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H. BIBLE & L. A. ROBINSON.

WOOD BORING MACHINE.

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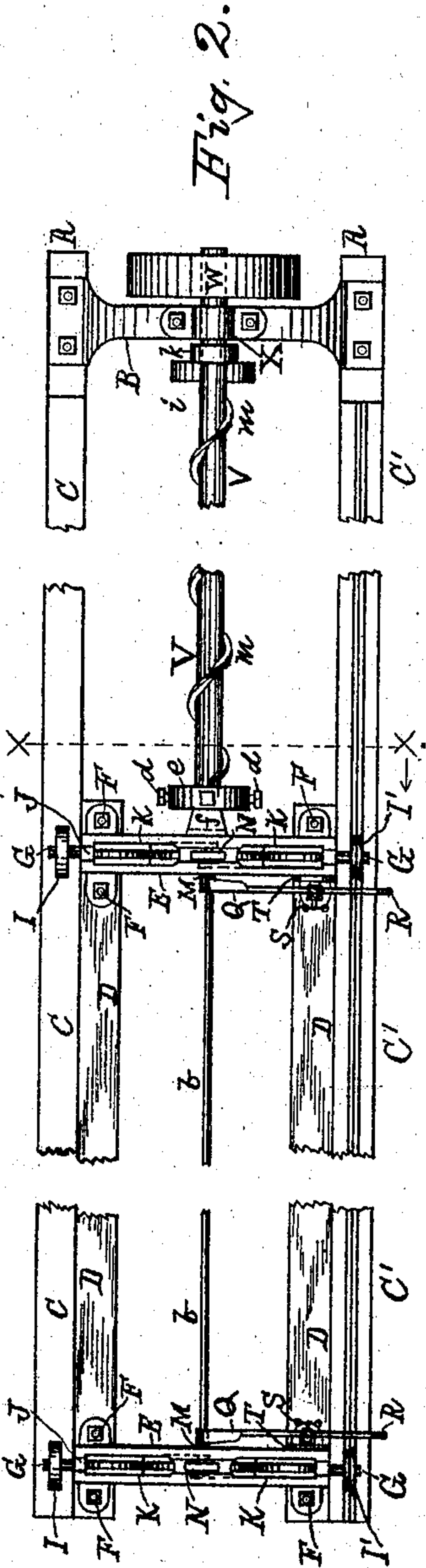


Fig. 2.

