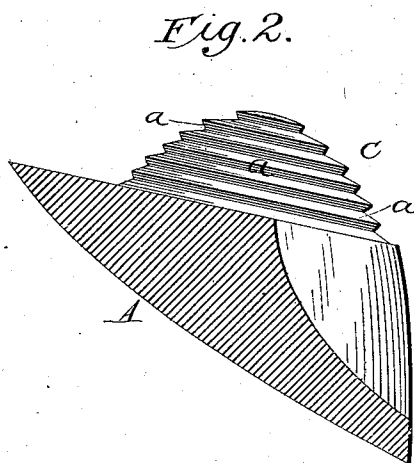
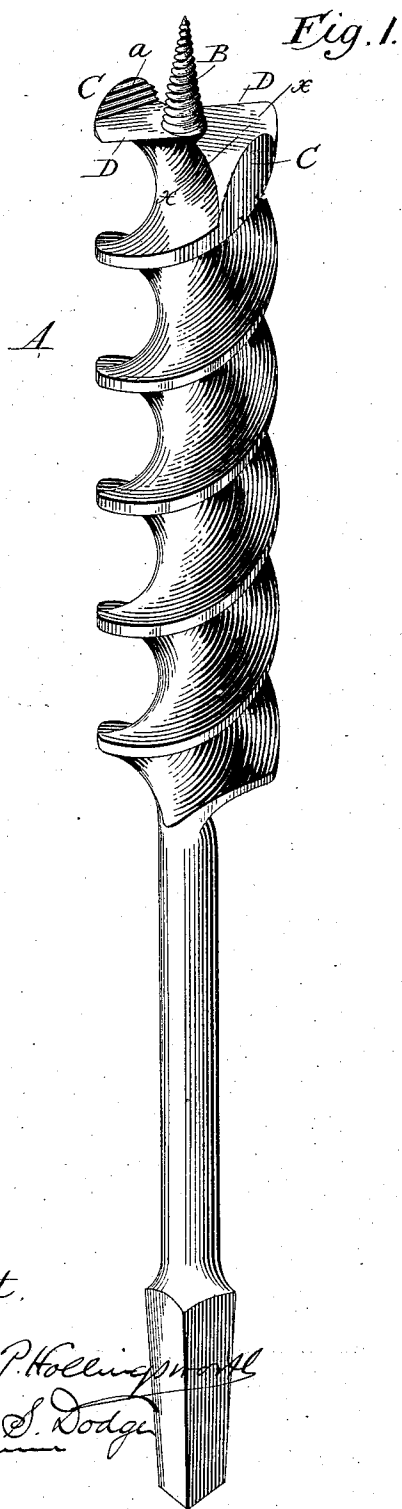


(No Model.)

E. HALL.
BIT.

No. 287,538.

Patented Oct. 30, 1883.



Attest.

Sidney P. Hollingsworth
Malter S. Dodge

Inventor.

Edward Hall,
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Attys.

UNITED STATES PATENT OFFICE.

EDWARD HALL, OF ELKHART, INDIANA, ASSIGNOR OF ONE-HALF TO
CARLTON E. SAGE, OF SAME PLACE.

BIT.

SPECIFICATION forming part of Letters Patent No. 287,538, dated October 30, 1883.

Application filed August 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HALL, of Elkhart, in the county of Elkhart and State of Indiana, have invented certain Improvements in Bits, of which the following is a specification.

My invention relates to bits for boring wood and other substances; and the improvements consist in providing the vertical cutting or nicking lips with threads or grooves, to cause the bit to be self-feeding after the central gimlet-point passes through the body being bored and ceases to be operative.

In the accompanying drawings, Figure 1 represents a perspective view of a bit embodying my improvements; Fig. 2, a cross-section on the line *x x* of Fig. 1.

As hitherto constructed, bits of this class have been open to the objection that in boring entirely through a body the central gimlet-point would penetrate the rear side before the cutting-lips, and, having thus penetrated, would lose the power of feeding the bit forward, thus rendering it necessary for the operator to press upon the bit with sufficient force to cause the proper advance of the tool. In boring endwise into the grain of a piece of wood, also, difficulty is commonly experienced in securing a proper feed or advance of the bit. To overcome these difficulties I form threads or ribs and grooves suitably inclined to cause or assist in producing the advance of the tool. This will be readily understood by referring to the drawings, in which—

A represents the bit as a whole; B, the central screw or gimlet-point; C, the vertical circumferential cutters, and D the routers, which pass beneath and raise up the portion cut loose at the sides by the cutting-lips C, these parts being all of ordinary construction and form, except the vertical cutting-lips, which, in the present instance, are formed with threads or V-shaped ribs or grooves *a* on their inner faces, inclined at a suitable angle to cause the advance of the tool after the screw-point B ceases to perform that office, or to perform it with sufficient certainty and effect. They will also co-operate with the central point throughout the boring operation, if given the proper pitch, and the advance of the tool will be thus rendered more certain and uniform, especially when the hole passes partly into a soft portion, a knot or other formation not offering a proper

or sufficient hold for the central screw-point. The pitch may, however, be varied as circumstances may require.

It will be seen that under the above construction the threads *a*, being below or in advance of the routers D, will always take hold upon and embed themselves into the solid wood or other substance until the cutting-lips C pass entirely through the body being bored, and hence there will be no necessity for pressing upon the bit, and thereby forcing it through at the back before the walls of the hole are completely cut through. In this way the bit is caused to cut a perfectly smooth clean hole entirely through the body from side to side, and all danger of splintering or splitting off fragments of the wood about the hole is avoided.

The improvement is applicable to augers and to all tools having a circumferential cutting lip or lips, such as herein referred to, or the lip may extend around the whole circumference. In some cases threads may be made on the outer faces of the lips, either at their lower ends or over their entire faces, from bottom to top; but ordinarily they will be made on the inner faces only, in order that the outer circumference or face of the lips may be smooth and cut a perfectly clean smooth hole. It is also apparent that the threads may be applied to one cutting-lip only, and that they may be formed on both the inside and outside; but the plan shown, however, is deemed best. The center or gimlet point, B, may be left off entirely, or made without threads or corrugations.

Having thus described my invention, what I claim is—

1. A boring-tool provided with circumferential cutting lip or lips having threads or corrugations formed in or upon their faces, substantially as and for the purpose explained.

2. The herein-described boring-tool, consisting of body A, central point, B, cutting lip or lips C, and router or routers D, said cutting lip or lips being provided with threads or corrugations *a*, substantially as shown and described.

EDWARD HALL.

Witnesses:

JOHN B. POLLARD,
J. W. MIDDLETON.