G. E. Mills,

Ejecting Pump,

No. 47,444. Patented Apr. 25, 1865.

Fig. 1

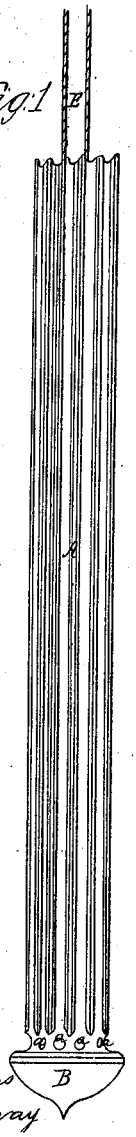

Fig. 2

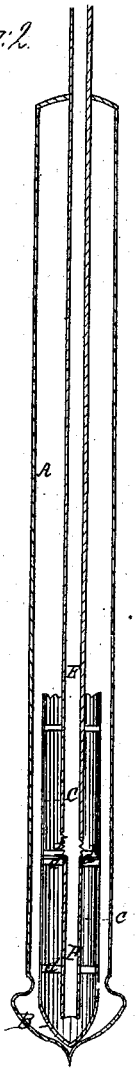

Fig. 3

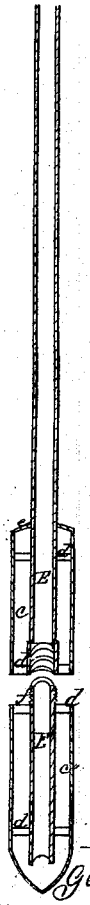

Fig. 4

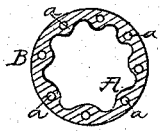

Fig. 5

Fig. 6

Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE E. MILLS, OF NEW YORK, N. Y.

IMPROVEMENT IN OIL-EJECTORS.

Specification forming part of Letters Patent No. **47,444**, dated April 25, 1865.

To all whom it may concern:

Be it known that I, GEORGE E. MILLS, of the city, county, and State of New York, have invented certain new and useful Improvements in Air-Injectors for Oil-Wells and for other Purposes, and the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents the air-injector in a corrugated discharge-pipe. Fig. 2 shows a vertical section through the cone-pointed base discharge-pipe, the air-pipe apparatus. Fig. 3 is the air-injector with the bottom joint unscrewed or detached. Fig. 4 is an end view of the corrugated discharge-pipe and perforated point. Fig. 5 shows an end view of a corrugated injector apparatus and air-tube. Fig. 6 shows an end view of a plain injector apparatus.

My invention consists in attaching a perforated cone-pointed base to a light corrugated metal tube for discharging oil from wells by an air-injector apparatus, which is constructed and inserted into the discharge-pipe, to be operated in the manner as hereinafter described.

To enable others skilled in the art to make and use my air-injector apparatus, I will describe it more fully, referring to the drawings, and to the letters of reference marked thereon.

For the purpose of obtaining a flow of oil in the most economical manner from wells, I use a very light corrugated metal tube, A, which has as much stiffness and strength as three times its weight when made plain, and to insure its central position in the bottom of the shaft of the well I attach a cone-pointed bulb, B, the diameter of which is larger than the corrugated discharge-pipe A, the upper portion having a series of holes, *a a a a*, to admit the oil into the discharge pipe or tube A, after other extraneous substances have been cut off from the oil-veins by seed-bags. The well being thus properly tubed, I then insert my improved air-injector C, which consists of short pieces of very thin plain or corrugated tubes *c c'*. The lower or bottom piece, *c'*, is closed at the bottom, so as to be pointed or cone-shaped, and will find its center and support in the bulb B, the base of the discharge-pipe A. The tubes *c c'* have bars *d d*, which hold the air-pipe E centrally in them. The air-pipes E E' are fitted with screws *f* and sockets, so that any number of joints that may be required may be screwed and coupled together to bring the cup end *e* to the desired height in the discharge-pipe A, where the injected air comes in contact with the oil or fluid to act most efficiently on it, and force it up, so that it will flow out of the discharge-pipe A.

In many wells oil may be obtained by my improved apparatus, as above described, for less than one-third of the usual outlay attendant on pumping, and the wear of the machinery for injecting air into oil-wells, when properly tubed, bears no comparison with the pumping process.

I do not claim steam or compressed air to be used in oil-wells; but

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

1. The use of corrugated metal for tubing oil-wells, the same being supported on a perforated bulb and cone-pointed base, substantially as herein described.

2. The tubes *c c'*, put together in sections and secured by screws in sockets on the air-pipe E, so that the point where the air comes in contact with the fluid may be adjusted in height, as and for the purposes set forth.

GEORGE E. MILLS.

Witnesses:
N. WILLIAM BUSTEED,
WILLIAM W. FRENCH.