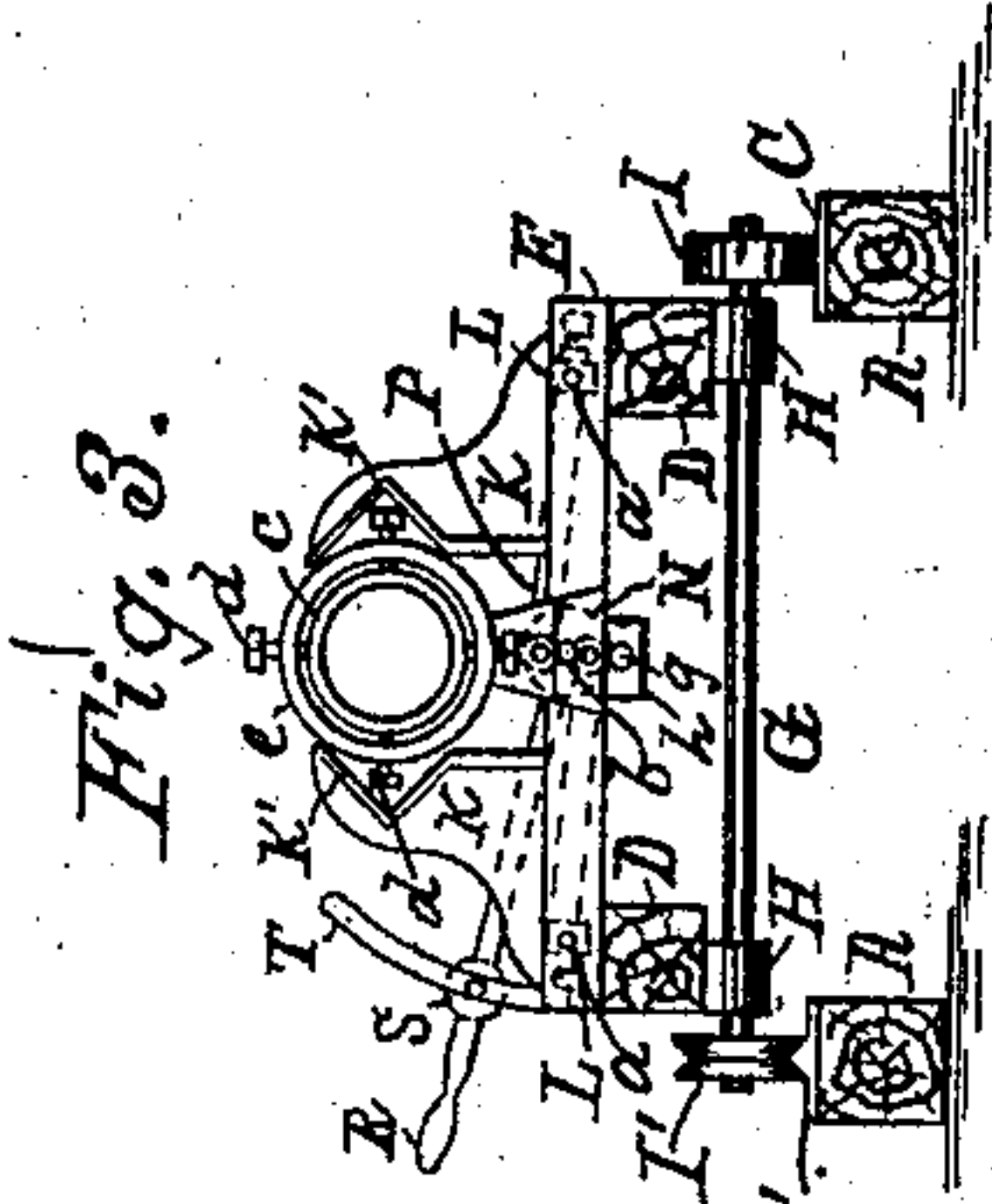


Fig. 3.

