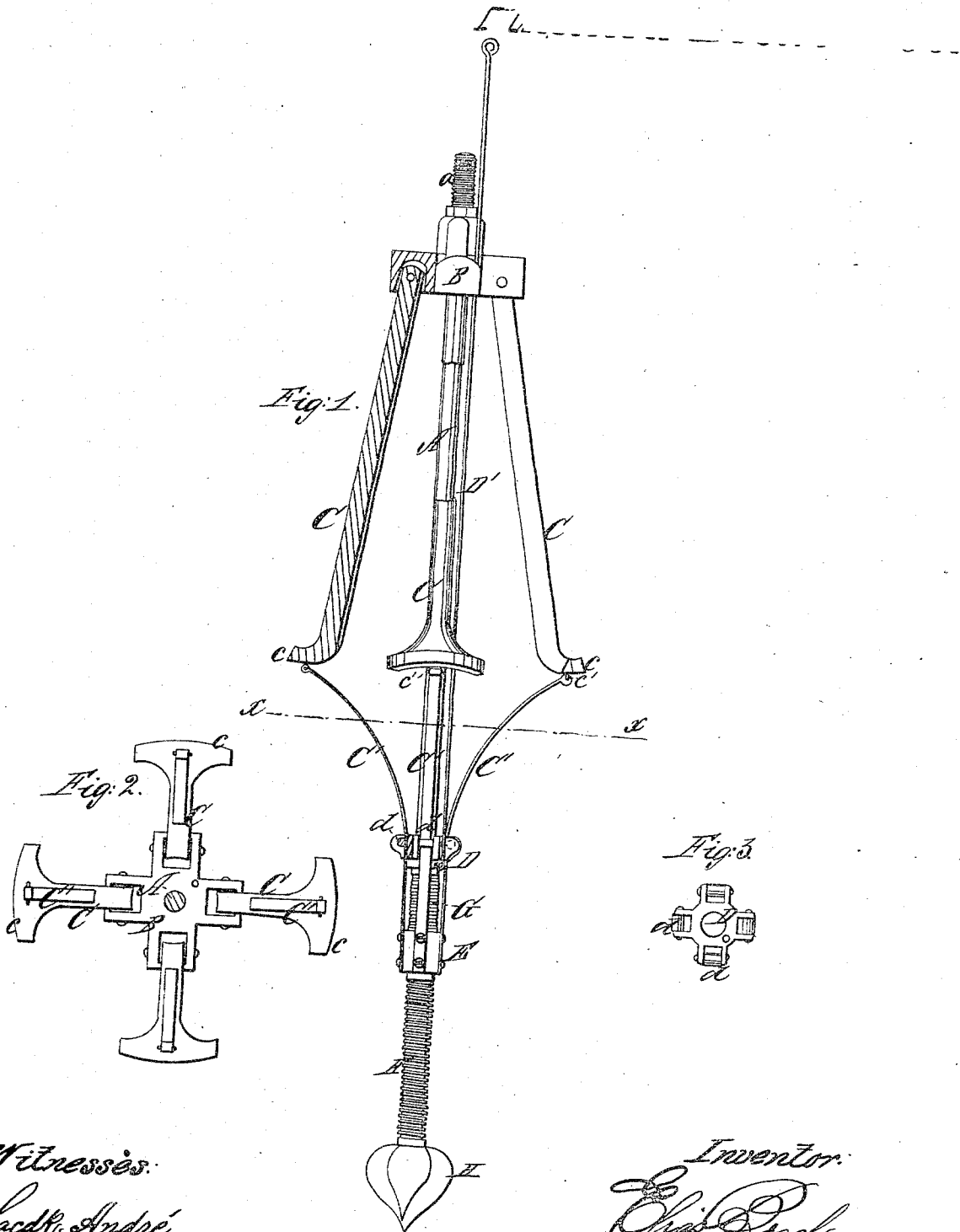


No. 84,852.

PATENTED DEC. 15, 1868.

E. BEACH.
SIDE SCRAPER FOR WELLS.



Witnesses:

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ELIAS BEACH, OF TITUSVILLE, PENNSYLVANIA.

Letters Patent No. 84,852, dated December 15, 1863.

IMPROVEMENT IN SIDE-SCRAPERS FOR WELLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ELIAS BEACH, of Titusville, in the county of Crawford, and State of Pennsylvania, have invented certain new and useful Improvements in Scrapers and Searchers for Oil or Artesian Wells, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a view, partly in elevation and partly in section, of my improved well-scraper and searcher;

Figure 2, a transverse section of the same, at the line $z z$ of fig. 1; and

Figure 3, a plan or top view of the carriage detached.

