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(54) **Wood drill bits**

(57) A flat-type or spade wood bit having a flat end 2 and a shank end 3 is provided with a screw-threaded centre point 4, whereby when the bit is rotated so as to cut a hole in wood, the centre point 4 draws the bit into the wood.

The cutting blades 11 may include a scribing spur 10.

The shank end 3 may be of hexagonal cross-section.

The thread of the point 4 corresponds to that of a wood screw. A flat may be formed on one side of the point, so as to remove an axially-extending segment of the thread material. This arrangement assists an operator to pull the bit away from the wood it is cutting. For example, when drilling blind-ended holes and/or mortising.

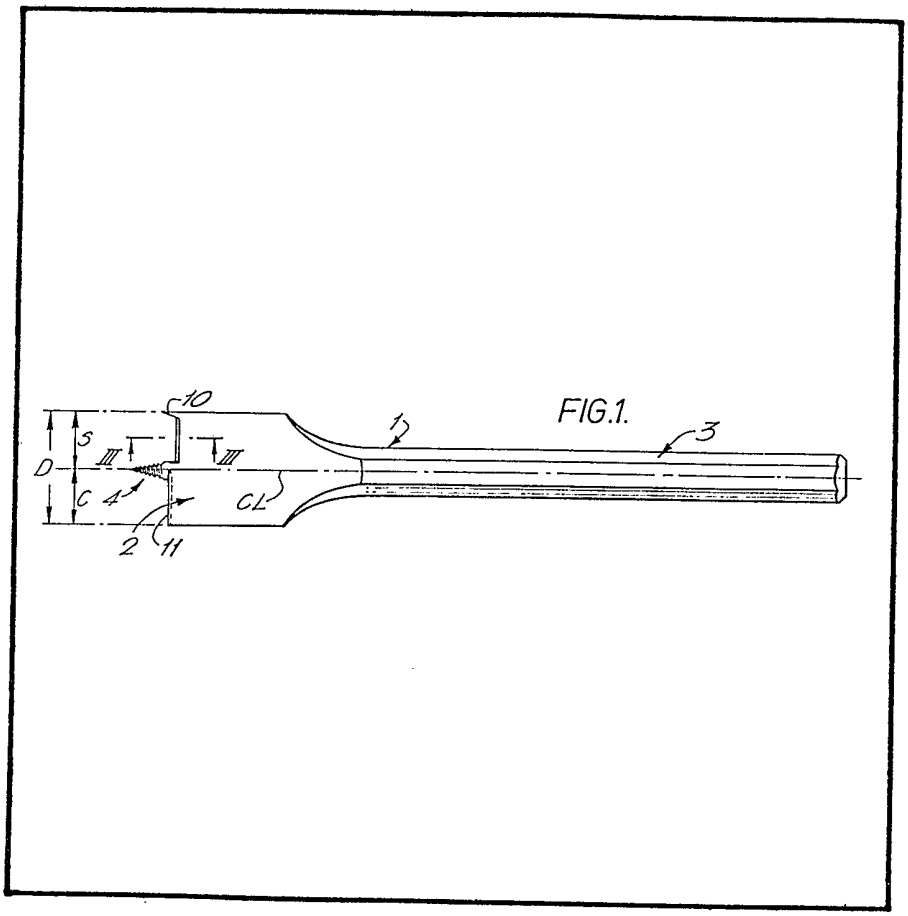

FIG.1.

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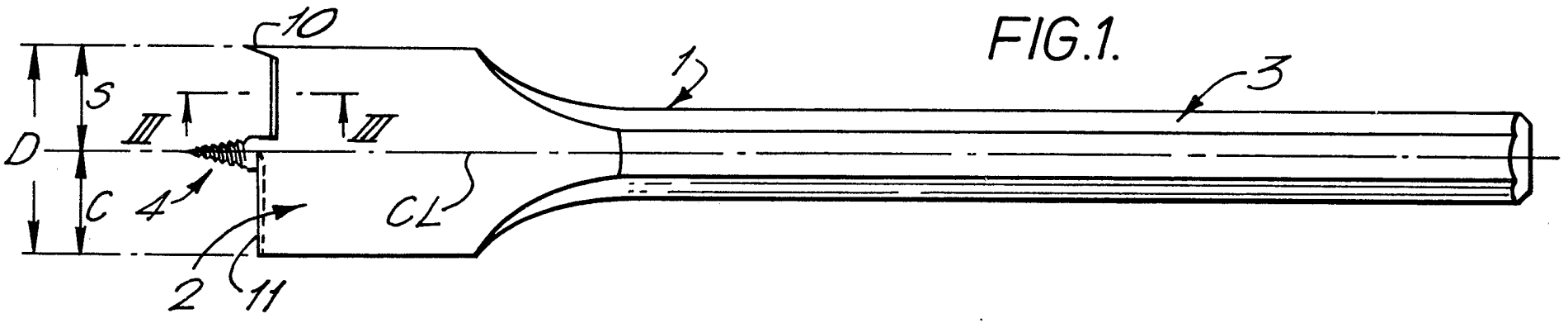