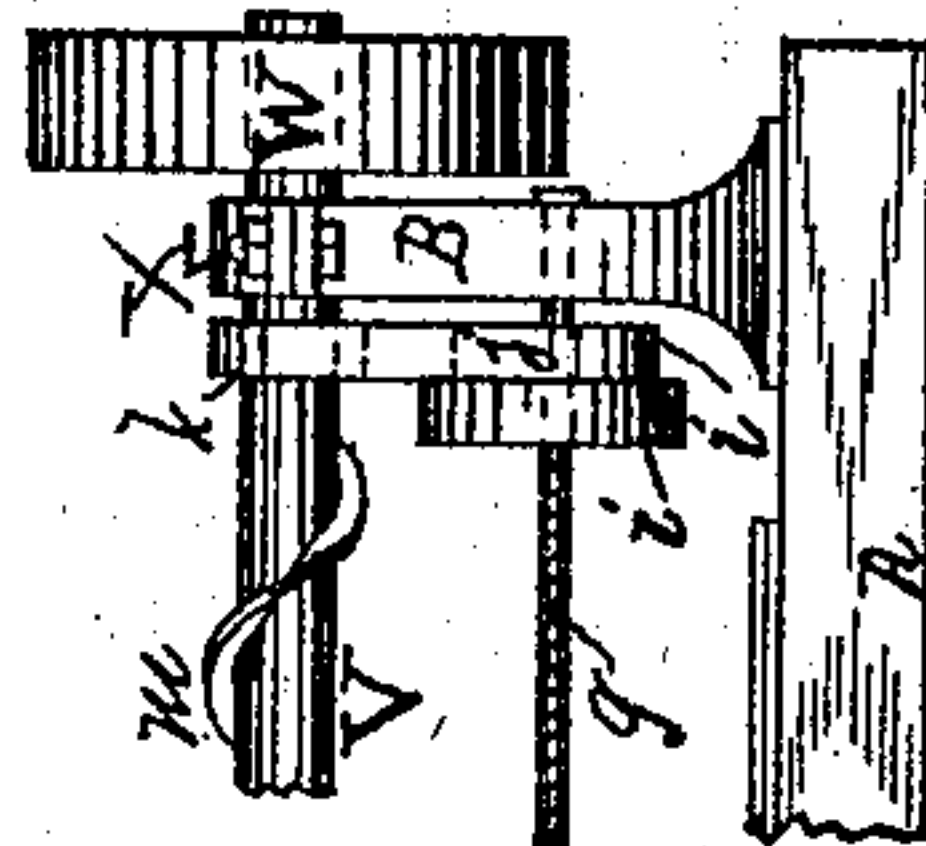


Fig. 4.

