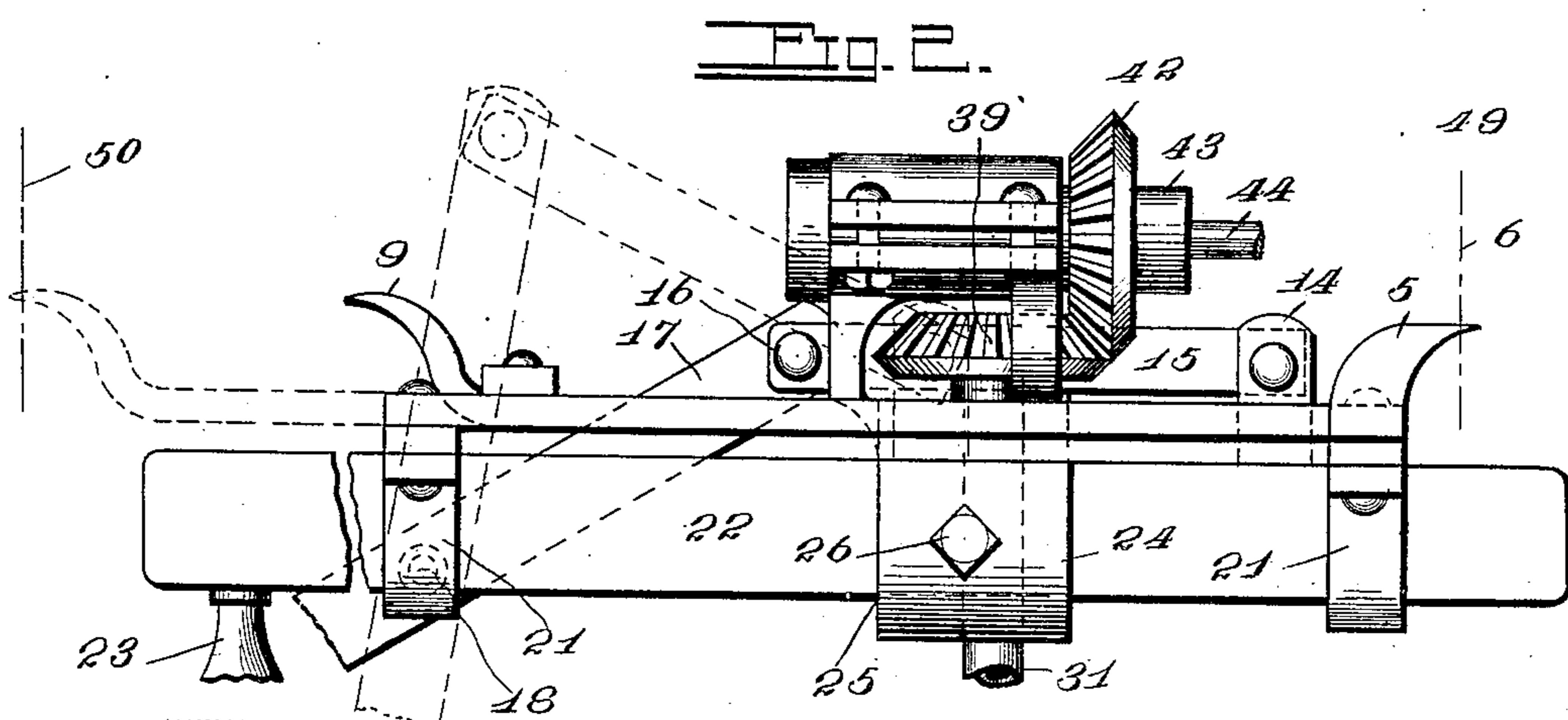
