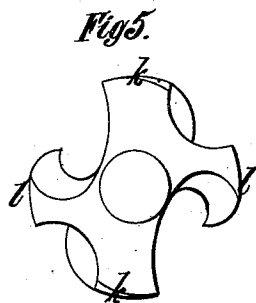
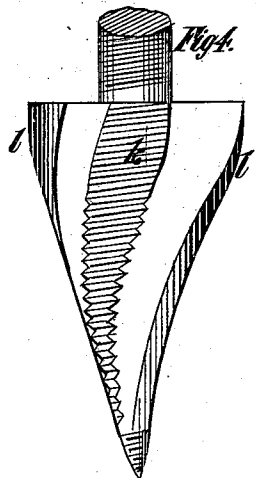
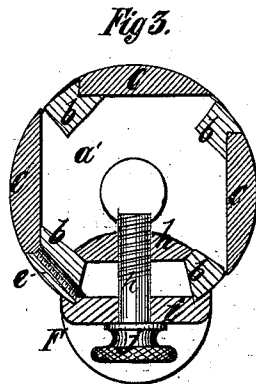
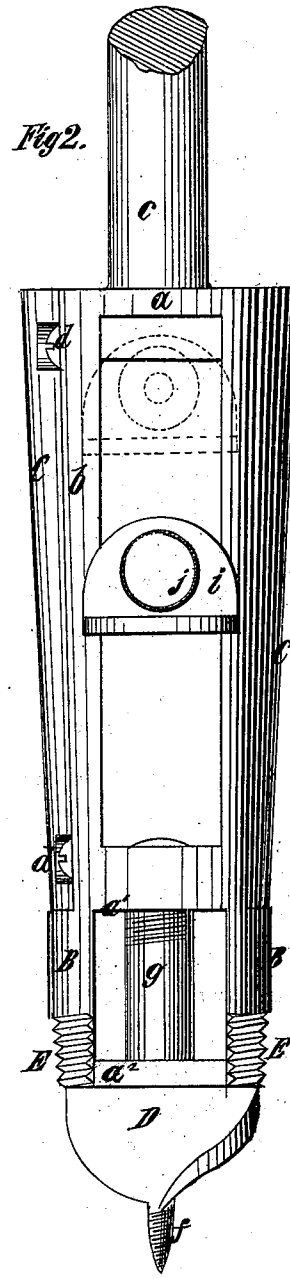
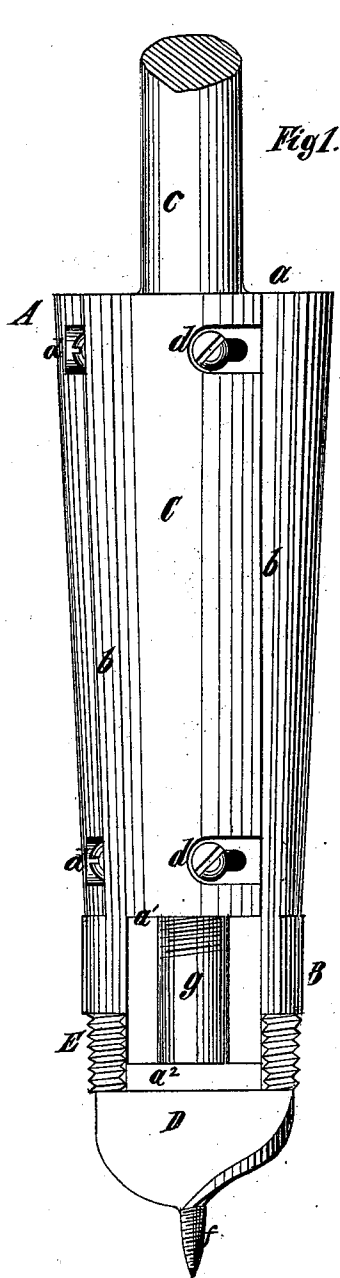


A. E. BROCKETT.
Combined Auger and Reamer.

No. 201,908.

Patented April 2, 1878.



Witnesses:
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Edwin H. Brown.

UNITED STATES PATENT OFFICE.

ATWATER E. BROCKETT, OF BRANFORD, ASSIGNOR TO H. LYNDE HARRISON,
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IMPROVEMENT IN COMBINED AUGER AND REAMER.

Specification forming part of Letters Patent No. **201,908**, dated April 2, 1878; application filed
February 20, 1878.

To all whom it may concern:

Be it known that I, ATWATER E. BROCKETT, of Branford, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Borers or Reamers, of which the following is a specification:

The object of my invention is to produce an improved borer or reamer adapted for use in cutting bung-holes.

My invention is comprised in a borer or reamer having a skeleton-frame provided with a leading-tool, for cutting in advance of the borer or reamer proper, having adjustable knives or cutters, having an auger, and having a gage, whereby the diameters of holes to be cut by the borer or reamer may be regulated.