FIG.1.

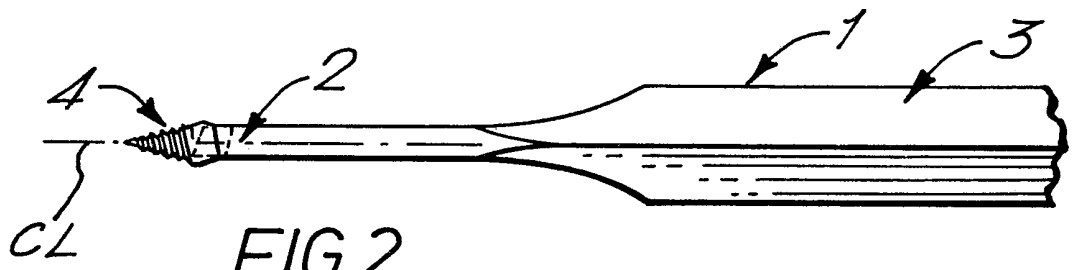


FIG.2.

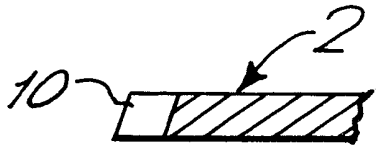
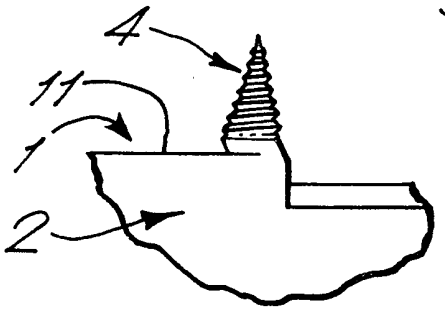


FIG.3.

FIG.4.



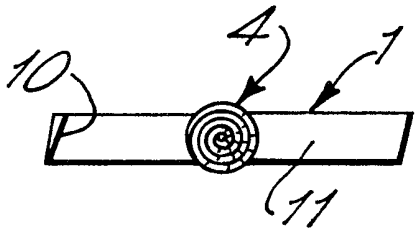


FIG.5.

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FIG.6.

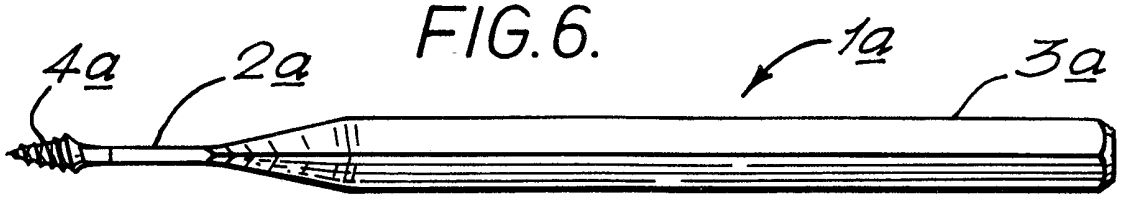


FIG.7.

