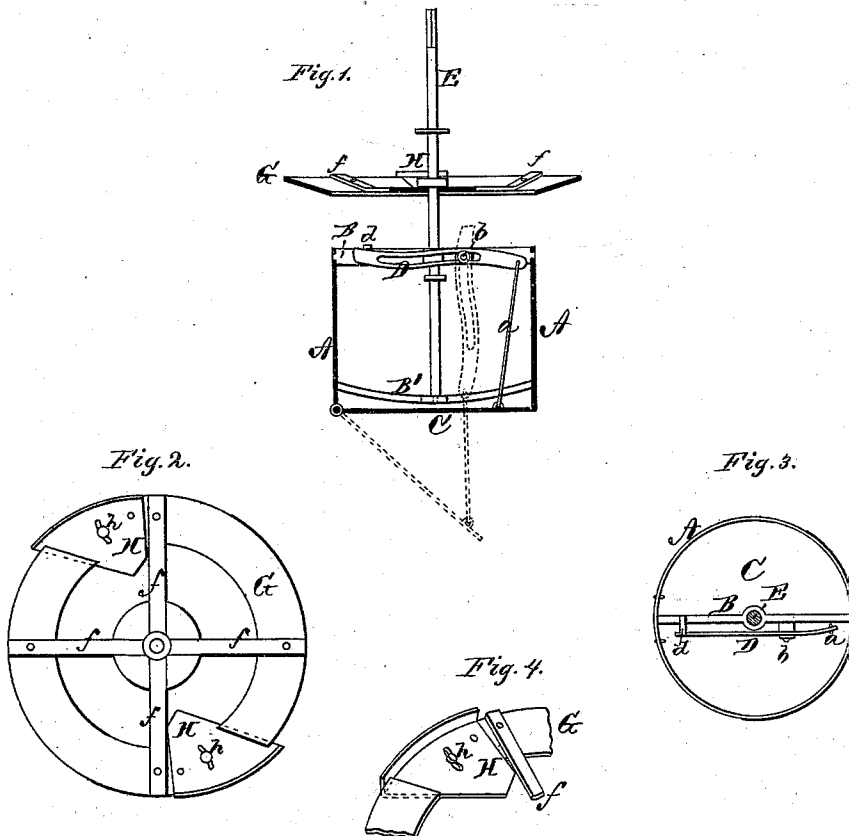


C. N. HANSON & W. H. BEACH.

Reamers for Wells.

No. 147,323.

Patented Feb. 10, 1874.



Witnesses.

Henry N. Miller
C. L. Custer

Inventor.
2nd Wm H. Beach.
1st Chauncy N. Hanson.
per Alexander Mason
Attorneys.

UNITED STATES PATENT OFFICE.

CHANCY N. HANSON AND WILLIAM H. BEACH, OF HAMBURG, IOWA.

IMPROVEMENT IN REAMERS FOR WELLS.

Specification forming part of Letters Patent No. 147,323, dated February 10, 1874; application filed April 11, 1873.

To all whom it may concern:

Be it known that we, CHANCY N. HANSON and WM. H. BEACH, of Hamburg, in the county of Fremont and in the State of Iowa, have invented certain new and useful Improvements in Reamers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

The nature of our invention consists in the construction and arrangement of a reamer for enlarging or increasing the diameter of a well already sunk, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a vertical section of the reamer and bucket. Fig. 2 is a plan view of the reamer. Fig. 3 is a plan view of the bucket, and Fig. 4 is a perspective view of a part of the reamer.

A represents a sheet-iron cylinder, of any suitable diameter, stayed by two bars, B and B', the former at the upper and the latter at the lower end of the cylinder. The cylinder A is further provided with a hinged bottom, C, which completes the bucket of the reamer. The side of the bottom C, opposite the point where it is hinged, is, by a rod, *a*, connected with a slotted lever, D, moving on a pin, *b*, projecting from the upper bar, B; and when said lever is drawn so as to close the bottom C, the lever is held under a projection, *d*, also

extending from said upper bar, B. A shaft, E, passes through and revolves in the two bars B B'; and upon said shaft, above the bucket A B C, are secured radial arms *f f*, which support a concave or inwardly-inclined rim, G. This rim is, on opposite sides, cut open, as shown in Figs. 2 and 4; and at each opening on the rim is pivoted a flanged cutter, H, which is adjustable out or in, so as to cut the well of any desired diameter, and the cutter is held in any position desired by a set-screw, *h*, passing through a curved slot in the cutter into the rim. This rim, with cutters, is revolved by any suitable means, cutting the sides of the well so as to enlarge the same, the bucket preceding the reamer down into the well, and the dirt falls into the bucket, which, when full, is raised and emptied in any desired manner.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The concave rim G, supported from a shaft, E, by radial arms *f f*, and provided with adjustable flanged cutters H H, substantially as and for the purposes herein set forth.

2. The combination, with the rim G and cutters H H, of the cylinder A, bars B B', bottom C, rod *a*, slotted lever D, and projections *b d*, all substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing, we have hereunto set our hands this 20th day of January, 1873.

C. N. HANSON.
W. H. BEACH.

Witnesses:

T. J. DRAIN,
SAM'L. HOLMES.