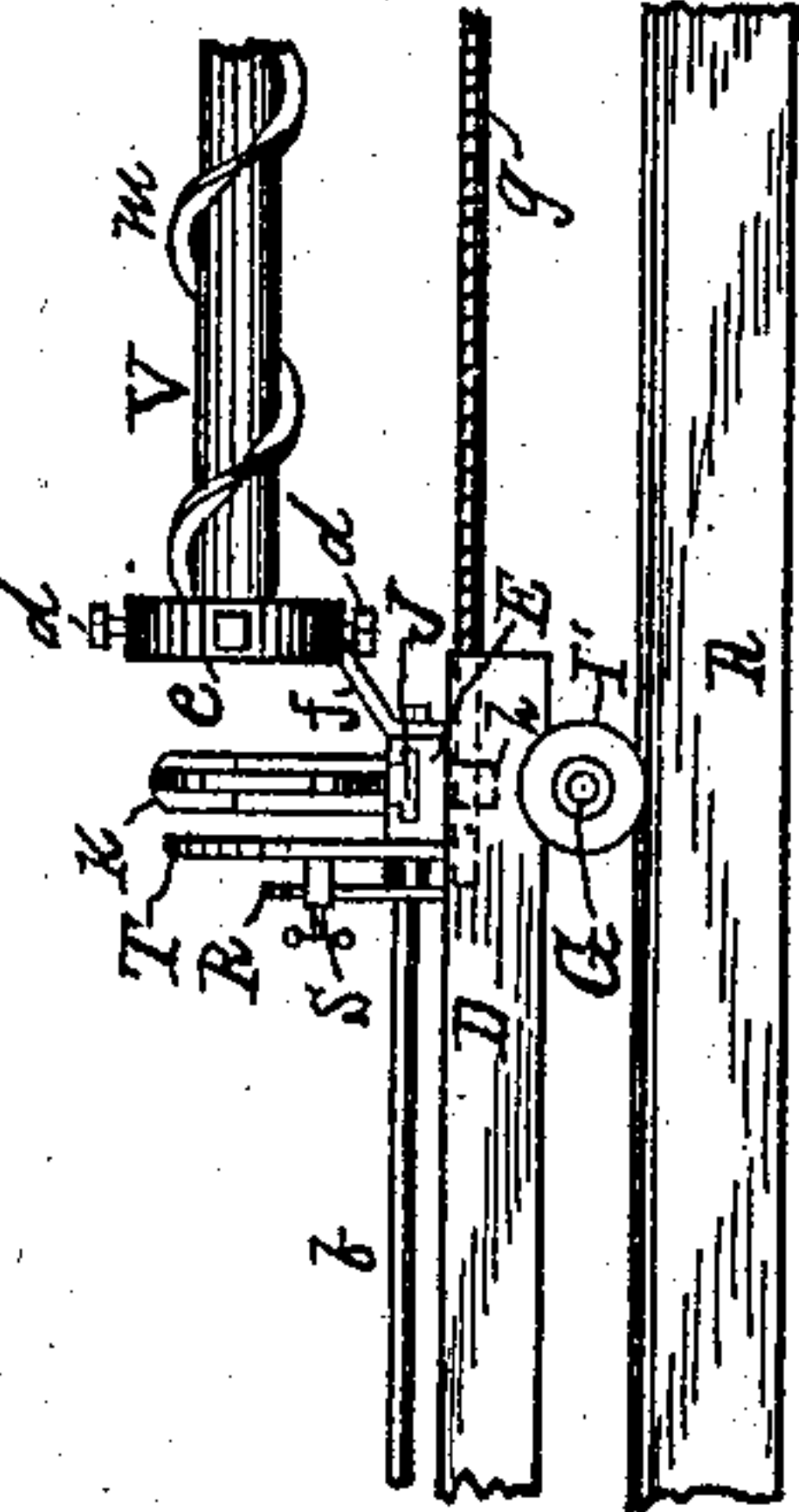


Fig. 5.