In the accompanying drawings, Figure 1 is a side view of a borer or reamer embodying my invention. Fig. 2 is a similar view of another side or portion thereof. Fig. 3 is a transverse section thereof. Fig. 4 is a side view of a modified form of an auger and a leading-tool combined, and Fig. 5 is a top view thereof.

Similar letters of reference designate corresponding parts in all the figures.

A designates a frame, of skeleton form, comprising end pieces a a^1 a^2 and longitudinal ribs b , projecting toward one another from the upper to the lower end, and provided with a shank, c . B designates a leading-tool, consisting of knives, which may be cast in steel with the skeleton-frame A, are of segmental form, and preferably extend outside or beyond the circumference of the end pieces a^1 . The object of this leading-tool is to cut in advance of the borer or reamer proper, so as to produce a clean hole, free from rough projections which might be produced by an ordinary auger, in order to facilitate the action of the borer or reamer knives or cutters C. These knives are supported upon the skeleton-frame A, are shown as of segmental form, and as so arranged that their cutting-edges project into proximity with the ribs b , and the latter form guides for them.

These knives or cutters may advantageously be secured in place by screws d , passing through

slots in them, and entering the end pieces a a^1 ; and they may be adjusted transversely, so as to project more or less, by means of set-screws e , extending transversely through the ribs b , and impinging against the backs of the cutters.

D designates an auger, provided, preferably, with a screw-threaded auger or gimlet point, f , and provided with a shank, g , which may be secured to the borer or reamer by passing through the end piece a^2 of the frame A, and screwing into the end piece a^1 thereof. This auger is intended to cut the hole out roughly, after which the leading-tool B trims or cuts the hole out cleanly for the entrance of the knives or cutters C of the borer or reamer into the hole; wherefore the latter are relieved of much of the rough work of cutting the hole, and do not require sharpening frequently.

Preferably the leading-tool B, or the upper portion of the auger, is provided with screw-threads, or sections of screw-threads, such as I have shown at E, to preclude the auger from working too rapidly through the material in which the hole is to be cut, and to insure its cutting as clean a hole as possible without making it of great length.

F designates a gage, which is arranged between two of the ribs B of the frame A, so that it may be adjusted longitudinally to different places. It is represented as consisting of a stock-piece, h , adapted to bear against one of the sides of said ribs, and a screw, h' , which passes loosely through the gage-plate i , and screws into the stock-piece h . The screw h' is provided outside the gage-plate i with a head, j , which bears against the gage-plate, and clamps the whole tightly in any position. In order to adjust the gage, the screw is loosened or adjusted outwardly, whereupon the gage-plate may be adjusted longitudinally along the borer or reamer, and may be secured in any position by simply adjusting the screw in the reverse direction.

This gage enables holes of various diameters to be cut with the same borer or reamer, because when shifted toward the lower end thereof it precludes it from entering or passing through any material beyond a certain point,

and prevents a hole from being cut larger than the diameter of the borer or reamer at that point.

A scale may be arranged on one of the ribs *b*, to indicate the diameters of holes which may be cut by adjusting the gage to different points.

The tool or device shown in Figs. 4 and 5 forms a combined auger and leading-tool. It preferably has a screw-threaded or gimlet point, and comprises one or more spiral ribs, *k*, externally screw-threaded, and one or more intermediate spiral plates or knives, *l*, adapted for cutting.

This device may be employed instead of the auger and leading-tool previously described, as it will cut a clean hole, and will be precluded from passing through the material too quickly.

It will be seen that by my invention I produce a borer or reamer whereby holes of various diameters may be cut at pleasure, and with great facility, and without requiring the frequent sharpening of its knives.

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

1. The combination, in a borer or reamer, of a skeleton-frame, comprising end pieces and longitudinal ribs, and a knife or cutter secured to the end pieces by screws, or their equivalents, fitting in slots, and adjusted by means of set-screws impinging against the back, substantially as specified.

2. The combination, in a borer or reamer, of knives or cutters and a leading-tool, consisting of parallel segmental-shaped cutters, for trimming a hole preparatory to the entrance of said knives or cutters, substantially as specified.

3. The combination, in a borer or reamer, of knives or cutters, a leading-tool, consisting of parallel segmental-shaped cutters, for trimming holes preparatory to the entrance of the said knives or cutters, and a screw-threaded portion, substantially as and for the purpose specified.

4. The combination, in a borer or reamer, of knives or cutters, a leading-tool, consisting of parallel segmental-shaped cutters, for trimming holes preparatory to the entrance of the said knives or cutters, and an auger, substantially as and for the purpose specified.

5. The combination, with a borer or reamer having a skeleton-frame, of a gage, consisting of a stock-piece bearing against the inner sides of ribs, forming part of the skeleton-frame, a gage-plate, and a screw passing through said gage-plate and stock-piece, substantially as and for the purpose specified.

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Witnesses:

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