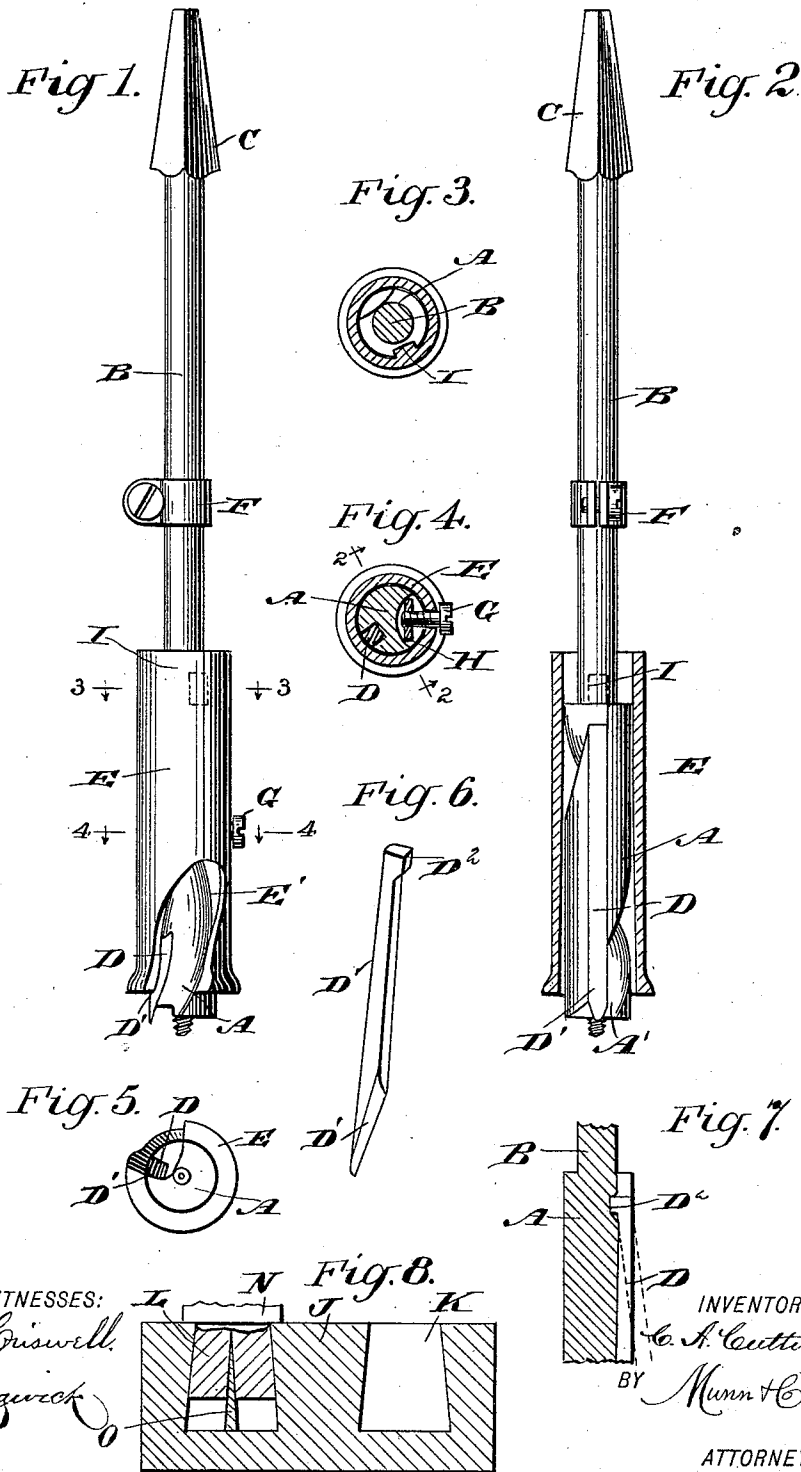


(No Model.)

C. A. CUTTING.
TOOL.

No. 495,311.

Patented Apr. 11, 1893.



UNITED STATES PATENT OFFICE.

CHARLES ALBERT CUTTING, OF MIDDLETOWN, VIRGINIA.

TOOL.

SPECIFICATION forming part of Letters Patent No. 495,311, dated April 11, 1893.

Application filed August 9, 1892. Serial No. 442,559. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ALBERT CUTTING, of Middletown, in the county of Frederick and State of Virginia, have invented a new and Improved Tool, of which the following is a full, clear, and exact description.

The invention relates to boring tools, and its object is to provide a new and improved tool which is simple and durable in construction and arranged to drill a conical recess.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a similar view of the same with the shell in section on line 2—2 of Fig. 4. Fig. 3 is a sectional plan view of the same on the line 3—3 of Fig. 1. Fig. 4 is a similar view of the same on the line 4—4 of Fig. 1. Fig. 5 is an inverted plan view of the same. Fig. 6 is a perspective view of the cutter. Fig. 7 is a side elevation of the same as applied on the bit, the latter being shown in section; and Fig. 8 is a sectional side elevation showing the drilled recess and the mode of fastening parts in the said recesses.