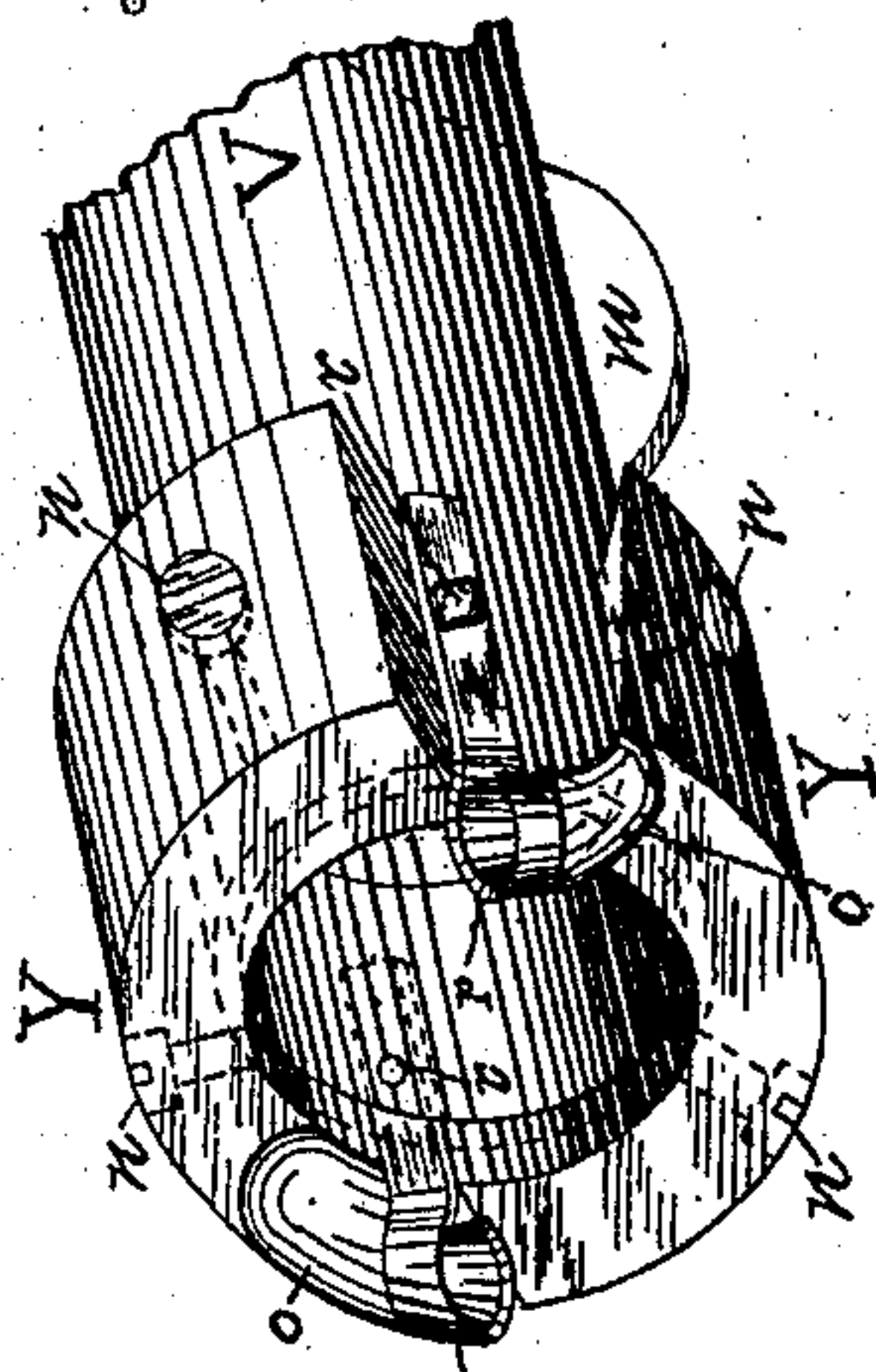


Fig. 6.

Witnesses

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# UNITED STATES PATENT OFFICE.

HUNLEY BIBLE AND LEE A. ROBINSON, OF SHERMAN, TEXAS.

## WOOD-BORING MACHINE.

No. 815,256.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed August 12, 1905. Serial No. 273,954.

*To all whom it may concern:*

Be it known that we, HUNLEY BIBLE and LEE A. ROBINSON, citizens of the United States, residing at Sherman, in the county of Grayson and State of Texas, have invented certain new and useful Improvements in Wood-Boring Machines, of which the following is a specification.

Our invention relates to improvements in wood-boring machines, and has special reference to a device of this class which is especially adapted to bore holes of extreme length in columns or like structural members by cutting away only a portion of the wood forming hole in same.

Among numerous objects attained by this invention and readily understood from the following specification and accompanying drawings, included as a part thereof, is the production of a simple and inexpensive boring apparatus embodying essential features of adaptability, utility, and general efficiency which render the apparatus rapid and positive in action, insures free delivery of the borings from the bore-hole, and renders it practicable to form holes of extreme length and size in columns, beams, or like structural members.

To these ends the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in form, proportion, size, and minor details may be made within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of our improved wood-boring machine shown with the center portion of the spindle, frame, car, and other parts broken away. Fig. 2 represents a top plan view of the same. Fig. 3 is a vertical transverse view on the line X X, Fig. 2. Fig. 4 is an enlarged view in perspective of the boring-head employed and manner of attaching same to boring-tube, and Fig. 5 is an enlarged view of the device employed for opening and closing the clamps that hold the piece to be bored.

The framework of our improved wood-boring machine consists of the horizontally-disposed sills A, which rest firmly upon a suitable foundation. They are joined together at their front ends by the bracket B and other-

wise secured by suitable through-bolts. To the top side of these sills are firmly bolted the tracks C and C', upon which travels a timber-carrying car D, that comprises a bed composed of horizontally-disposed timbers secured parallel to each other by the transversely-disposed bases of head-blocks E, attached by bolts F adjacent their ends. The bed thus formed rests upon axles G, that turn in boxes H, and at the end of each axle are secured metal wheels I and I', the wheels I' being grooved to fit the inverted V, formed centrally on the top side of track C' and by which the car is retained on the track.

The car thus constructed is about one-half the length of sills A, admitting of the car traveling forward or back about its length. The head-blocks consist of a bed or base E, internally grooved their entire length, as at J, into each of which are slidably fitted two clamps K, that are notched, as shown at K', enabling them to securely but removably hold either round or square timber in position while being bored. Each of the clamps K is provided on the bottom side near its outer end with a downwardly-projecting lug L, that carries a pin a. Passing through each head-block and extending from one to the other is a shaft b, on which are rigidly mounted sleeves M, that extend within the inner side wall of the base of each head-block and carry disks N, provided at opposite sides and near the periphery with projecting pins O. To each of these pins is pivoted a rod P, that extends from the pin O to pins a. Sockets are formed on radial arms Q, projecting from the ends of sleeves M, in which are secured the hand-levers R. By forcing these levers down the clamps K are drawn together against the piece of round or square timber to be bored, and by forcing them upward the clamps are moved apart, thus releasing the finished piece. Each handle is provided with a suitable fastening S, engaging segment T for retaining the handle and clamps K in any desired position.

