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G. C. KNAPP

1,966,176

AUGER BIT CONSTRUCTION

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Fig. 1.

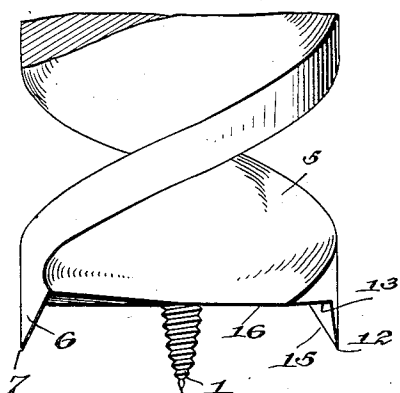


Fig. 2.

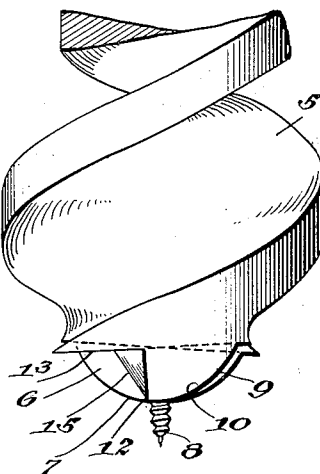


Fig. 3.

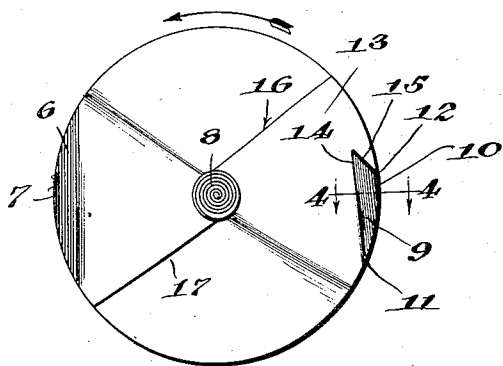
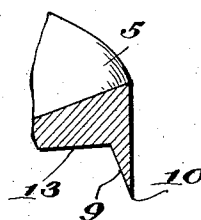


Fig. 4.



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UNITED STATES PATENT OFFICE

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AUGER BIT CONSTRUCTION

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Application November 3, 1933, Serial No. 696,590

2 Claims. (Cl. 145—117)

My invention relates to improvements in auger bit constructions, and it consists in the combinations and arrangements herein described and claimed.

5 The invention relates to auger bits of the double lip type, in which wedge-shaped lips disposed on opposite sides of the central entering screw are provided and in which radially extending and substantially horizontal cutting edges are dis-
10 posed, these cutting edges being angularly arranged with respect to a line through the central portions of the lips and the axis of the auger.

Auger bits of the type just described are the ones which are in common use today. Any one
15 who has used the ordinary auger bit knows that when the auger has cut through the wood and is coming out on the other side, it is almost impossible to prevent the splintering of the wood. The reason is that since the forward part of the dou-
20 ble lips ("forward" meaning direction of movement of the tool in boring) have their cutting edges substantially parallel to the plane of the wood being bored, farther back in the wood the inclined edges of these cutting lips will give a
25 shearing cut, but when the auger is about to emerge, these inclined edges of the cutting lips have not yet reached the part which is apt to splinter off, due to the fact that the forward edges of the cutting lips are being forced against
30 the wood like a wedge.

An object of my invention is to provide an auger bit which will, in every instance, make a clean-cut hole without any splintering, and with-
35 out the production of burrs on the underside of the wood as the auger emerges.

A further object of the invention is to provide an auger bit in which provision is made for clear-
40 ance cutting.

A further object is to provide a bit in which the frictional heat is reduced to a minimum.

A further object is to provide a device of the type described in which the sharpening of the device is easily done.

Other objects and advantages will appear in
45 the following specification and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompany-
50 ing drawing forming part of this application, in which:

Figure 1 is a side elevation of a portion of my improved auger bit.

Figure 2 is a side elevation viewed at right angles to Fig. 1.

55 Figure 3 is an end view of the bit, and,

Figure 4 is an enlarged section along the line 4—4 of Fig. 3.

In carrying out my invention I make use of an auger having a body portion 5 and a lip 6 similar to that found in augers of the ordinary type
60 described above. The edge of this lip 6 is shown at 7 and a central screw indicated at 8.

Instead of having a companion lip similar to the lip 6 on the opposite side of the central screw, I provide a forwardly extending member 9.
65 This member, it will be observed, has a curved cutting edge 10 extending from the point 11 in Fig. 3, the point 12 being substantially at the extreme forward portion of the member 9. The member 9, as will be observed also from Fig. 3,
70 merges with the forward surface of the cutter blade 13 on a line 14, which is inclined inwardly from the outer edge as clearly shown in Fig. 3. There is a cutting edge 15 which extends from the point 12 on the outer periphery rearwardly to the
75 surface of the cutter 13.

Consider now the operation of the device. As the auger is turned in the direction of the arrow in Fig. 3, the screw 8 will act as usual to force the bit into the wood. Since the cutting edge 15
80 is in advance of the horizontal cutting edges 16 and 17, there will be a V-shaped groove cut in advance which gives the inside clearance that makes this device so efficient. As the auger emerges from the wood it will be observed that
85 there is a shearing cut given to the very last portion, since the inclined cutting edge extends to the most forward point 12, as distinguished from the wedging action of the ordinary double lip auger.

Many thousands of holes have been bored with the device as described above without the slight-
90 est evidence of splintering even when the cutters showed a certain degree of dullness. The cutter is easily sharpened by running the flat side of a file against the member 9, the file being held in a plane vertical to the plane of the paper in Fig. 3, so that the sharpening is easily accomplished.

The fact that the clearance cutter makes it easier for the blades having the cutting edges 16
100 and 17 to advance, reduces the friction greatly and this adds to the life of the tool. The cutting edge 15 of the clearance cutter extends slightly farther toward the center of the auger than any portion of the wedge-shaped lip 6, so that the
105 wedging action of the latter is relieved and it travels freely in the V-shaped groove cut by the clearance cutter, and thus reduces the friction of the lip 6 as well as of the other blades mentioned.

I claim:

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1. An auger bit construction comprising a central screw, a pair of blades having cutting edges arranged at right angles to the axis of the auger and extending substantially in a radial direction with respect to said screw, a cutter disposed between said screw and the outer edge of the auger, said cutter having a cutting edge extending from the outer edge inwardly and rearwardly for cutting a V-shaped groove.
2. An auger bit comprising a centrally disposed screw, a pair of blades having cutting edges arranged at right angles to the axis of the auger and extending in a substantially radial direction with respect to said axis, a cutter having a body portion provided with a curved cutting edge extending from the plane of one of said first named cutters and a cutting edge extending from the forward point of said curved edge inwardly and rearwardly to the plane of said first named cutter blade whereby a V-shaped groove is cut in advance of the other of said pair of cutter blades.

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