The improved boring or drilling tool is provided with the bit A formed by the usual twist and secured on the lower end of the shank B provided with the usual head C for connection with the brace or other tool, to revolve the drilling tool.

In the bit A is arranged longitudinally, at the peripheral surface thereof, a cutter D extending at its cutting end D' into the space formed at the lower end of the bit A between the twists, as will be readily understood by reference to the drawings. The upper end of the cutter D is formed with an offset D² fitting into a corresponding recess in the upper end of the bit A, the said offset forming a pivot for the cutter to swing outward on, so that it stands at an angle to the axis of the bit A. The latter with the cutter D fits loosely into a shell or sleeve E, preferably made cylindrical in shape and slightly enlarged at its lower end so as to permit the cutting end

D' of the cutter to swing outward into the normal position as the lower end of the bit A passes out of the shell E. The lower end of the sleeve E is provided with a recess E' for the passage of the shavings.

The depth of the cut made by the tool is regulated by means of a clamp F clamped on the shank B and located a distance from the upper end of the shell E corresponding to the depth of the cut to be made, it being understood that when boring or drilling the clamp F finally comes in contact with the upper end of the sleeve E and prevents a further advance of the cutting end of the bit A in the material.

The space formed by the twist in the bit A is engaged by a plate H secured on a screw G screwing in the shell E so that in revolving the tool the shell E revolves with it and at the same time the tool is free to move downward in the shell as the lower end of the latter rests on the material in which a recess is to be formed by the tool. The plate H further serves to hold the space formed by the twist in line with the recess E' to permit the discharge of the shavings at all times.

In order to prevent the bit A from accidentally leaving the shell E, a lug I is provided, formed in the shell E, near the upper end, the said lug extending across the upper end of the bit A, so as to prevent an upward movement of the latter except when desired, at the time the space formed by the twist is brought opposite the said lug I.

The device is used as follows: The slightly projecting end of the bit A is placed on the proper point of the material J in which the recess K is to be formed, and then the tool is revolved so that it cuts into the material, the shavings passing through the recess E' formed in the lower end of the sleeve or shell E. It is understood that the lower end of the shell seats itself on the material J, and as the boring advances the cutting end D' of the cutter D comes in contact with the material and is consequently pushed outward so as to assume an angular position relative to the bit D, thus cutting a conical recess K in the material J. It is understood that all the shavings can pass up in the space A' formed by the twist of the bit A, to be finally discharged through the recess E' in the sleeve E. When the clamp F

finally strikes the top of the shell E, then the proper depth for the recess K has been reached and the tool is then turned in the inverse direction. The cutter D now falls back into its normal position in the peripheral surface of the bit A, so that the latter can be readily withdrawn from the recess K. It will be seen that such conical recesses K are very useful for insertion of posts, dowels and other devices, as shown in Fig. 8, it being understood that the cylindrical part L of the post N enters the recess K and engages a wedge O set in the bottom of the recess so that the cylindrical part L splits and its two parts are wedged in contact with the walls of the recess K. The post N is thus securely fastened in place in the material J.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A tool comprising the spirally grooved bit having an external longitudinal recess opening at its lower end into the lower end of the spiral groove, a cutter pivoting at its upper end in the upper end of said recess, extending therefrom flush with the exterior of the bit to the lower end thereof; the lower end of the cutter where it intersects the end of the spiral groove being formed with a cutting edge D', and a sleeve through which the bit is free to slide and with which it rotates, substantially as set forth.

2. A tool comprising a bit, a cutter pivoted

on the said bit and arranged longitudinally on the peripheral surface of the same, the said cutter being mounted to swing outward to assume an angular position to the axis of the bit, and a shell or sleeve through which passes the said bit and its cutter, and provided at its lower end with a lateral outlet for the chips raised by the bit substantially as shown and described.

3. A tool comprising a bit, a cutter pivoted on the said bit and arranged longitudinally on the peripheral surface of the same, the said cutter being mounted to swing outward to assume an angular position to the axis of the bit, a shell or sleeve through which passes the said bit and its cutter, and means for connecting the said sleeve with the space formed between the twists of the bit, substantially as shown and described.

4. A tool comprising a bit, a cutter pivoted on the said bit and arranged longitudinally on the peripheral surface of the same, the said cutter being mounted to swing outward to assume an angular position to the axis of the bit, a shell or sleeve through which passes the said bit and its cutter, and a clamp held on the shank of the said bit to regulate the depth of the recess to be formed, substantially as shown and described.

CHARLES ALBERT CUTTING.

Witnesses:

E. J. MCGEE,

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