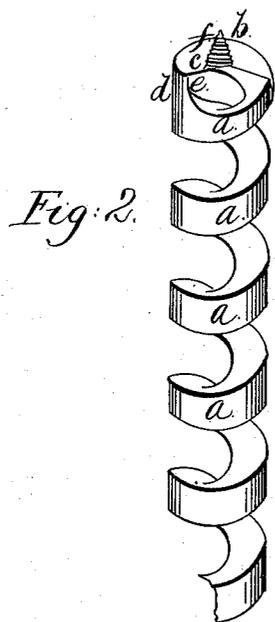


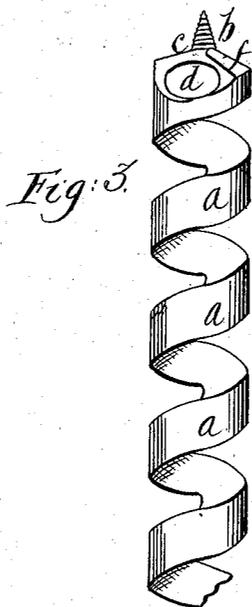
*N. B. Phelps,*  
*Wood Auger.*  
*N<sup>o</sup> 26,013. Patented Dec. 27, 1859.*



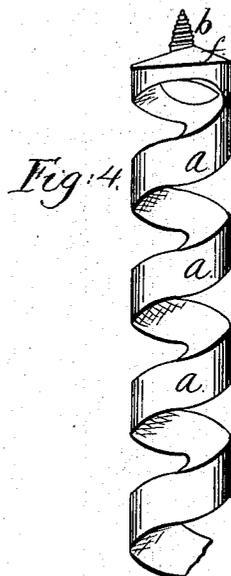
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

*Witnesses:*

*J. Fraser*  
*S. J. Allis.*

*Inventor:*

*N. B. Phelps*

# UNITED STATES PATENT OFFICE.

NAPOLEON B. PHELPS, OF ROCHESTER, NEW YORK.

## AUGER.

Specification of Letters Patent No. 26,613, dated December 27, 1859.

*To all whom it may concern:*

Be it known that I, NAPOLEON B. PHELPS, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Augers and Bits; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in  
10 which—

Figure 1, is an end view; Fig. 2, a perspective view of the cutting and clearing portion of the auger; Fig. 3, a side elevation, in a position in which the cutting edges are  
15 directed toward the observer; Fig. 4, is an elevation representing a position the reverse of that shown in Fig. 3.

Similar letters refer to corresponding parts in all of the figures.

20 My improvement is applicable to bits and augers of the kinds known as the "double and single twist," and consists, as applied to the latter, in uniting the end of the helical rod where it terminates in the cutting lip,  
25 with the preceding coil so as to constitute what I term the "supported cut," and form an arch over the cavity of the helix, for the support of the conical screw.

As represented in the drawings *a* is the rod  
30 which forms the twist of the auger, *b* is the conical screw, *c* the primary or transverse cutter continued from the thread of the screw *b* to the periphery; *d* is the extended  
35 portion which unites the last coils of the helix, and forms (its front edge being made sharp) the advance cutter *e*, while *f* is the solid portion, or head of the bit, and *g* the throat therein, through which the chips pass.

40 The uniting of the end of the rod with the preceding coil may be effected by welding the parts, or by leaving the metal designed to form the head of the auger solid, and drilling or punching the throat *g*; and

by various other methods that will accomplish the same result. Its object it will be  
45 readily perceived is the securing greater strength to the cutting lip, which, from the thinness necessary to the formation of a good cutting edge, is extremely liable to  
50 break; and also obviating the tendency of the tool to diverge from its course in boring. This it accomplishes effectually by the extent of solid surface which it presents to the  
55 wood, and by its inability to spring or vibrate while being worked. The screw *b*, being firmly supported in the center, derives its strength from the same principle of construction which confers durability and firmness to the cutting edge, as embodied in the  
60 supporting and uniting wall *d*.

This construction readily admits of the cutters being finished with the required care, and afterward kept sharp, by the facility  
65 with which a file may be passed through the throat *g*; while it completely overcomes the liability of the single screw auger to untwist at the point when operated in hard material.

This change in the construction of augers and bits constitutes an important improvement, inasmuch as it makes the tool stronger  
70 and more durable, as well as capable of boring more accurately for long distances, as is required in ship carpentry, and many other branches of industry.

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

Uniting and combining the terminating coil with the preceding one by means of the thin supporting wall *d*, acting as a brace to  
80 sustain and strengthen the cutting portion of the bit or auger, substantially in the manner and for the purpose shown and described.

N. B. PHELPS.

Witnesses:

J. FRASER,  
S. J. ALLIS.