The boring mechanism consists of a spindle or tube V somewhat smaller and longer than the hole to be bored. This spindle is formed tubular to afford a way inwardly and longitudinally thereof for the passage or the core not removed by the cutting-head, and it is rotatably mounted in a horizontal position on the bed or sills A and is driven by means of a drive-pulley W, which is fixedly mounted at the end of same and rotatably supported



at this end in bearing X, arranged on the bracket B. To the forward end of spindle V is secured a collar Y, preferably in two halves. The outer diameter of this collar fits the inner guide-ring *c*, that is held adjustably in position by screws *d* passing through the sides of outer ring *e*, which is provided with a bracket *f*, extending downward and secured centrally to the base of head-block E. The car D, carrying the piece of timber to be bored, is advanced by means of a horizontal screw *g*, that is journaled at one end in the bracket B, the other end being fitted to a nut *h* and secured centrally to the lower side of head-block base E. Near the end of screw adjacent to the bracket B are secured pulleys *i* of different diameter, over one of which a belt *j* passes and thence upward and over a corresponding pulley *k*, secured to the spindle V, by which as the spindle revolves the screw is driven and the car drawn slowly forward.

The boring mechanism, as before stated, comprises a tubular shank or spindle V, its inner diameter governing the size of core that will be left, suitable spiral ribbons or threads *m* wrapped thereabout to form a double helical thread along the shank, and a cutter-head comprising a collar Y in two halves, removably attached to the forward end of the tube by screws *n*, each half of the said collar being provided with a forwardly-projecting lip *o*, conforming in shape to the outer circumference of cutting-bits *p* and forming a support for same. The two cutting-bits are substantially U-shaped, formed with oppositely-disposed cutting-lips. The curved parts of these bits are of suitable width to cut an annular opening large enough to receive the body of auger freely and to admit of the remaining core passing loosely within the body of auger, and they are secured to the outside of tube by suitable screws *r*.

To bore a hole longitudinally in the center of a column or the like, an operation of the apparatus would occur substantially as follows: The car is first set in retracted position, and the column to be bored is then suitably supported and clamped by the head-blocks concentric with the boring-spindle. Power is then applied to pulley W, so as to rotate the auger, which simultaneously turns the

screw *g*, that advances the column against the cutting-bits until a hole of any desired depth is formed, the chips being carried out by the spiral threads wrapped about the pipe and a core of wood loosely fitting the inside of pipe passing within it.

It will be noted that with our device we cut away only a small portion of wood generally required for producing a hole of large size, but remove it in round straight lengths, adapted for use as hand-rails and similar purposes.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States of America, is—

1. In a wood-boring machine, the combination with a hollow auger-spindle, of a cylindrical cutter-head secured on the end thereof, said cutter-head consisting of two parts each provided with a projecting lip, U-shaped cutters secured to the spindle, said lips conforming to the outer circumference of the cutter.

2. In a wood-boring machine, the combination with a hollow auger-spindle, a cylindrical cutter-head secured on the end thereof, said cutter-head consisting of two parts each provided with a projecting lip, cutters secured to the spindle, said lips conforming to the outer circumference of the cutters, of a car acting in conjunction with the cutter and carrying adjustable clamping means, and a guiding-ring carried by the car and adapted to embrace the cutter.

3. In a wood-boring machine, the combination with a car carrying clamping means and means for moving the car, of a hollow auger-spindle, a cylindrical cutter-head secured on the end thereof, said cutter-head consisting of two parts each provided with a projecting lip, U-shaped cutters secured to the spindle, said lips conforming to the outer circumference of the cutter, and a guiding-ring mounted on the car adapted to embrace the cutter.

In testimony whereof we affix our signatures in presence of two witnesses.

HUNLEY BIBLE.  
LEE A. ROBINSON.

Witnesses:

J. P. GEREN,  
J. P. DEDERICK.