WILLIAM FORKER.

Improvement in Crevice-Searchers and Cleaners for Oil Wells.

No. 115,047. Patented May 23, 1871.

Fig. 1

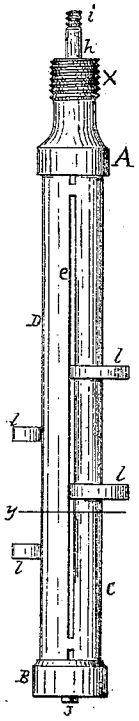

Fig. 2

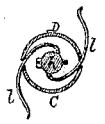

Fig. 3

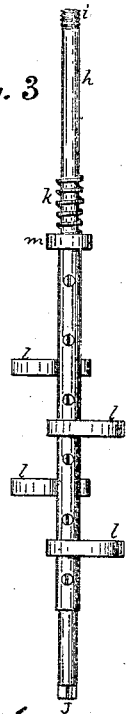

Fig. 4

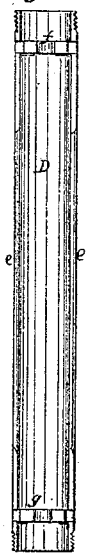

Fig. 5

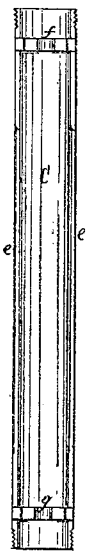

Fig. 6

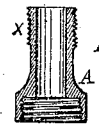

Fig. 7

Witnesses.
Geo. H. Thomas
E. C. Thomas

Inventor.
William Forker
By L. C. Johnston his attorney

UNITED STATES PATENT OFFICE.

WILLIAM FORKER, OF ROCKLAND, PENNSYLVANIA.

IMPROVEMENT IN CREVICE-SEARCHERS AND CLEANERS FOR OIL-WELLS.

Specification forming part of Letters Patent No. 115,047, dated May 23, 1871.

To all whom it may concern:

Be it known that I, WILLIAM FORKER, of Rockland, in the county of Venango and State of Pennsylvania, have invented a new and useful Improvement in Crevice-Searcher and Cleaner for Oil-Wells; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in the combination and arrangement of the several parts hereinafter described, for the purpose of forming a "crevice-searcher and cleaner" for oil-wells.

To enable others skilled in the arts to make and use my invention, I will proceed to describe more fully its construction and operation.

In the accompanying drawing, which forms part of my specification, Figure 1 is a side elevation of my improvement in crevice-searcher and cleaner for oil-wells. Fig. 2 is a transverse section of the same at line *y* of Fig. 1. Fig. 3 is a side elevation of the shaft to which the searchers or cleaners are attached. Figs. 4 and 5 represent the interior of the casing or sheath for the searchers or cleaners. Fig. 6 is a vertical section of the cap-piece for the upper end of the casing or sheath. Fig. 7 is a vertical section of the bottom piece for the lower end of the casing or sheath.

In the accompanying drawing, A represents the cap-piece for the casing, which consists of the two parts C and D, provided with bearings *f* and *g* for the shaft *h*. The ends of the parts C and D are provided with screw-threads, which are fitted to screw-threads in the cap A and bottom piece B. The cap A is provided with screw-threads X for the purpose of attaching it to the tubing of the well, and the bottom piece B is provided with a square opening, X′, which in size and form corresponds to the size and form of the square J on the lower end of the shaft *h*. The shaft *h* is provided with screw-threads *i*, which are used for connecting the shaft *h* to the pump-rod of the wells, and is also provided with a flange or collar, *m*, on which rests the lower end of a spiral spring, *k*, which is placed around the shaft immediately above the flange or collar *m*. To the shaft *h* is attached a number of flexible searchers or cleaners, *l*, which should be constructed of strips of spring-steel.

In placing the several parts in juxtaposition the shaft *h* is placed in the part C or D of the casing, with the crevice-searchers or cleaners *l* placed in the recess *e*, and the upper end of the spring *k* resting against the under side of the bearing *f*. The other part of the casing is then placed over the shaft, and the cap A and bottom piece B are screwed on the casing. The shaft *h* is then drawn up so that the square part J of the shaft is drawn out of the opening X′ of the bottom piece B. The shaft is then rotated until the crevice-searchers or cleaners are drawn into the casing or sheath. At this point the draft on the shaft is released and the spring *k* will force the shaft down; the square portion J will enter the opening X′ in the bottom piece B, thereby holding the shaft so that it will retain the crevice-searchers or cleaners *l* within the casing or sheath. The apparatus is then ready to be used for the purpose of searching and cleaning out the crevices in the well at the point or depth desired.

The apparatus hereinbefore described is used in the following manner: The tubing is removed from the well, and to the lower end of it is attached the cap A, through the medium of the screw X, and screw-threads on the inside and at the lower end of the tubing. After securing the apparatus to the tubing it is lowered into the well; the pumping-rod is then lowered in the tubing, and, by rotating it, is attached to the shaft *h* through the medium of the screw-threads *i* and screw-threads in the end of the pump-rod. After the pump-rod is properly attached to the shaft *h* it is drawn up so that the part J shall be drawn out of the opening X′ of the bottom piece B. The pump-rod is again rotated so as to force out the searchers *l;* the pump-rod is then released from the upward draft on it, which will allow the spring *k* to force it and the shaft *h* down, so that the square part J will enter the opening X′ of the bottom piece B, and thereby hold the shaft *h* in a fixed position. The tubing in the well is then rotated, which will rotate the apparatus attached to it, and the rotating of the apparatus will cause the flexible searcher to scrape off the paraffine from the sides of the well and clean out the

crevices through which the oil flows into the well.

After rotating the tubing and the apparatus attached to it until the operator thinks the paraffine and other obstructing matter are cleaned off from the sides of the well and out of the crevices, the searchers *l* are then wound into their casing or sheath, as hereinbefore described, and the tubing and apparatus withdrawn from the well, and the paraffine and other matter which have been scraped off from the sides and out of the crevices are removed from the well by the use of the ordinary sand-pump, the use and operation of which are well understood by operators of oil-wells.

Having thus described the nature, construction, and operation of my improvement, what I claim as of my invention is—

The shaft *h* provided with flexible searchers *l*, spring *k*, collar *m* combined with the casing or sheath, consisting of the parts C D, cap A, and bottom piece B, all constructed, arranged, combined, and operating substantially as hereinbefore described, and for the purpose set forth.

WILLIAM FORKER.

Witnesses:
JAMES J. JOHNSTON,
GEORGE H. THOMAS.