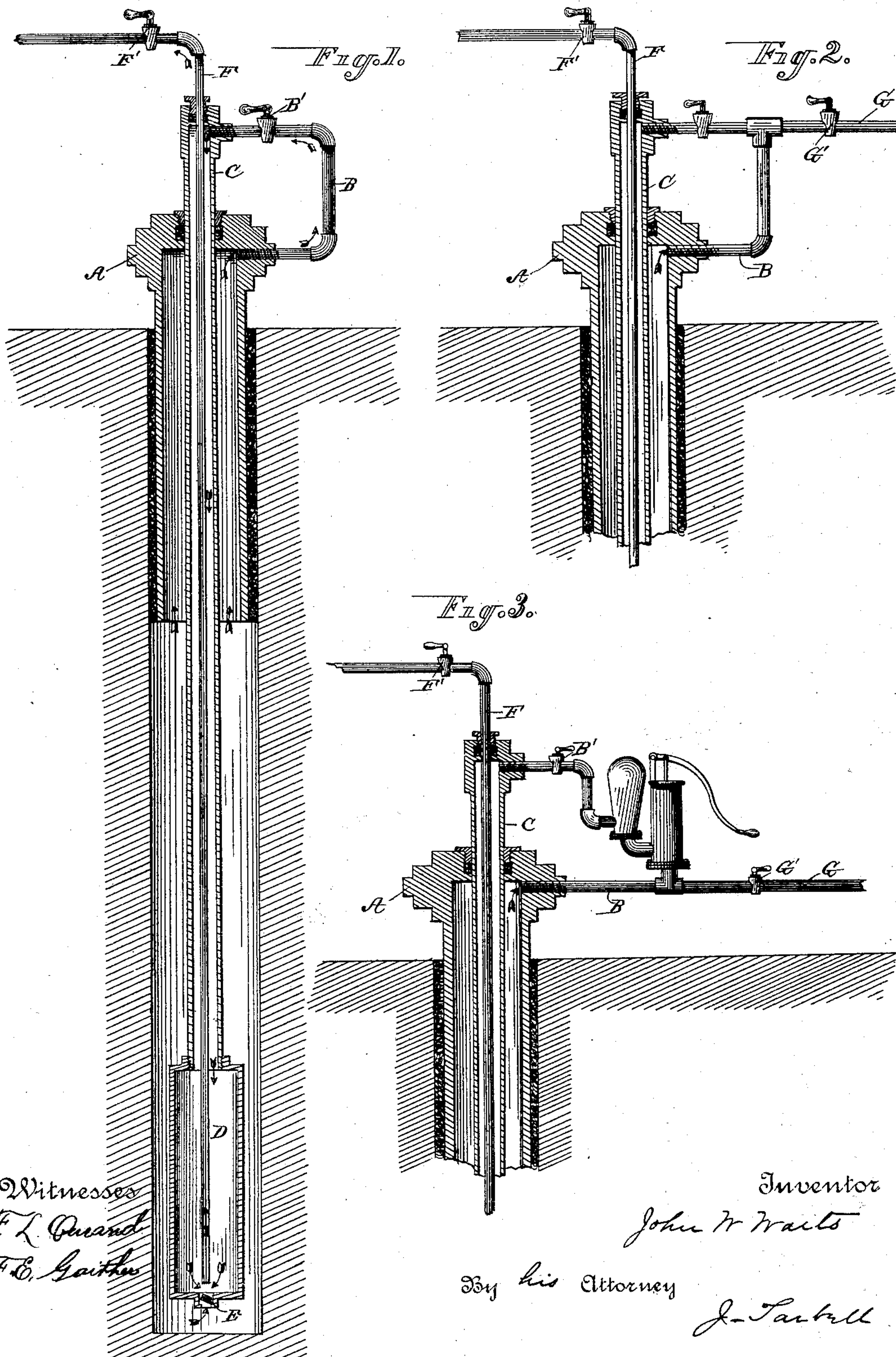
(No Model.)

J. W. WAITS.

DEVICE FOR MAKING OIL WELLS FLOW.

No. 371,006.

Patented Oct. 4, 1887.





# UNITED STATES PATENT OFFICE.

JOHN WILLIAM WAITS, OF ROUSEVILLE, PENNSYLVANIA.

## DEVICE FOR MAKING OIL-WELLS FLOW.

SPECIFICATION forming part of Letters Patent No. 371,006, dated October 4, 1887.

