

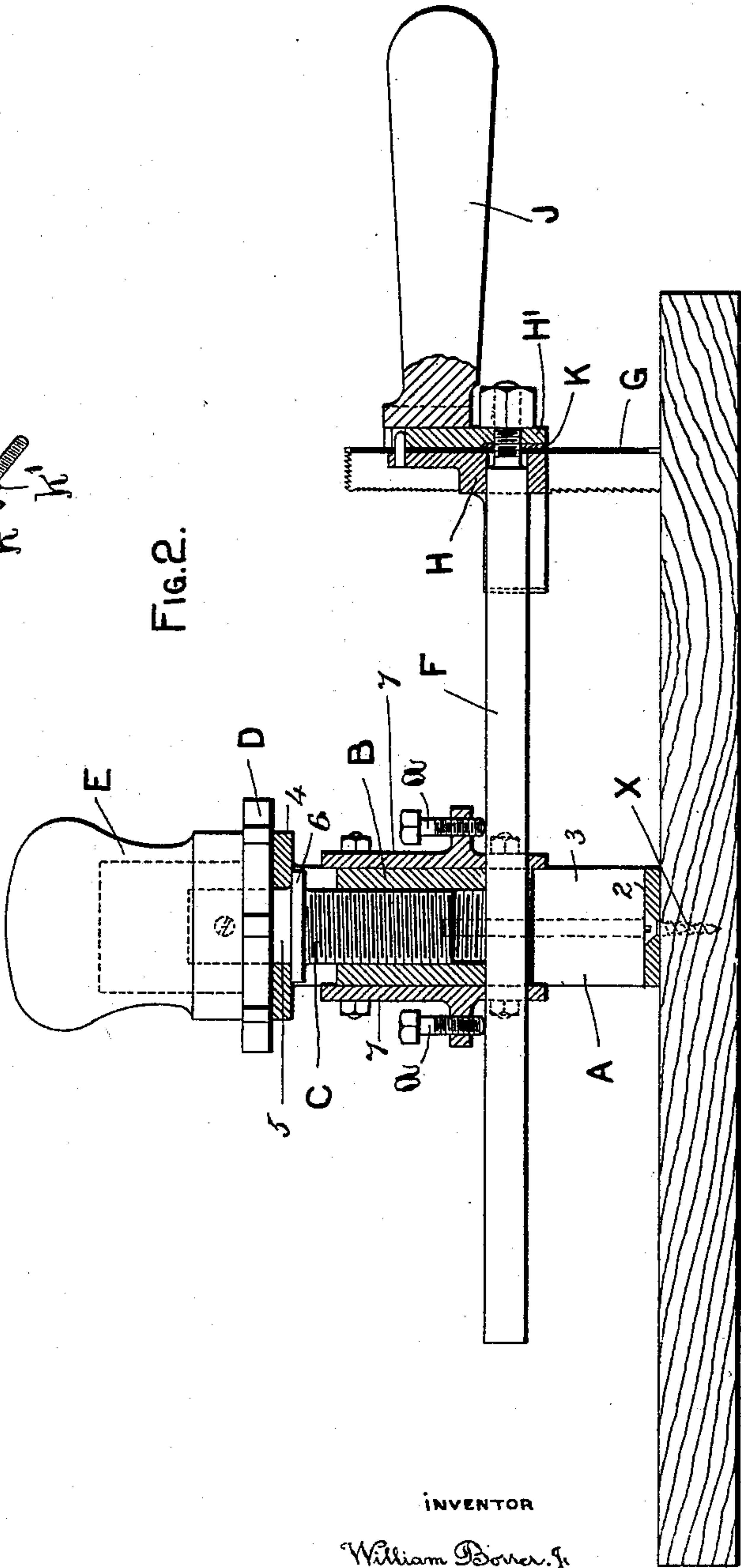
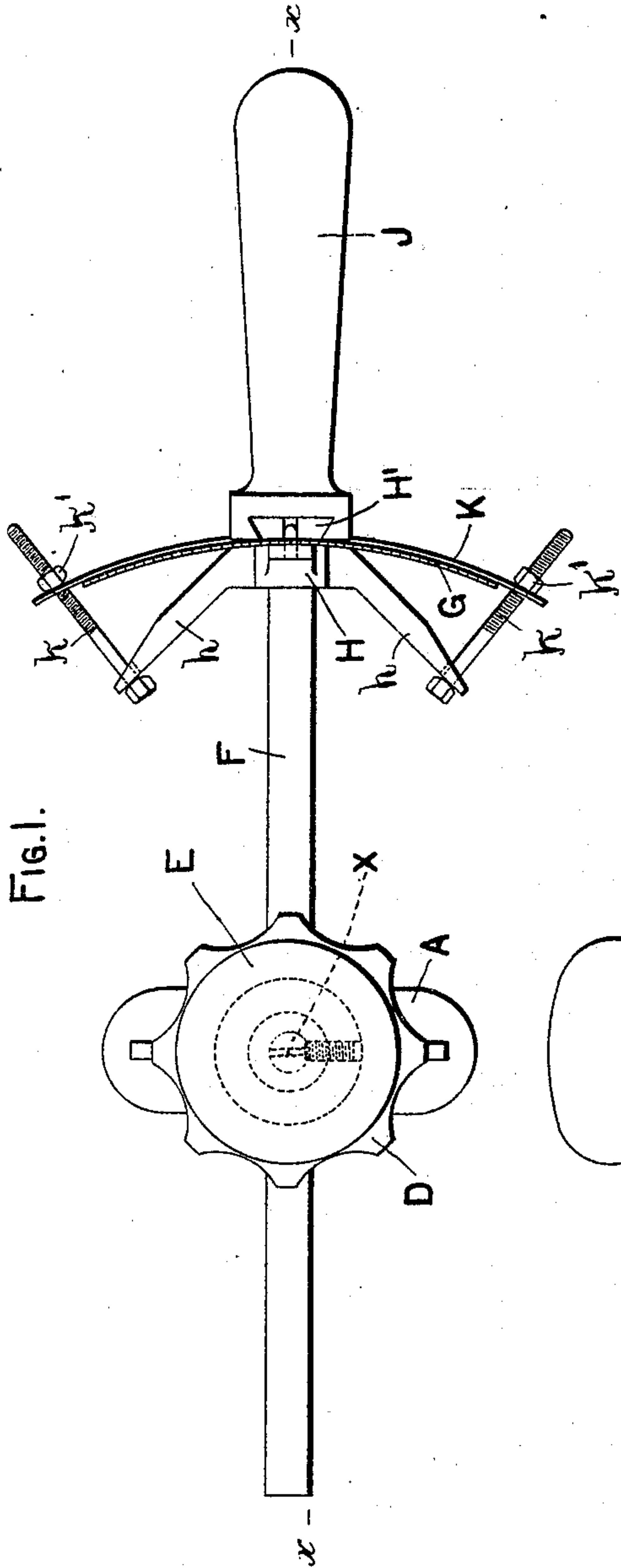
(No Model.)

