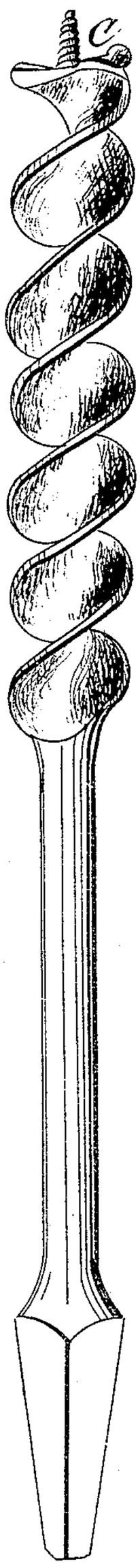
W. A. IVES.

AUGER.

No. 29,793. Patented Aug. 28, 1860.



Witnesses:

Jared Benham

Charles F Benham

Inventor:

W A Ives

UNITED STATES PATENT OFFICE.

W. A. IVES, OF NEW HAVEN, CONNECTICUT.

AUGER.

Specification of Letters Patent No. 29,793, dated August 28, 1860.

To all whom it may concern:

Be it known that I, WILLIAM A. IVES, of the city of New Haven and State of Connecticut, have invented a new and useful Improvement in the Construction of Augers and Auger-Bits; and the following is a clear and accurate description of the improvement and invention, reference being had to the accompanying drawing, which makes a part of this specification.

The design of the improvement is to lessen the expense of constructing the auger bit and combine all the advantages of the old center-bit with the advantages of the auger-bit as hitherto constructed and free from the defects or disadvantages to which both are subject. The center-bit cuts a smooth hole and works with little friction, but requires great pressure to force it into the wood and must be often removed to clear from chips. The auger-bit is drawn into the wood by its screw without external pressure and its spiral form or crimp throws out the chips, but it does not cut as smooth a hole or work with as little friction. This friction is caused by the unequal length of the horizontal lips, which with the present mode of making (turned with the hammer and finished with the file and the wheel) can never be made exactly equal. If the variation in their length is considerable the lips upon each side and the spurs, describing different circles must each cut their own way, requiring double the strength to operate the tool, and if the variation is but slight as in most cases, so that one side cutter can wedge into the circle of its fellow upon the opposite side, great friction is caused, which not only requires additional strength but greatly increases the wear upon the bit, and if the motion is rapid and long continued it becomes so heated as to be entirely ruined. This difficulty has been slightly remedied by Mr. Jennings by leaving of the two side lips, but not removed, for by retaining a spur upon each of the horizontal lips, which although made with the greatest care, cannot be made to operate without friction, and as a side lip in many cases is very necessary, the small gain is more than counterbalanced.

My improvement consists in constructing the auger and the auger-bit with cutters (either side and spur in connection, or either one separately) upon one side only, placed upon the edge of one of the horizontal lips (C), while the other B is left entirely free from side lip or spur, and so arranged as to divide the chip to be thrown off, making the tool really a "center auger-bit," combining all the advantages of both center and auger bit as hitherto made without any of the serious objections to which both are liable. The side cutters being upon one side only will always describe the same circle around the screw, which will be the exact center, the wood externally and internally will be cut as smoothly as by any center bit and without the least friction and all the strength required to operate the tool is just sufficient to cut the wood and throw out the chip. There being no side cutter upon one side enables the bit to clear itself far more readily than when made in the usual manner. The advantages then are cheapness of construction and greater durability, smoothness of cut without friction, and as there is but one spur to be drawn into the wood by the screw the bit will work well in many places where a bit with two spurs cannot be used and in every place with greater ease and freedom than with two.

I claim—

The combination of the double twist, with two cutting horizontal or floor lips, with side cutters (*a a*) attached to one of said floor lips only in the manner, and for the purpose substantially as herein specified.

W. A. IVES.

Witnesses:

JAMES BENHAM,
IRA MERWIN.