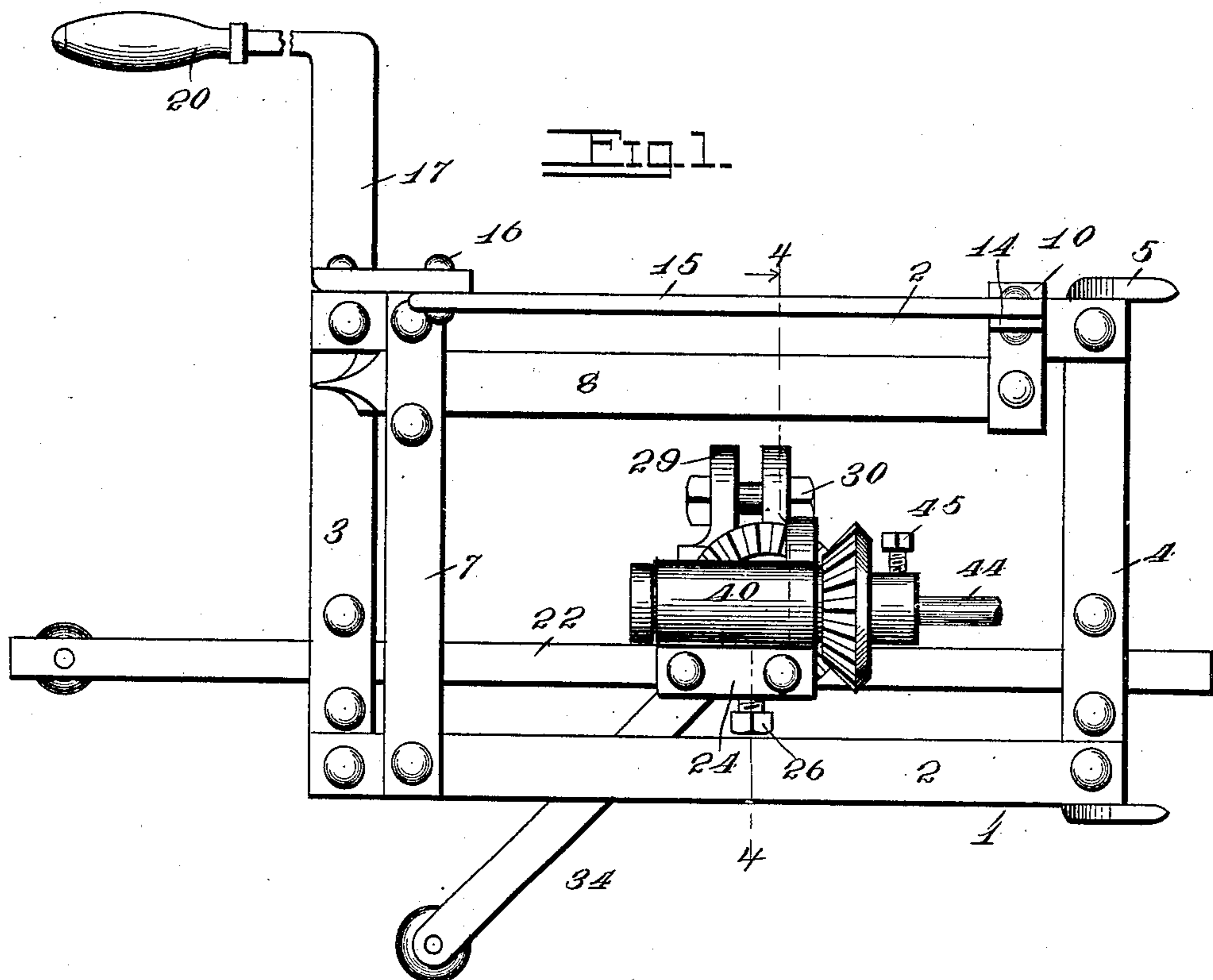


