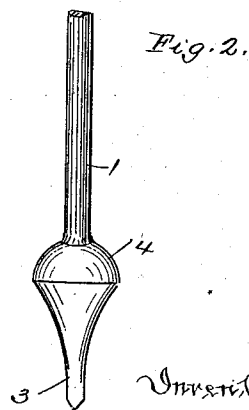
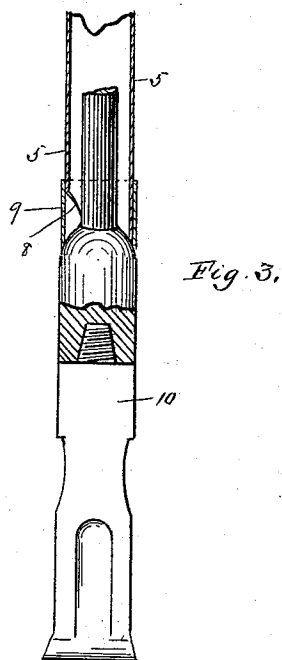
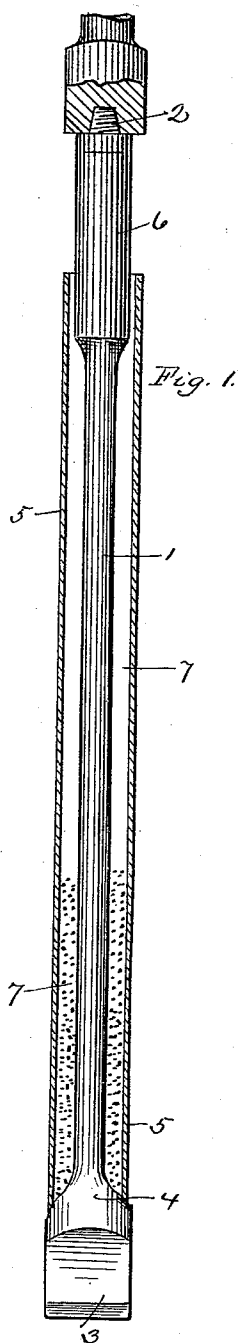


(No Model.)

L. N. IRELAND.
COMBINED DRILLING TOOL AND SAND BAILER.

No. 478,605.

Patented July 12, 1892.



Witness:
M. E. Harrison.
J. A. Heron.

Rev.

Inventor.
Lewis N. Ireland
O. D. Lewis.
Attest.

UNITED STATES PATENT OFFICE.

LEWIS N. IRELAND, OF PITTSBURG, PENNSYLVANIA.

COMBINED DRILLING-TOOL AND SAND-BAILER.

SPECIFICATION forming part of Letters Patent No. 478,605, dated July 12, 1892.

Application filed September 28, 1891. Serial No. 407,059. (No model.)

To all whom it may concern:

Be it known that I, LEWIS N. IRELAND, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Drilling-Tool and Sand-Bailer; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved combined drilling-bit and sand-bailer; and it consists in certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a sectional side elevation of my improved drilling-bit and bailer, which is constructed in accordance with my invention. Fig. 2 is an edge elevation of the bit, showing the semi-spherical portion which forms a valve-seat for the bailer. Fig. 3 is a side sectional elevation of my improved apparatus, in which a removable bit is shown, together with a sliding sleeve for discharging the contents of the bailer.

To put my invention into practice, I provide a bar 1 of a suitable length and form on the upper end a means 2 for connecting the same to the jars of drilling-tools such as are now in common use. This bar or "stem" 1 is enlarged at the lower end to form a bit 3 and a semi-spherical portion 4, formed above the same, which serves as a seat for the lower periphery of a tube 5, which incloses or surrounds the stem 1. This tube 5, which extends from a short distance above the bit to a point near the top of the stem and held centrally about the said stem by an enlargement

6, formed at the base of the tube 5, is an opening 8, covered with a sleeve 9, capable of being elevated to uncover the said opening 8 to discharge the contents of the bailer. A removable bit 10—such as shown at Fig. 3—may be used, if desired.

In operation the downward vertical movement given to the tools lifts the tube 5 and works the sand into the intervening space 7 between the stem 1 and the tube 5, and at the upward movement of the tool the tube closes on its seat and retains the sand within the same. After the drilling operation has been continued for some time the apparatus is drawn from the well and the sand removed from the same by elevating the tube from its seat, or the sleeve 9, covering the opening 8 in the base of the tube 5, may be used to remove the contents of the bailer.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The herein-described combined drilling-tool and sand-bailer, comprising the rod or stem 1, having near its top the enlargement 6 and at its bottom a drilling-bit, said drilling-bit having an enlarged head, a tube 5, encircling said rod or stem and movable automatically, as described, said tube being of less diameter than said bit-head and adapted to seat itself thereon when the same is raised, guided by said enlargement 6 and formed near its bottom with an opening 8, and means for closing said opening.

In testimony that I claim the foregoing I hereunto affix my signature this 30th day of July, A. D. 1891.

LEWIS N. IRELAND. [L. s.]

In presence of—
JAS. J. MCAFEE,
M. E. HARRISON.