Ira T. Payne's improvement in Double Twist Augers.

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Fig. 1.

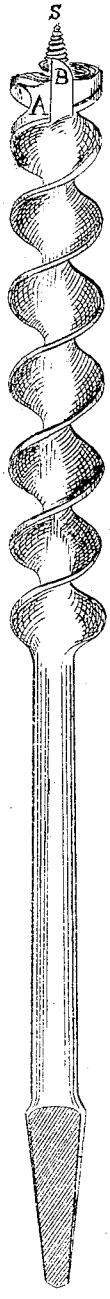


Fig. 2

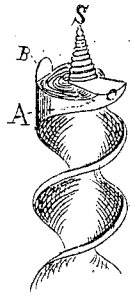
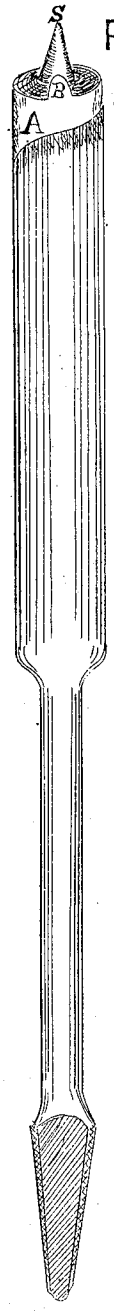


Fig 3



Witnesses
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IRA T. PAYNE, OF CHESTER, CONNECTICUT.

Letters Patent No. 75,454, *dated March* 10, 1868; *antedated February* 28, 1868.

IMPROVEMENT IN AUGERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, IRA T. PAYNE, of Chester, in the county of Middlesex, in the State of Connecticut, have invented an Improvement in Double-Twist 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, and to the letters of reference marked thereon.

The nature of my invention consists in providing double-twist augers and bits with a head of increased strength, and the means of securely holding a spur, which may be replaced by filling up one of the channels of the twist at the head of the tool, or by so forging the head of the plate as to secure an equivalent when the plate is twisted; and also in forming upon the floor-lip a seat or projection on the side towards the screw, which shall facilitate the filing of the floor-lip on that side.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct the twist of my double-twist boring-implements from any of the known forms of double-twist plates, and by any of the known methods, and form upon the head a single cutting floor-lip, and a screw the same as is now commonly used; but, in order to give greater strength to the head of the tool, which is the most liable to get broken, and also to provide the means for replacing the spur when broken, I make the part of the head which does not receive the chips from the floor-lip solid, by brazing in a piece, or by forging.

Figure 1 of the accompanying drawings is the representation of a bit constructed according to my invention. One of the channels of the twist is filled up at the head by brazing in a piece, as represented at A. This piece not only strengthens the head of the bit, but it constitutes the means by which a spur may be held when dove-tailed into the bit, as represented at B.

Figure 2 is an opposite view of the head of the bit, showing on the floor-lip, at C, a seat or projection on the side towards the screw S, which projection, as is evident, will greatly facilitate the filing of the floor-lip on that side, and tend to prevent the chips from clogging under the floor-lip.

All the chips are drawn by one of the channels of the twist, and therefore the throat is filed out on one side only, which leaves the screw very strong at the base.

It is not necessary, in constructing boring-implements according to my invention, to first twist the plate, and then insert or braze in a piece, as before represented, for the advantages resulting therefrom may be equally as well attained by forging the plate round and solid at the head, as represented by Figure 3, and then cutting out or completing the channel of the twist, which draws the chips with a friction buzz after the plate is twisted; and the object in either case only being to increase the strength of the head of the tool, to provide the means for replacing or holding the spur, and to furnish the material for supporting the projecting terminus of the floor-lip, it is not essential whether the spur be originally forged solid with the head of the tool, as represented in fig. 3, or inserted, as represented in fig. 1.

Double-twist augers and bits, with a single-cutting floor-lip, have been long known and used. But this class of boring-tools has been open to the objection that "the spur, when broken, cannot be replaced." It is this objection in particular which my invention remedies.

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

The projection C on the floor-lip, for the purposes set forth.

IRA T. PAYNE.

Witnesses:

JOSEPH E. SILLIMAN,

T. C. SILLIMAN.