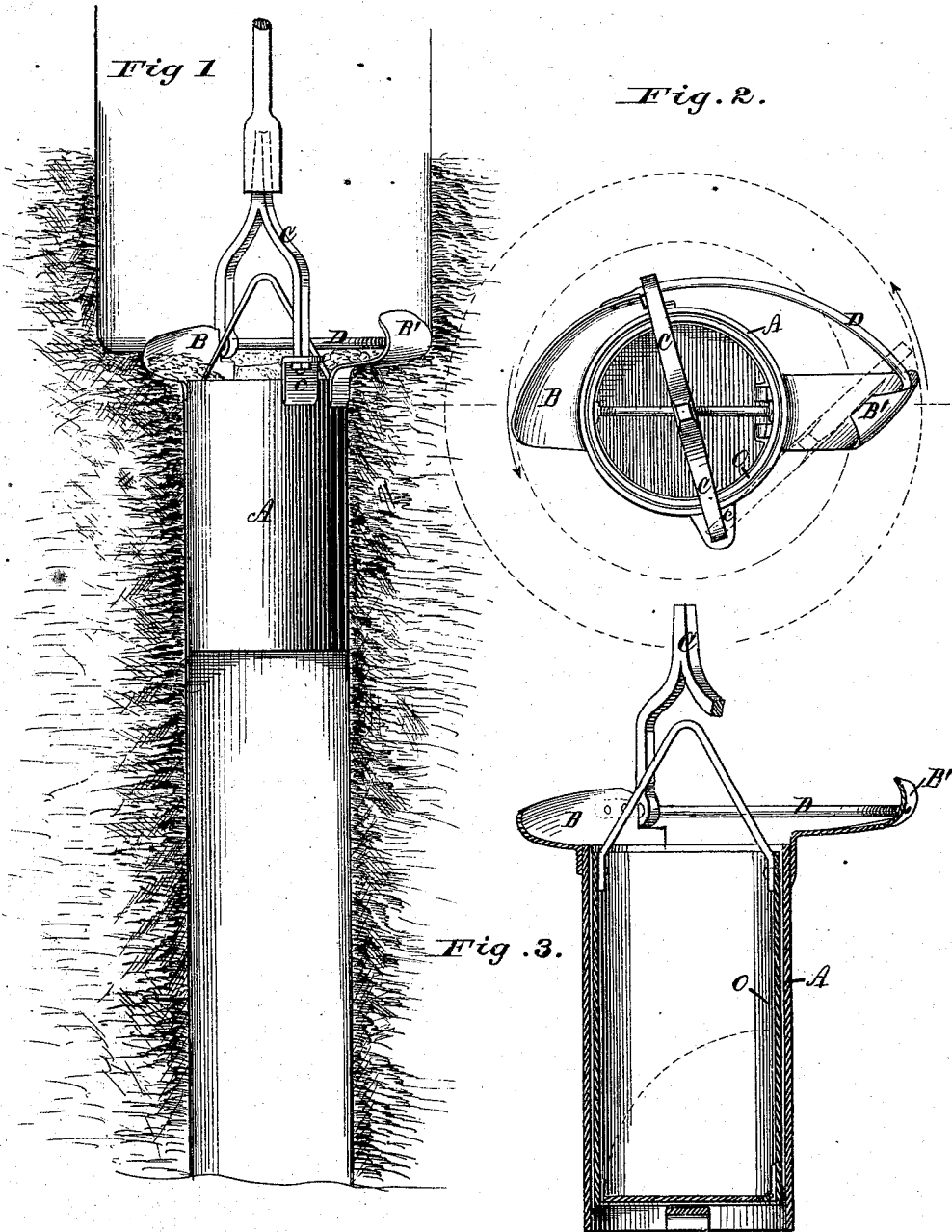


W. YOUNG.
Well-Reamers.

No. 161,190.

Patented March 23, 1875.



Attest:
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UNITED STATES PATENT OFFICE.

WILLIAM YOUNG, OF TROY, IOWA.

IMPROVEMENT IN WELL-REAMERS.

Specification forming part of Letters Patent No. **161,190**, dated March 23, 1875; application filed November 6, 1874.

To all whom it may concern:

Be it known that I, WILLIAM YOUNG, of Troy, Davis county, and State of Iowa, have invented an Improvement in Well-REAMERS; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a section of a well with my invention in place; Fig. 2, a top view; and Fig. 3, a vertical section, showing the bucket.

My invention relates to that class of inventions used to ream out wells which have been already bored with earth or well augers, and are too small, or it is desirable to make them larger. It consists of a cylinder fitting the bore of the well, which cylinder has two or more flanges or cutters of unequal lengths, and operating in different planes. Also, an inner bucket for catching the dirt as it is cut from the sides of the well, and a swinging bail or handle, to allow the bucket to be hoisted.

In the drawings, A is an outer cylinder, which fits or nearly fits a well already bored. To the top of this cylinder on either side are firmly secured thereto cutters or lips B B', nearly resembling the mold-board of a plow. The forward or outer edges of these cutters are sharp, and as the cylinder A revolves cut the earth loose in the sides of the well and carry it inwardly. The cutter B extends out from the cylinder A only about one-half as far, or more or less than one-half as far as the cutter B', and the cutter B' is set so as to cut higher than the cutter B, so that in the revolution of the cylinder A the cutter B will make the first cut, cutting its length from the cylinder A, and the cutter B' will make the second cut from where cutter B left off to its extent from the cylinder A. The power is applied to the cylinder A by means of a bail, C, pivoted at one end to an ear, *c*, upon the side of the cylinder A, and at the other end sliding, by means of an eye in its end, upon a rod,

D, secured to the rear end of the cutter B, and the forward end of the cutter B', and made concentric with the pivot in the ear *c*. This bail is attached to any revolving shaft extending down the well, and revolves the cylinder with the cutting apparatus. Within the cylinder A, resting upon a cross-brace in the bottom, is a bucket, O, having a hinged bottom and a lifting bail. This bucket is just in position to receive the earth cut out by the cutters, and when full may be drawn up the well. To accomplish this the bail C is pivoted, as above described, and is swung out of the way, sliding upon the rod D, simply by reversing the motion of the shaft communicating the power. The bucket may then be hoisted by any hoisting apparatus, when the bucket is returned to its place in the cylinder A. The power is then applied in the forward direction, when the bail C is slid in its place, and the cylinder with its cutters set in motion to cut and again fill the bucket. This operation may be repeated as often as the bucket is filled.

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

1. A well-reamer consisting of the revolving cylinder A and cutters B B', substantially as described.

2. The cutters of a well-reamer, when constructed to cut at different distances from the center and in different planes, substantially as described.

3. The combination of the cylinder A, with a removable bail and the bucket O, substantially as described.

The above specification of my said invention signed and witnessed at Troy this 26th day of October, A. D. 1874.

WM. YOUNG.

Witnesses:

W. H. ROSSER,
J. R. EVANS.