No. 829,844.

PATENTED AUG. 28, 1906.

J. W. CONE.
HAND BORING MACHINE.
APPLICATION FILED AUG. 26, 1905.

2 SHEETS—SHEET 1.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN W. CONE, OF BARNESBORO, PENNSYLVANIA.

HAND BORING-MACHINE.

No. 829,844.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed August 26, 1905. Serial No. 275,883.

To all whom it may concern:

Be it known that I, JOHN W. CONE, a citizen of the United States, and a resident of Barnesboro, in the county of Cambria and State of Pennsylvania, have invented a new and Improved Hand Boring-Machine, of which the following is a full, clear, and exact description.

This invention relates to hand boring-machines.

The object of the invention is to produce a machine of this class which is especially adapted for boring holes in joists for passing wires in electrical construction.

The invention consists in the construction and combination of parts to be more fully described hereinafter and definitely set forth in the claims.

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

Figure 1 is a plan of the machine. In this view the clamping-handle is represented as broken away. Fig. 2 is a side elevation, certain parts being broken away, as will appear. In this view dotted lines are shown representing the position of the joists. Fig. 3 is a rear end elevation, the clamping-handle being represented as broken away. Fig. 4 is a vertical cross-section taken on the line 4 4 of Fig. 1, and Fig. 5 is a plan of a bracket which constitutes a feature of the invention.

Referring more particularly to the parts, 1 represents a frame of substantially rectangular form constructed of parallel side bars 2 and transverse end bars 3 and 4. The end bar 4 has its extremities turned up, as indicated most clearly in Fig. 3, and bent out, as indicated in Fig. 2, so as to form pointed spurs or dogs 5, adapted to engage the vertical face 6 of a joist beneath the floor. Adjacent to the rear transverse bar 3 of the frame I provide an auxiliary transverse bar 7, which is riveted rigidly to the upper faces of the bars 2. Lying against the inner edge of the left side bar 2 I provide a clamping-bar 8, the rear extremity thereof being bent upwardly and rearwardly, so as to form a main dog or spur 9, somewhat similar to the spurs 5 referred to above. It should be understood that this bar 8 moves rearwardly in the operation of clamping the frame in position, sliding across the upper face of the bar 3 and across the under face of the bar 7. In this way the bars 3 and 7 operate as guides for

the bar 8, as will be readily understood. The forward extremity of the bar 8 is attached to a slide 10, the construction of which is most clearly shown in Fig. 4. It comprises a body 11, which is bent so as to form a rudimentary socket 12, receiving the extremity of the bar 8, as shown. The lower portion of this body 11 is extended beyond the outer edge of the adjacent side bar 2 and is bent upwardly, so as to form a nib 13 at its point which lies against its edge, as indicated. The upper portion of the slide is extended across the principal portion of the side bar 2 and is there bent upwardly, so as to form an ear 14. To this ear 14 there is attached a connecting-rod 15, which extends longitudinally of the frame; as shown most clearly in Fig. 1, and is pivotally attached at 16 to a lever 17. This lever 17 is preferably a bent lever, as indicated in Fig. 3, having its fulcrum at 18, where it is attached to an ear 19, formed by bending down the extremity of the cross-bar 3. At its extremity the lever 17 is provided with a suitable handle 20, which enables the same to be operated with facility.

To the under side of the cross-bars 3 and 4 guide-brackets 21 are attached, as shown in Fig. 2. On these brackets a main guide-bar 22 is slidably mounted. Near one extremity this guide-bar 22 is provided with a handle 23, projecting downwardly, as indicated in Fig. 2. At a suitable point on the main guide-bar 22 a bracket 24 is attached, said bracket being provided with a socket or opening 25, through which the guide-bar passes, as indicated most clearly in Fig. 4. By means of a set-screw 26 the bracket 24 may be bolted in any desired adjusted position upon the guide-bar, as will be readily understood. The construction of this bracket 24 is most clearly shown in Fig. 5. It comprises a body having substantially the form of a block and having a vertical bore 27. At one end this bracket is split, as shown at 28, and provided with oppositely-disposed ears 29, through which a clamping-bolt 30 passes, as shown.

