T. O. SELFRIDGE.

Wood-Boring Machine.

No. 202,477. Patented April 16, 1878.

Fig. 1.

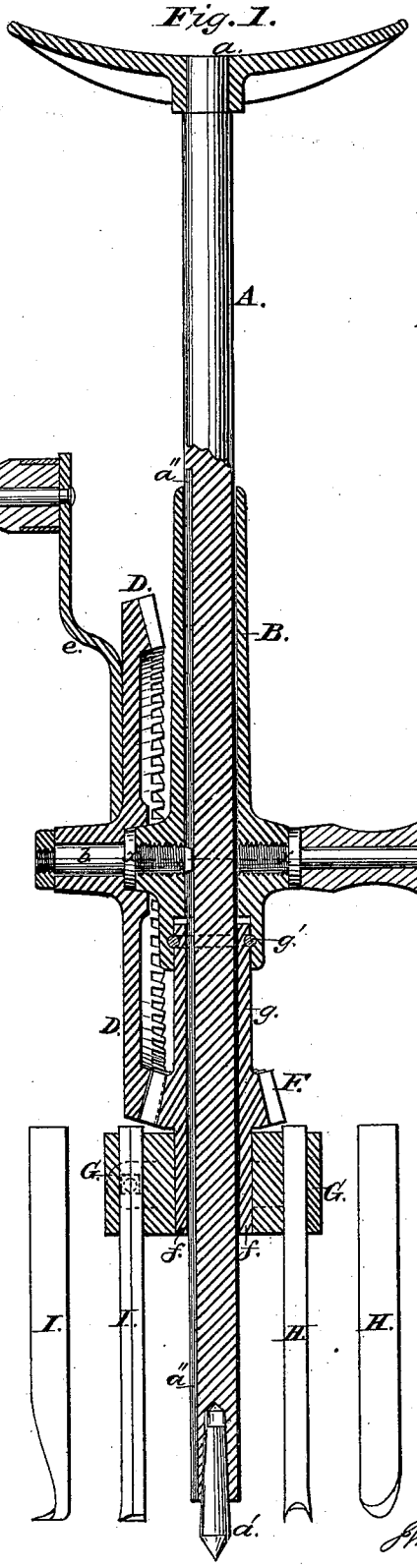


Fig. 5.

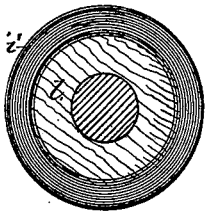


Fig. 2.

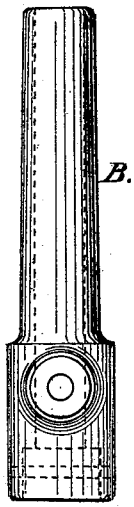


Fig. 3.

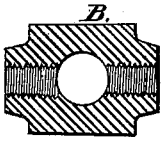
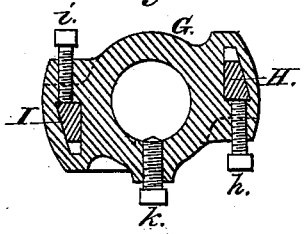


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS O. SELFRIDGE, OF UNITED STATES NAVY, WASHINGTON, D. C.

IMPROVEMENT IN WOOD-BORING MACHINES.

Specification forming part of Letters Patent No. **202,477**, dated April 16, 1878; application filed March 30, 1878.

To all whom it may concern:

Be it known that I, THOMAS O. SELFRIDGE, Rear-Admiral, United States Navy, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Augers or Borers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to produce an auger or borer for boring around the bolts securing the planks to the frame of a vessel or other place, which, by making cores of the bolts and adjoining wood, renders the removal of a plank, when repairs are required, a quick and an easy operation.

The auger or instrument consists of an iron stem or standard having one end provided with a point, which rests against the head of the bolt around which it is to bore. The other end is pressed against from the breast of the operator. On this stem is arranged a cylinder or tube, to which a bevel-wheel is attached, which meshes with a pinion at the lower end, cast upon a sleeve, fitting into the lower end of the cylinder, while to the lower part of the sleeve is secured a cutter-head, in which suitable cutters are secured. The bevel-wheel is operated by a handle secured thereto, while on the opposite side a thrust-handle is attached to the cylinder, to steady the device. A spline in the standard, into which the end of a stud or pin fits, prevents it from turning, all of which will be more fully described hereinafter, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical cross-section of the auger. Fig. 2 is a side elevation of the cylinder or tube. Fig. 3 is a cross-section. Fig. 4 is a horizontal section of the cutter-head. Fig. 5 is a plan, showing the bolt, core, and annular channel.

In the drawing, A is the stem or standard, provided at its upper end with a breast-plate, *a*, and at its lower end with a point, *a'*. In one side of the standard is cut a spline, *a''*. Upon the standard is arranged a cylinder or tube, B, into which a thrust-handle, C, is secured on one side, while on the opposite side is secured a stud, *b*, forming a journal for the bevel-wheel D at one end, while the other end enters the spline *a''*, and serves to prevent it from turning. To the wheel D is secured a curved arm, *e*, to the outer end of which is attached the handle E, by which motion is imparted to the cutters. The wheel D meshes into a pinion, F, having a hub or sleeve, *f*, below and *g* above it. The hub *g* fits into the lower end of the cylinder B, and is prevented from slipping out by a groove and pin, *g'*. To the lower hub *g* is secured the cutter-head G, in which the cutting-bit H is held by a set-screw, *h*, while the reaming or clearing bit I is held by a set-screw, *i*. The cutter-head G is secured in its position on the standard A by a set-screw, *k*.

The operation is as follows: The stem or standard A is placed against the head of the bolt, with its point *a'* and the breast-plate against the breast of the operator, while the handle C is taken in his hand. Motion is imparted to the cutters by turning the handle E, which turns the pinion F by the wheel D, and thus the cutters are revolved, the cutting-bit H forming a groove, as shown at *i* in Fig. 5, while the cutter I brings up the chips and clears the hole. A core, *l*, is thus left between the cutters, which can then be readily removed and the bolt taken out.

The advantages of my device are, that it is very simple in its construction; it is not liable to get out of order; it can be very easily repaired; it does its work in an economical and expeditious manner, and it can be made of any suitable material and size.

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

1. The auger herein described, consisting of a standard, A, sleeve B, bevel-wheel D, pinion F, and cutter-head G, provided with bits H I, constructed substantially as shown, and for the purpose specified.

2. An auger for boring around bolts securing the plank to the frame of a vessel, provided with a cutter-head, G, having cutting-bit H, a reaming-bit I, and a centering-point, *a'*, arranged as shown and described.

3. In an auger for boring around bolts, the combination of a standard, A, sleeve B, and handle C, with a bevel-wheel, D, handle E, pinion F, and cutter-head G, provided with cutters H and I, constructed substantially as and for the purpose specified.

4. The auger herein described, consisting of the standard A, having breast-plate *a* and point *a'*, the cylinder B, provided with handle C and stud *b*, bevel-wheel D, handle E, pinion F, cutter-head G, and cutters H I, all constructed and arranged as shown, and for the purpose described.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

THOS. O. SELFRIDGE.

Witnesses:

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H. A. GOLDSBOROUGH.