Application filed December 2, 1886. Serial No. 220,498. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WILLIAM WAITS, a citizen of the United States, and a resident of Rouseville, county of Venango, State of Pennsylvania, have invented new and useful Improvements in Devices for Making Oil-Wells Flow, of which the following is a full and exact description, reference being had to the accompanying drawings, making part of this specification.

This invention relates to improvements in devices for making oil-wells flow; and it consists in the construction and arrangement of the parts whereby the deposit of the well is confined in a pure condition and so as to be easily extracted, the pressure is taken off the sides of the well, the amount of oil to be drawn off can be regulated as desired, the gases of the well can be utilized in the operation of the same, the gases of adjoining well or reservoir may be utilized to aid the gases of the well in the operation of the same, and whereby the use of a packer is dispensed with.

In the drawings, Figure 1 is a sectional view of an oil-well provided with this invention. Fig. 2 is a view of a modification of the invention. Fig. 3 shows the disposition of the pipes when a force-pump is brought into use.

In the drawings, A designates a casing which is placed over the mouth of the well. The space between the sides of the well and the casing is packed, so that water from the surface of the earth cannot get into the well nor gas escape therefrom. From the side of the head of the said casing emanates a pipe, B. This pipe is bent back, so as to make connection with a large tube, C, and is provided with a stop-cock, B', between the said connections with the casing A and tube C. The tube C is passed through a perforation in the head of the casing A, and the joint is packed to prevent escape of gas. The said tube C extends from above the junction with the pipe B down into the well to the pocket D, with which it makes a gas-tight junction. The pocket D is constructed larger than the tube C, and is placed at the bottom of the well. It is provided at the bottom with a valve, E, opening inwardly. This valve is placed in a small chamber in the bottom of the said pocket, substantially as shown, so as not to interfere with the adjusting of the tube F. The said tube F is smaller

than the tube C, and is set in the same, through a perforation in the head which is packed to prevent the escape of the gas. This tube is provided outside the tube C with a stop-cock, F'. The said tube can be lowered or raised in the tube C, as desired, and thus regulate the amount of oil to be drawn out of the pocket D by raising the bottom of the tube in the said pocket.

In the modification shown in Fig. 2 the pipe G is connected to the pipe B, and leads to an adjoining well or reservoir of gas. It is provided with a stop-cock, G'.

In the operation of this invention the oil deposited in the well gains entrance into the pocket D by way of the valve E. If the cock B' is closed, the accumulation of gas in the well will force the oil into the pocket above the level in the well and above the end of the tube F. The cock B is now opened and the gas allowed to escape from the well into the tube C by way of the pipe B. When this is done, the gas expands and forces down upon the oil in the pocket D, driving it up the tube F. This it will continue to do so long as the oil in the pocket D is above the end of the tube F. The flow of the oil from the tube F is now controlled by the cock F', by means of which it can be run off rapidly or slowly, as the pressure on the well may require. When the desired amount of oil has been drawn, the cock B' is closed, thus relieving the pressure of the gas and oil upon the valve E in the pocket. Then this cock B is closed, and the expansive force of the gas is exerted upon the oil outside, which is forced into the pocket by way of the said valve E.

If the well being operated is so deep that the gas generated within itself will not lift the oil to the surface, the cock G' of the pipe G is turned on and the gas from the reservoir, or an adjoining well, introduced into the well to aid the gas of the same. If it now proves necessary, a force-pump is connected to the said pipe and the gas is forced down the tube C, as shown in Fig. 3 of the drawings.

The quantity of oil to remain in the pocket can be regulated by drawing the tube F up, or lowering it, as the case may be.

What I claim is—

In a device, such as described, for making oil-wells flow, the combination of a large tube

extending to or near the bottom of said well,  
said tube attached to and opening into an en-  
larged casing or pocket situated at or near  
the bottom of the well, said casing or pocket  
5 provided with an inwardly-opening valve,  
substantially as described, a small tube ex-  
tending to or near the bottom of said pocket  
and inclosed by said large tube, a casing clos-  
ing the mouth of the well and inclosing the

said tubes, substantially as described, and a  
pipe connecting the said casing and large tube,  
substantially as set forth.

In testimony whereof I have hereunto set my  
hand this 18th day of November, A. D. 1886.

JOHN WILLIAM WAITS.

Witnesses:

HUGH C. GRAHAM,  
M. BATES.