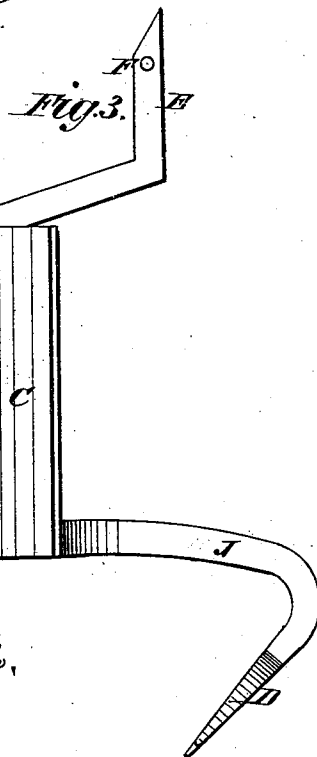
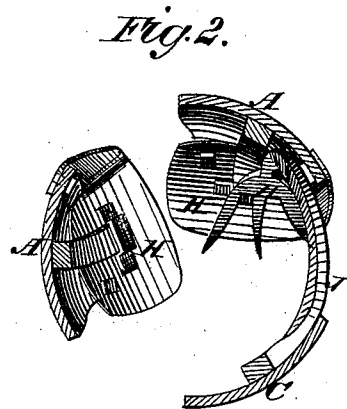
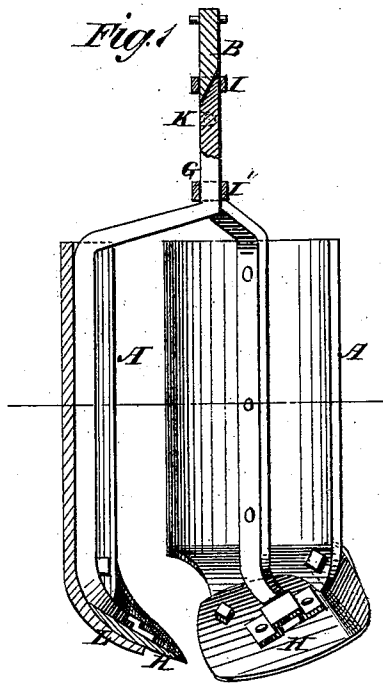


D. N. ROOT.
EARTH-AUGERS.

No. 178.675.

Patented June 13, 1876.



WITNESSES:

Francis Mc Ardle,
John Goethals

INVENTOR:

D. N. Root
BY *mm/l2*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

DATUS N. ROOT, OF PARKERSBURG, IOWA, ASSIGNOR TO CHANCY F. OWEN,
OF SAME PLACE.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **178,675**, dated June 13, 1876; application filed
February 28, 1876.

To all whom it may concern:

Be it known that I, DATUS NELSON ROOT, of Parkersburg, in the county of Butler and State of Iowa, have invented a new and Improved Well-Auger, of which the following is a specification:

My invention consists of a bucket and bits contrived in three equal sections, by which the auger works faster, and by taking out one of the boring-bits and bucket-sections and substituting a pronged bit of peculiar form, with a shorter bucket-section, bowlders of larger size may be taken out than can be with other augers.

Figure 1 is a sectional elevation of my improved well-auger. Fig. 2 is a horizontal section taken on line *xx* of Fig. 1, and Fig. 3 is an elevation of the pronged bit for taking out stones.

Similar letters of reference indicate corresponding parts.

A represents the three sections forming the auger-bucket, two of which are permanently connected to the auger-shaft B, while one is detachable for changing it for the section C, having the pronged bit D for taking out stones, the detachable section being attached by the beveled shank, having studs F fitting in the crotch G of the shaft, and being secured by the slides I I', and the crotch being notched at K, (dotted,) to receive the studs, to prevent the section from dropping out. The bucket-sections A are bent at the lower end, as shown

at L, and the bits H are lapped on and bolted thereto, so that the strength of both plates is utilized for driving the bit into the earth. The pronged bit D for taking out stones is attached to a shank, J, which bends around from the lower end of a short bucket-section, to which it is attached, so that it lays over the next bit H, and opens the space between the other bucket-section free for large stones to enter the bucket, whereby stones nearly as large as the bore may be taken into the bucket. The prong-bit is so shaped that the outer prong tends to work a large stone half bedded outside of the line of the bore into the bucket, thus enabling obstructions to be removed, which, with other augers, would cause the abandonment of the well.

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

1. The prong-bit D, attached, by a shank, J, to a short bucket-section, C, which shank is arranged to support the bit in relation to the bit surrounding it, as described.

2. The detachable bucket-section, connected to the shaft by the beveled shank E, having studs F fitted in the crotched shaft, having notches for the studs, and secured by the slides I I', substantially as specified.

DATUS NELSON ROOT.

Witnesses:

E. FITCH,

G. J. H. CORYELL.