

[54] **ADJUSTABLE HIGH SPEED BIT**

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[51] Int. Cl. .... **B23b 51/00**

[58] Field of Search ..... **408/199, 228, 188,**  
**408/187, 189, 190, 224**

[56] **References Cited**

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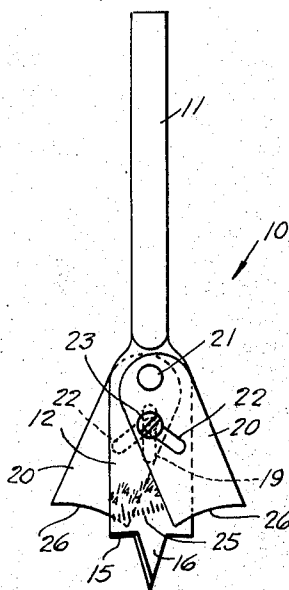
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[57]

**ABSTRACT**

An adjustable high speed wood bit adapted for use with an electric drill and having a long cylindrical shank with a flat blade integrally formed on the lower end thereof. The flat blade has a point on its lower end for centering the drill and forming a pilot hole. The lower edges of the flat plate alongside of the point are oppositely sharpened to cut the wood in forming a bore. A pair of blades are pivotally secured to opposite sides of the flat plate with each blade having a slot partially overlying a vertical slot in the blade. A bolt extends through the three slots and may be raised and lowered in the vertical slot of the flat plate to cause the blades to swing outwardly increasing the diameter of the bit. The lower edges of the blades are sharpened to cut the wood in forming a bore. The bolt securely fastens the blades in adjusted position during the cutting operation. A scale is formed on the flat plate to cooperate with the side edge of one of the blades to indicate the size of the bore which will be drilled by the bit in a specific adjusted arrangement.

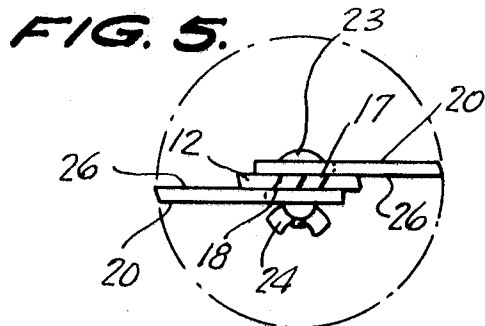
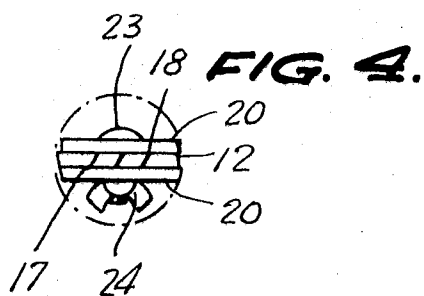
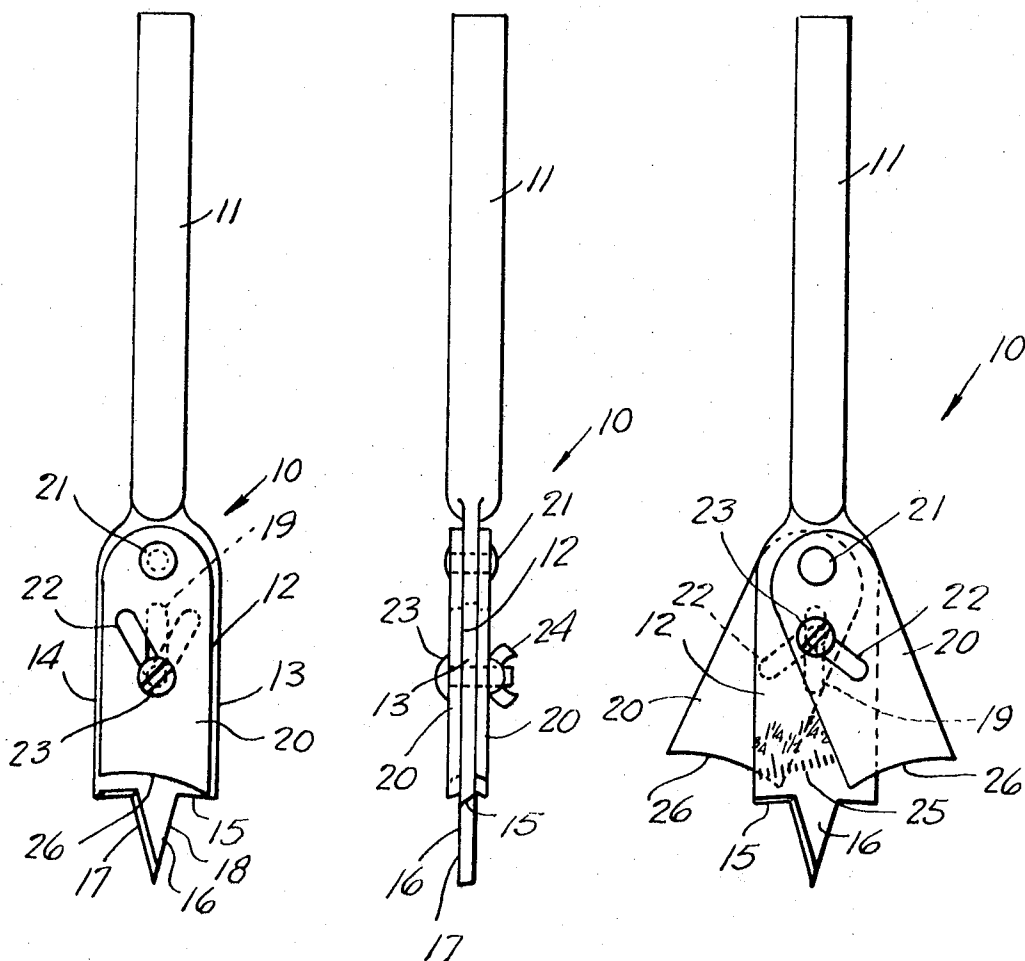
**4 Claims, 5 Drawing Figures**