Referring especially to Fig. 4, I mount in the bore 27 a vertically-adjustable sleeve 31. This sleeve may be clamped at any height desired by means of the clamping-bolt 30, just referred to. In the bore of this sleeve 31 there is rotatably mounted a spindle 32, the lower extremity whereof is enlarged to form a hub 33, in which a crank 34 is adjustably attached by means of a set-screw 35, as indicated most clearly in Fig. 3. In this con-

nection it should be stated that the hub 33 is provided with a transverse slot 36, through which the crank 34 may be slid longitudinally, as will be readily understood. By this means
 5 the virtual length of the crank 34 may be adjusted as desired. At its outer extremity the crank 34 is provided with a suitable handle 37. The upper extremity of the sleeve 31 is formed into a spider or housing 38, in which
 10 there is received a bevel gear-wheel 39, the same being rigidly attached to the aforesaid spindle 32. The upper portion of the housing 38 is formed into a bearing 40, having a horizontal axis, and in the bore of this bearing a stub-shaft 41 is rotatably mounted, said
 15 shaft carrying rigidly a bevel gear-wheel 42, which meshes with the aforesaid bevel gear-wheel 39. Beyond the bevel-gear 42 the stub-shaft 41 is formed into a chuck 43, adapted to receive a bit or similar boring-tool
 20 44, the same being secured in the chuck by means of a set-screw 45, as indicated in Fig. 1. The bearing 40 is preferably split, as indicated at 46 in Fig. 4, so as to present ears 47,
 25 connected by clamp-bolts 48.

In using the device in practice the frame 1 will be held in position between two adjacent joists, (indicated by the dotted lines at 49 and 50.) With the frame 1 held in a horizontal
 30 plane the handle 20 is forced downwardly, so as to throw the point of attachment 16 of the lever 17 toward the rear. In this way the connecting-rod 15 is actuated so as to force the main clamping-bar 8 in a rearward
 35 direction. In this way the point of the main spur or dog 9 is forced into the vertical face of the joist 50, and the spurs 5 are likewise forced into the vertical face 6 of the joist 49. Having applied the tool 44 in the chuck 43,
 40 the height of the tool will be adjusted by adjusting the sleeve 31 vertically and clamping the same by means of the bolt 30, as will be readily understood. By means of the handle 23 the main guide-bar 22 is then advanced
 45 so as to bring the point of the tool against the joist to be bored. Holding the tool in this

manner, the crank 34 is then rotated, and through the medium of the bevel-gears 39 and 42 its rotation is transmitted to the tool. By means of the clamping-bolt 26, described
 50 above, the position of the bracket 24 upon the bar may be adjusted as desired. Likewise the length of the crank 34 may be adjusted by means of the set-screw 35.

In Fig. 2 I represent the main clamping-
 55 bar in its rear clamping position in dotted outlines, and the lever 17 is likewise represented in a position corresponding thereto.

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

1. In a boring-machine, in combination, a frame, means carried thereby for supporting the same between two vertical faces, a bracket, means for guiding the same on said
 65 frame, a vertically-adjustable sleeve mounted in said bracket, a spindle rotatably mounted in said sleeve, a stub-shaft supported on said bracket and adapted to receive a boring-tool, bevel-gears for driving said shaft from
 70 said spindle, and means for driving said spindle.

2. In a boring-machine in combination, a frame having spurs rigid therewith and an extensible spur opposite said first spurs, a
 75 guide-bar slidably mounted longitudinally of said frame, a bracket attached to said guide-bar, a sleeve vertically adjustable in said bracket, a spindle rotatably mounted in said sleeve and having a crank rigid there-
 80 with, a chuck adapted to support a tool and having an axis of rotation substantially at right angles to the axis of said spindle, and gear-wheels connecting said spindle with said
 85 chuck.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN W. CONE.

Witnesses:

JAS. C. PATTERSON,
 SAMUEL D. THOMAS.