W. BORRER, Jr.  
TOOL.

2 Sheets—Sheet 1.

No. 596,568.

Patented Jan. 4, 1898.



WITNESSES

Alfred H. Broad.

Albert J. George.

INVENTOR

William Borrer, Jr.

per.

Robert E. Phillips.  
Attorney.

(No Model.)

2 Sheets—Sheet 2.

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TOOL.

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FIG. 3.

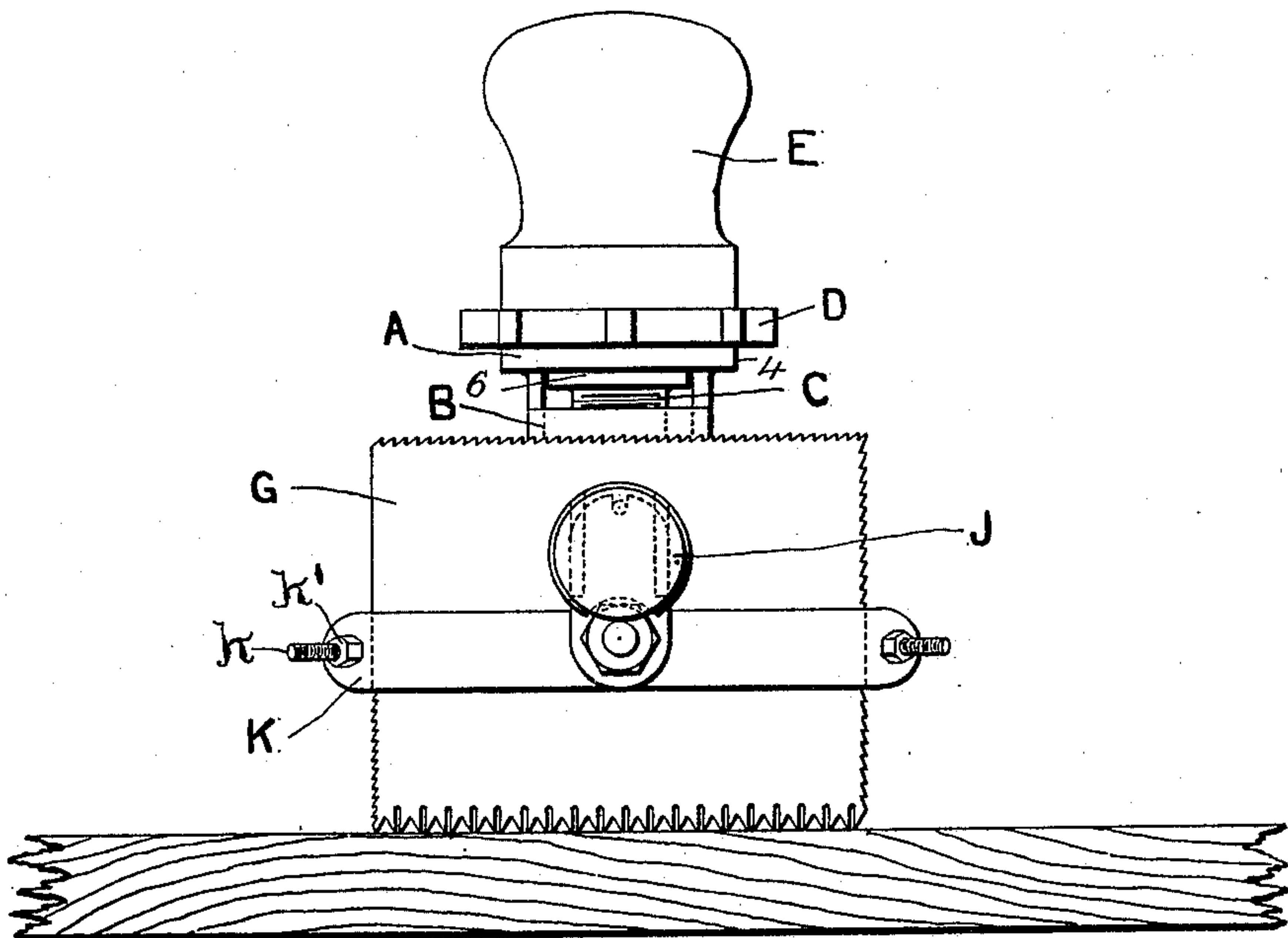
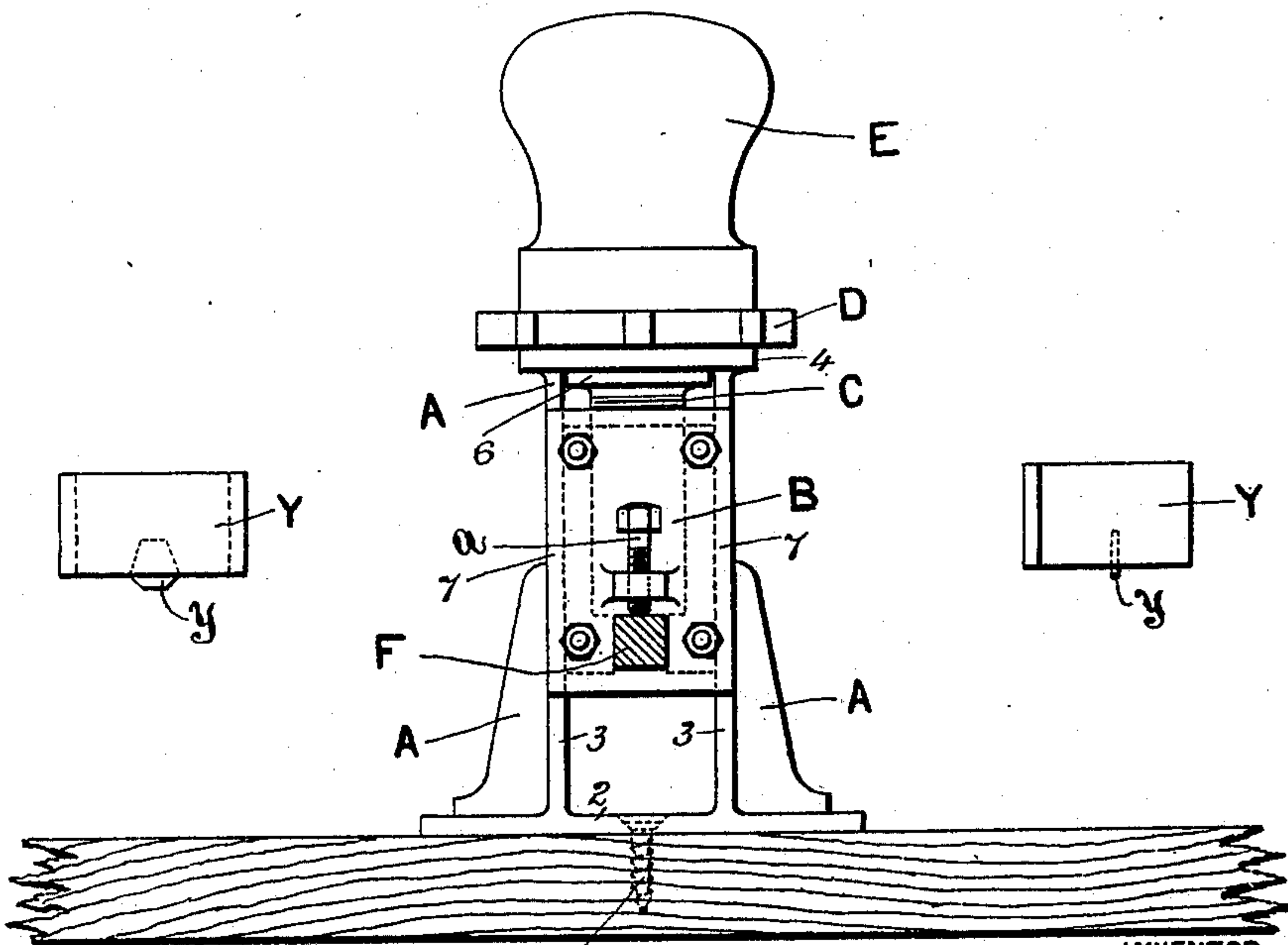