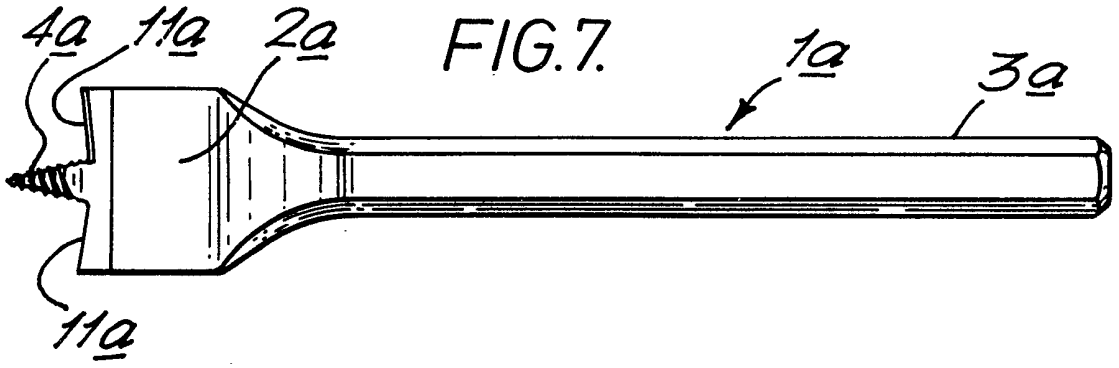


FIG.8.

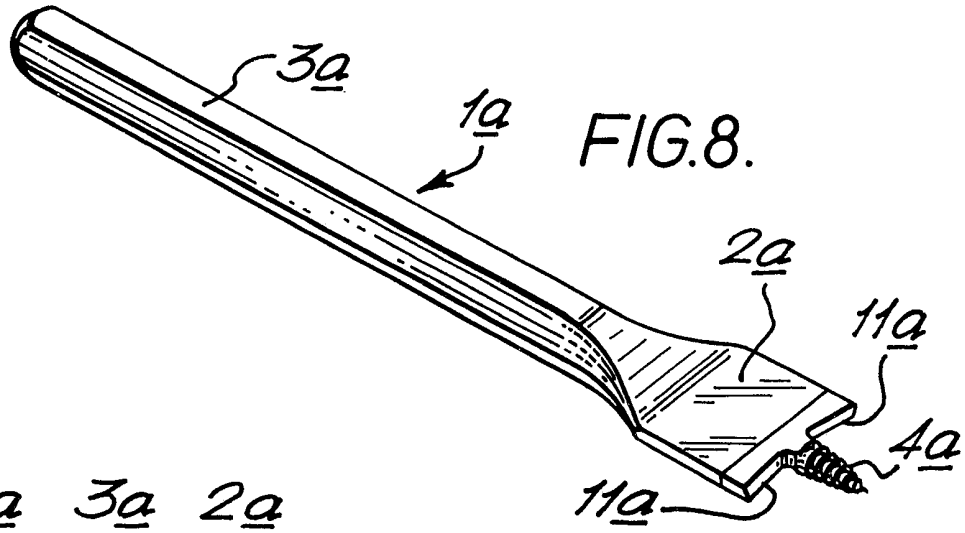
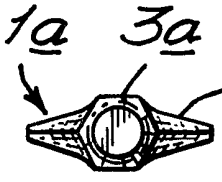


FIG.9.



SPECIFICATION

Improvements in or relating to wood bits

This invention relates to wood bits and is concerned with flat-type wood bits.

According to the invention, a flat-type wood bit is provided with screw-threaded centre point whereby when the bit is rotated so as to cut a hole in wood, the screw-threaded centre point draws the bit into the wood.

The wood bit may be provided with a pair of cutting edges.

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, wherein:—

Figure 1 is a side view of a flat-type wood bit according to one form of the invention,

Figure 2 is a plan view thereof,

Figure 3 is a fragmentary view in section, taken on lines III—III of Figure 1,

Figure 4 is a fragmentary side view of the screw-threaded centre point,

Figure 5 is a front end view of the bit,

Figure 6 is a side view of a flat-type wood bit according to another form of the invention,

Figure 7 is a plan view thereof,

Figure 8 is a view in perspective, and

Figure 9 is a rear end view of the bit.

In the drawings, like reference numerals refer to like parts.

With reference to Figures 1 to 5, a fløat-type wood bit 1 having a flat end 2 and a shank end 3 is provided with a screw-threaded centre point 4, whereby when the bit 1 is rotated so as to cut a hole in wood, the centre point 4 draws the bit into the wood.

The flat end 2 is also provided with a single scribe or spur 10 and a cutting blade 11. With reference to Figure 1, dimensions *C* and *S* extending from the centre-line *C.L.* of the bit differ. In this example, *C*=.495 of diameter *D* and *S*=.505 thereof. This off-set arrangement results in a clean entry hole being made in wood being cut.