**FIG. 1.**

**FIG. 2.**

**FIG. 3.**



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## ADJUSTABLE HIGH SPEED BIT

## BACKGROUND OF THE INVENTION

## 1. FIELD OF THE INVENTION

The present invention relates to adjustable high speed wood bits.

## 2. SUMMARY OF THE INVENTION

In the present invention an elongate cylindrical shaft has a relatively flat plate integrally formed on its lower end carrying an axial point for forming a pilot hole in the material being drilled. The lower edges of the flat plate on opposite sides of the point are oppositely sharpened to permit the flat plate to act as a cutter when rotated in an electric drill. A pair of cutter blades are secured at their upper end portions by a rivet to the upper end portion of the plate with each blade having an oppositely extending slot partially overlying a vertical slot formed centrally of the plate. A bolt extends through the three slots to secure the blades to the plate in radially adjusted position for boring the desired size hole in wood. Movement of the bolt in the vertical slot causes the blades to swing outwardly on their pivots.

The primary object of the invention is to provide an adjustable high speed drill bit which can be expanded to drill holes of any desired size within a specific range of sizes with the adjustment relatively simple to make.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawing:

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevation of the invention with the cutter blades in retracted position;

FIG. 2 is a side elevation of the structure shown in FIG. 1;

FIG. 3 is a view similar to FIG. 1 with the cutter blades in extended position;

FIG. 4 is a bottom plan view of the FIG. 1 construction; and

FIG. 5 is a bottom plan view of the bit with cutters extended, as shown in FIG. 3.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 10 indicates generally an adjustable high speed wood bit constructed in accordance with the invention.

The wood bit 10 includes an elongate cylindrical shaft 11 having a generally flat blade 12 integrally secured to the lower end thereof. The blade 12 has parallel side edges 13, 14 and a sharpened bottom edge 15. A triangular point 16 is integrally formed with the plate 12 and is symmetrical with the axis of the shaft 11. The point 16 has its opposite sides sharpened at 17, 18 for wood cutting purposes.

A slot 19 is formed in the plate 12 symmetrical with the axis of the shaft 11 and in the upper portion of the plate 12.

A cutting blade 20 is pivotally secured to each side of the plate 12 by means of a rivet 21 which extends through the upper portion of the blades 20 and the upper portion of the plate 12. A slot 22 is formed in

each of the blades 20 and slopes inwardly and downwardly from a point adjacent one side edge of the blade 20 to a point adjacent the central line thereof.

A bolt 23 extends through the slots 22 and the slot 19 and has a wing nut 24 provided for tightening the bolt 23 against the blades 20 to bind them in adjusted position to the plate 12.

The plate 12 on one side thereof adjacent the bottom is provided with indicia 25 forming a scale which cooperates with one side edge of one of the blades 20 to indicate the size of the bore that the bit will drill in its adjusted position.

The lower edge 26 of the blades 20 is slightly arcuate and is sharpened to permit the blades 20 to cut wood in forming a bore of a size larger than the plate 12.

In the use and operation of the invention, the wing nut 24 is loosened and the blades 20 are swung in and out by moving the bolt 23 until the desired bore size is indicated by one edge of the blade 20 cooperating with the scale 25. The wing nut 24 is then tightened on the bolt 23, binding the blades 20 to the plate 12 in angularly adjusted position. The bit 10 is then used in the conventional manner to drill a bore in wood, plastic, fiber glass, formica, and the like. Following the use of the bit 10, the cutting blades 20 are swung in to overlie the plate 12 by first loosening the bolt 23 and then tightening the same with wing nut 24.

Having thus described the preferred embodiment of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the spirit of the invention.

1. An adjustable high speed bit for electric drills comprising a generally cylindrical shank, a flat plate integrally secured to said shank and extending from the lower end thereof with spaced parallel side edges, a sharpened cutting edge formed on the lower edge of said plate, a cutting point integrally formed centrally of the lower edge of said plate symmetrical about the axis of said shank, a pair of cutter blades on opposite sides of said plate, said cutter blades having lower arcuate edges, a rivet pivotally securing the upper end portion of each of said blades to the upper end portion of said plate along the axis of said shank, means for adjustably securing said blades to said plate, and means including a scale on said plate for setting said blades for the desired circumference of cut.

2. A device as claimed in claim 1, wherein the means for securing said blades in adjusted position on said plate includes a vertical slot extending through said plate along the axis of said shank, and a pair of angularly related slots and a clamping bolt extending through said slots for clamping said blades to said plate.

3. A device as claimed in claim 2, wherein said clamping bolt has a hand actuatable wing nut associated therewith.

4. A device as claimed in claim 1, wherein the lower arcuate edge of said cutting blades is sharpened to a cutting edge.

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