FIG. 4.



WITNESSES.

Alfred. H. Broad.  
Albert. J. George.

INVENTOR

William Borrer, Jr.

per.

Robert Phillips  
Attorney



# UNITED STATES PATENT OFFICE.

WILLIAM BORRER, JR., OF HURSTPIERPOINT, ENGLAND.

## TOOL.

SPECIFICATION forming part of Letters Patent No. 596,568, dated January 4, 1898.

Application filed June 1, 1897. Serial No. 639,061. (No model.) Patented in England November 17, 1896, No. 25,874.

*To all whom it may concern:*

Be it known that I, WILLIAM BORRER, Jr., a subject of the Queen of Great Britain, residing at Hurstpierpoint, in the county of Sussex, England, have invented a new and useful Tool, (for which I have obtained Letters Patent in Great Britain, No. 25,874, bearing date the 17th day of November, 1896,) of which this is a full and complete specification.

10 This invention relates to a new tool adapted to cut or sink circular or partially circular holes through or in any material capable of being cut with a saw and also for cutting out either wholly or partially round pieces.

15 In the accompanying drawings, which illustrate this new tool, Figure 1, Sheet No. 1, is a view in plan. Fig. 2, Sheet No. 1, is a view in elevation, partly in section, on line *xx* in Fig. 1. Fig. 3, Sheet No. 2, is a view in end elevation showing the cutter; and Fig. 4, Sheet No. 2, is a view in end elevation showing how the tool is fixed to the work.

25 Throughout the views similar parts are marked with like letters and figures of reference.

A is a bracket having a base 2, a pair of vertical plates 3, and a top plate 4. The top plate 4 has a hole in which the shank 5 of a screw C is journaled, and the said shank is provided with a collar 6 below the plate 4. The bracket A is pivoted to the work or material to be cut by a vertical pin or screw X, which passes through a hole in the base 2.