The shank end 3 is of hexagonal (lateral) cross-section.

The thread of the point 4 corresponds to that of a wood screw. A flat may be formed on one side of the point, so as to remove an axially-extending segment of the thread material. This arrangement assists an operator to pull the bit away from the wood it is cutting. For example, when drilling blind-ended holes and/or mortising.

The screw-thread may be formed by rolling.

To manufacture the bit 1, a length of hexagonal bar of *EN9* material is drop forged so as to form the flat end. This flat could be dished—on opposite sides—so as to thicken up the outer sides of the flat. The flat may be perforated—so as to prevent obstructive build-up of cut material.

The point 4 is formed by squeezing, the forging is then trued-up, i.e. clipped, and the screw-thread on the point formed, preferably by rolling, so as to increase the cross-section of the screw.

The bit is then stress relieved, heated and tempered. Subsequently, the flat 2 is backed off by grinding.

With reference now to Figures 6 to 9, a flat-type wood bit 1*a* having a flat end 2*a* and a shank end 3*a* is provided with a screw-threaded centre point 4*a*, whereby when the bit 1*a* is rotated so as to cut a hole in wood, the centre point 4*a* draws the bit into the wood.

The flat end 2*a* is also provided with a pair of laterally-extending, angled scribing/cutting blades 11*a*.

The shank end 3*a* is of hexagonal (lateral) cross section, which can be shortened if required whilst retaining the benefits of this cross-section. The shank end 3*a* can be effectively extended if desired, by use of an extension bar having a hexagonal socket at one end (to receive shank 3*a*) and given a hexagonal cross-section at the other end. The width of the flat end 2*a* can be reduced if necessary, for example by filing or grinding down the sides.

As in the case of the wood bit 1 of Figures 1 to 5:—

1. The thread of the point 4*a* corresponds to that of a wood screw. A flat may be provided on one side of the point, so as to remove an axially-extending segment of the thread material. This arrangement assists an operator to pull the bit away from the wood it is cutting. For example, when drilling blind-ended holes and/or mortising.

2. The screw-thread may be formed by rolling.

3. To manufacture the bit 1*a*, a length of hexagonal bar of *EN9* material is drop forged so as to form the flat end. This flat could be dished—on opposite sides, so as to thicken up the outer sides of the flat. The flat may be perforated—so as to prevent obstructive build-up of cut material.

4. The point 4*a* is formed by squeezing, the forging is then trued-up, i.e. clipped, and the screw-thread on the point formed, preferably by rolling, so as to increase the cross-section of the screw.

5. The bit is then stress relieved, heated and tempered. Subsequently, the flat 2*a* is backed off by grinding.

The bits 1, 1*a* are more efficient than currently-known bits as in use, the screw-threaded centre points 4, 4*a* precede the cutting blades 11, 11*a* so that the bits are drawn into the wood they are cutting by the points 4, 4*a* as they bore their way into the wood. Thus an operator is relieved of the need to make a substantial amount of effort, which is demanded when currently-known bits are employed.

The shank ends 3, 3*a* may be rounded if desired, or they may be rounded with tapering flats, so as to allow the bits 1, 1*a* to be used in a brace. They may also be shortened if required.

The bits 1, 1*a* can be used with advantage in confined spaces such as between floor joists, where they can be made to follow a curved, banana-like cutting path.

Claims

1. A flat-type wood bit provided with screw-

thread centre point whereby when the bit is rotated so as to cut a hole in wood, the screw-threaded centre point draws the bit into the wood.

2. A wood bit as claimed in Claim 1, provided with a pair of cutting edges.

3. A wood bit as claimed in Claim 1, provided with a single cutting edge and a scribe or spur.

4. A wood bit as claimed in Claim 1, 2 or 3, wherein a flat is formed on one side of the centre point.

5. A wood bit as claimed in Claim 1, 2, 3 or 4 having a shank end of hexagonal (lateral) cross-section.

6. A wood bit substantially as hereinbefore described with reference to Figures 1 to 5 of the accompanying drawings.

7. A wood bit substantially as hereinbefore described with reference to Figures 6 to 9 of the accompanying drawings.

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