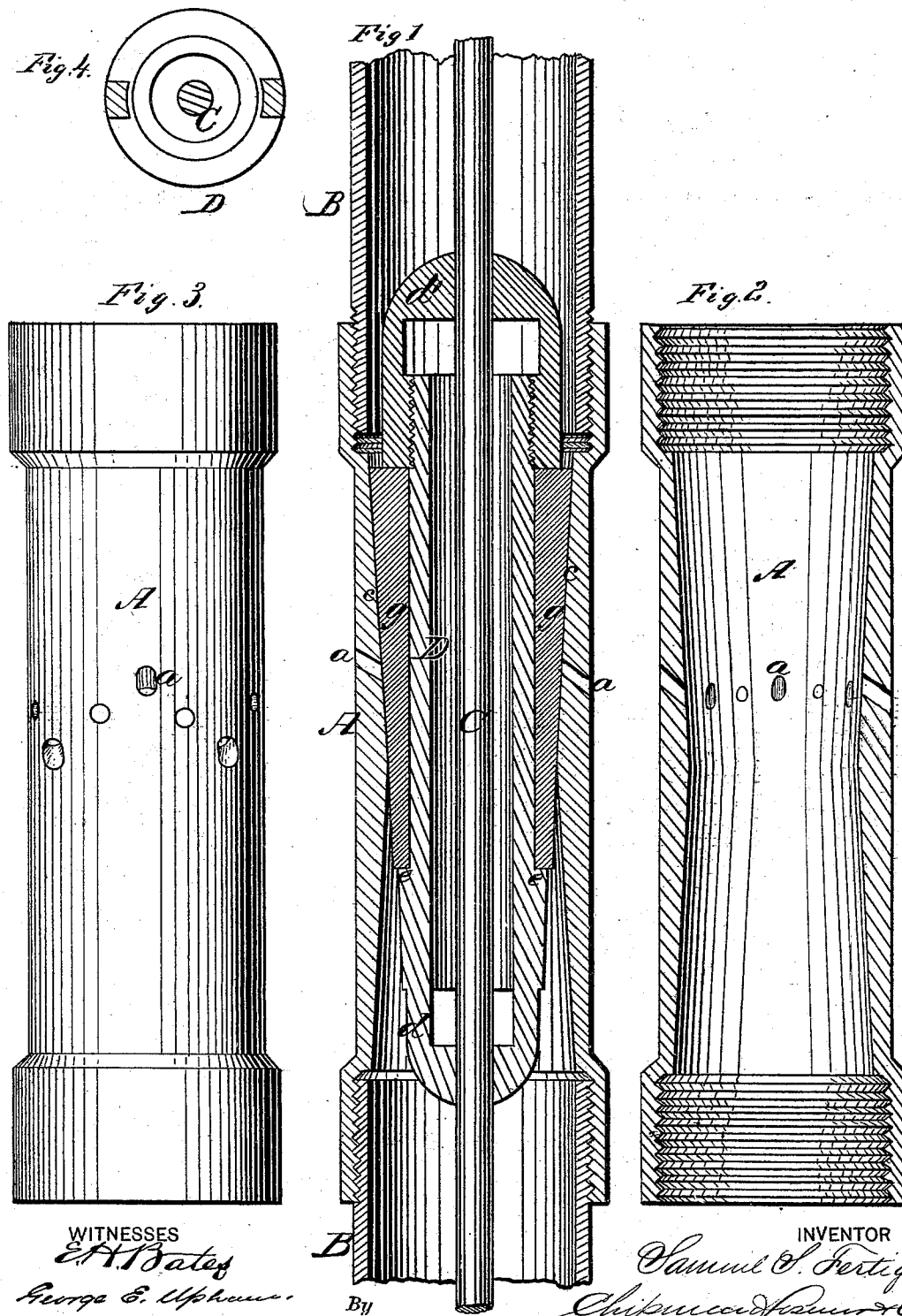


S. S. FERTIG.
Fluid-Injectors for Oil- Wells.

No. 147,922.

Patented Feb. 24, 1874.



WITNESSES
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SAMUEL S. FERTIG, OF TITUSVILLE, PENNSYLVANIA.

IMPROVEMENT IN FLUID-INJECTORS FOR OIL-WELLS.

Specification forming part of Letters Patent No. 147,922, dated February 24, 1874; application filed January 31, 1874.

To all whom it may concern:

Be it known that I, SAMUEL S. FERTIG, of Titusville, in the county of Crawford and State of Pennsylvania, have invented a new and valuable Improvement in Fluid-Injector Trip-Valves; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a sectional view of my device. Fig. 2 is a sectional detail of the same. Fig. 3 is an outside, and Fig. 4 a transverse sectional, view of my device.

This invention has relation to fluid-injectors which are intended for oil-wells and other purposes; and it consists in a perforated tubular section, applied to the well-tube above the working-barrel therein, and provided interiorly with an upwardly-movable trip-valve, which will close the perforations through said section while pumping the well, but which can be readily lifted from its seat by a shoulder on the pump-rod, as and for the purposes hereinafter explained.

The following is a description of my invention:

In the annexed drawings, A represents a section of pipe of any suitable length, which has perforations *a* made through it, some of which are inclined and some horizontal, for ejecting a fluid into the well in different directions. B B represent the sections of well-tubing, which are screwed into the ends of the perforated section A. This perforated section A has a tapered bore or valve-seat, *c*, on which a valve, D, is applied, which valve

closes the holes *a*, and can be lifted from its seat by means of a shoulder, (not shown in the drawings,) which is on the working-rod C. Valve D is constructed with open head and foot pieces *d d'*, and with a packing, *g*, of leather or other suitable material. The bore through valve D should be larger than the rod C, so that fluid can readily pass up through this valve. While pumping the well, the valve will remain in its seat and keep the holes *a* closed.

The objects of my invention above described are, to be able to let the fluid out of the tubing into the well at any desired depth; also, to inject benzine, hot oil, or steam into the well and its crevices, for the purpose of increasing the production thereof; also, for allowing the fluid in the tubing to escape while drawing the same out of the well.

The proper position of the tubular section and its valve is above the working barrel and valves, and directly opposite the best producing rock, so that when the trip-valve is lifted from its seat the fluid will freely escape through the holes *a*, and thoroughly wash the crevices and walls of the well.

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

In a fluid-injector for wells, the perforated tubular section A, in combination with the trip-valve D, substantially in the manner described.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

SAMUEL S. FERTIG.

Witnesses:

W. W. DAVIS,
J. J. HOLDEN.