30 B is a block which is slidable vertically between the plates 3 of the bracket A, and 7 are plates secured to the block B and overlapping the edges of the plates 3, so that the block B is retained between the plates 3. The block B is actuated by a screw C, mounted in the top of the frame A and threaded into the said block. The screw C carries a milled flange D or its equivalent, by which it can be rotated to vary the vertical position of the block B in the frame A, and is extended upward beyond the said flange to carry a loose cap E, by which the tool can be steadied by the hand when in use. In the block B is mounted a bar F, which carries the cutter G. This bar, which is preferably of a square section, is adjustably fixed to the block B by means of set-screws *a a*, threaded in alternate lugs carried by the guide-plates on the block B,

through which the said block passes and adapted to impinge on the top of the said bar, so that the radius about which the cutter moves can be regulated according to the curve or circle it is desired to cut. On the one end of the bar F is mounted a bracket H, adapted to carry the cutter G and also a handle J for operating the tool. The cutter G, which consists of a thin sheet of steel having saw-like teeth on its cutting edge, is clamped to the bracket A by means of a plate H', adapted to carry the handle J. To the plate H' is fixed a strip K, of spring-steel, which is adapted to be flexed to any required curve (which must agree with the radius of the bar F) by means of two screw-bolts *k* and nuts *k'*, carried by arms *h* on the bracket H.

70 In addition to forming saw-teeth on the bottom edge of the cutter, teeth, preferably of a finer pitch, may be formed on its sides to assist the cutter in cutting up to a dead-stop and to clear the cut of sawdust. Obviously, also, the cutter may have teeth on its upper side, so that it can be reversed.

The bracket A is pivoted to the material to be cut by means of an ordinary wood-screw X, adapted to pass through a hole in the base of the bracket A. A convenient method of screwing the screw X home is as follows: The screw X is inserted in the hole from the base of the bracket A. A block, such as Y, having a knife-edge, such as *y*, adapted to engage with the slot in the top of the screw, is then inserted in the bracket A, so that it so engages with the screw X, and the sliding block B is then screwed down on to it. This locks the screw to the bracket and enables it to be screwed into (and also out of) the material by rotating the tool. After the screw X is screwed home the block B is raised to allow the block Y to be removed, when the tool is ready for use.

95 To enable the cutter G to clear itself, its teeth may "set" as in an ordinary saw, or the plate out of which it is made may be of a slightly greater thickness at its center than at its ends.

100 In use the tool is oscillated about its pivot through the required arc, the cutter being gradually lowered by means of the screw as the work proceeds. If a complete circle is to be cut, the tool is oscillated through a con-



venient arc and at the same time moved gradually round the pivot.

I wish it to be particularly understood that I do not limit myself to the precise details of construction hereinbefore described, and illustrated by the accompanying drawings, but that I hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An improved tool for cutting or sinking circular or partially circular holes through or in any material capable of being cut with a saw, consisting of a frame, means for pivoting it vertically to the material to be cut, of a block adjustable vertically in the said frame, of a bar mounted radially in the sliding block and of a cutter mounted on the said bar, as set forth.

2. An improved tool for cutting or sinking circular or partially circular holes through or in any material capable of being cut with a saw, consisting of a frame, means for pivoting it vertically to the material to be cut, of a block sliding vertically in the said frame and adapted to be adjusted therein by a screw, of a bar adjustable radially in the sliding block, of a cutter mounted on the said bar and of an operating-handle mounted on the radial bar, as set forth.

3. An improved tool for cutting or sinking

circular or partially circular holes through or in any material capable of being cut with a saw, consisting of a frame, means for pivoting it vertically to the material to be cut, of a block sliding vertically in the said frame, of a screw mounted in the frame and adapted to engage with the sliding block, of a bar adjustable radially in the sliding block, of a saw-like cutter mounted on the said bar and capable of being flexed thereon to the required curve, of an operating-handle mounted on the radial bar, as set forth.

4. An improved tool for cutting or sinking circular or partially circular holes through or in any material capable of being cut with a saw, consisting of a frame, means for pivoting it vertically to the material to be cut, of a block sliding vertically in the said frame, of a screw provided with a milled head or flange mounted in the frame and adapted to operate the sliding block, of a bar adjustable radially in the sliding block, of a saw-like cutter mounted on the said bar, of means for adjusting the curve of the cutter, of an operating-handle mounted on the end of the radial bar beyond the cutter, and of a steadying cap or handle mounted on the top of the adjusting-screw, as set forth.

WILLIAM BORRER, JUNR.

Witnesses:

WILLIAM H. JAMES,  
ALFRED K. CROAD.