The object of my invention is to provide a simple and efficient device for scraping the walls of oil or artesian wells, and freeing them from paraffine or other foreign matters, as well as detecting the presence and position of flaws, crevices, or obstructions in the wells; to which ends,

My improvements consist in four or more metallic scrapers, pivoted, at their upper ends, to a socket, secured upon a central rod, which is connected to the sucker-rod of the well, the feet of the scrapers being united, by bent springs, to a collar, sliding upon the central rod, which collar is pressed upwards, by a spiral spring, in such manner as to force the feet of the scrapers outwards, and keep them pressed against the walls of the well, with a tendency to enter any crevice therein.

The bent springs, which unite the scrapers and collar, pass under friction-rollers, mounted in bearings upon a carriage, which slides upon the central rod, above the collar, and is connected therewith by a spiral spring, the said carriage being drawn up, when desired, by a rod, in such manner as to press the bent springs in towards the central rod, and thereby withdraw the feet of the scrapers from the crevice or obstacle which they may have encountered, the carriage and bent springs being returned to their former position, when the lifting-rod is released, by the spiral spring which connects the carriage and collar.

In the accompanying drawings, which show a convenient arrangement of parts for carrying out the objects of my invention—

A represents a stout metallic rod, which is secured to the sucker-rod of the well by means of a screw, a , cut upon its upper end, or in other suitable manner.

A metallic socket or bearing-piece, B, is secured upon the rod A, near its upper end, having four or more metallic scrapers, C, pivoted to it at their upper ends, in such manner as to be capable of oscillating radially from the central rod, A.

The scrapers C, which are bars of square or rectangular cross-section, are widened and curved outwards at their bottoms, so as to form feet or scraping-faces, c , which are curved, in a corresponding manner, to the

walls of the well, so as to fit against and scrape the same when pressed out by the springs.

Staples, d , are secured upon the bottoms of the feet c , to which are hooked the upper ends of plate-springs O , which curve inwards towards the central rod, A, and have their lower ends fastened, by screws or otherwise, to a collar, E, which slides upon it.

The springs O pass under friction-rollers d , mounted in bearings on a carriage, D, which slides upon the central rod, A, above the collar E, and is connected with it by a spiral spring, G.

By this means, when the carriage D is raised, which can be done, when necessary, by means of a rod, D', connected to it, and extending upwards to the outside of the well, or having a cord attached to it, which extends thereto; the upper ends of the springs O , and, consequently, the feet c , of the scrapers, are drawn in towards the central rod.

A weight or bob, H, is secured upon the bottom of the rod A, on top of which rests a spiral spring, F, which encircles the rod, and presses against the bottom of the collar E, the effect of which, in connection with the springs O , is to keep the feet of the scrapers pressed out against the walls of the well, with a tendency to move still further outwards.

The apparatus being secured to the sucker-rod, and lowered into the well, the springs F and O maintain the feet of the scrapers pressed against its walls, thereby removing, in its descent, the paraffine or other foreign matters therefrom.

When the feet of the scrapers arrive at a flaw or crevice in the well, the pressure of the springs aforesaid forces them therein, indicating the presence and position of the crevice or flaw by stopping the apparatus.

The carriage D is then raised by means of the rod D' pressing the springs O in towards the central rod, A, and thereby withdrawing the feet of the scrapers from the crevice.

When the rod D' is released, the spiral spring G, which connects the carriage D and collar E, draws down the former to its original position, allowing the feet of the scrapers to resume their contact with the walls of the well.

When the feet of the scrapers strike against obstructions, they are drawn in, to pass them, by elevating the carriage D, as stated, and allowed to expand after the obstruction is passed, as before.

My improvement affords a desirable means of detecting crevices or obstructions in oil or artesian wells, and of scraping and cleaning the walls of the same, and has been found by me, in practice, to work in a reliable and satisfactory manner.

I do not broadly claim the use of bent springs pressing directly against the walls of a well; neither do I claim the lifting-rod D'; but

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

1. The pivoted scrapers C and plate-springs C', in combination with the collar E and spiral spring F, arranged and operating substantially as described.

2. The sliding carriage D and friction-rollers d, in combination with the springs C' and scrapers C, as set forth.

3. The sliding carriage D and lifting-rod D', in com-

bination with the spiral spring G and collar E, arranged and operating as and for the purposes set forth. 3

ELIAS BEACH.

Witnesses:

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