

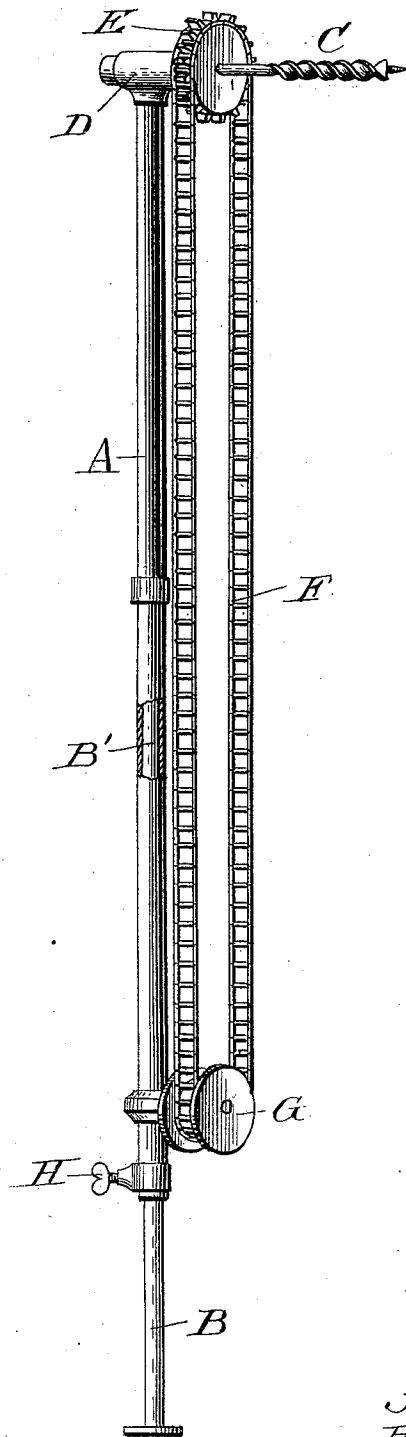
No Model.)

J. G. & R. H. HENDERSON.

MACHINE FOR BORING JOISTS FOR ELECTRIC LIGHT WIRING.

No. 543,625.

Patented July 30, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN G. HENDERSON AND ROBERT H. HENDERSON, OF CHICAGO, ILLINOIS.

MACHINE FOR BORING JOISTS FOR ELECTRIC-LIGHT WIRING.

SPECIFICATION forming part of Letters Patent No. 543,625, dated July 30, 1895.

Application filed October 3, 1894. Serial No. 524,846. (No model.)

To all whom it may concern:

Be it known that we, JOHN G. HENDERSON and ROBERT H. HENDERSON, of Chicago, Cook county, Illinois, have invented a new and useful Machine for Boring Joists for Electric-Light Wiring, which is made and used substantially as set forth hereinafter, and shown in the accompanying drawing, which is a perspective view of the machine.

10 The object of this invention is to enable the operator to stand on the floor beneath and bore holes in the joist overhead for the purpose of stringing electric-light wires.

15 To enable others skilled in the art to make and use our invention we proceed to describe its construction and operation.

20 The apparatus is made with a long handle or column A, having an extensible part B. These are made, preferably, of gas-pipes, with part B forming a support and fulcrum and sliding up inside of part A, so it may be drawn out to suit the height of rooms, and a clamp-screw H adapted to hold this as adjusted and the head at the proper height for boring, as
25 desired.

The handle or column A bears head D on its top end, in which is mounted a shaft held securely and free to rotate. This shaft bears a removable boring-bit C held securely, and
30 a sprocket-wheel E to turn the bit by.

The wheel E bears a link-chain belt F, which passes down over an idler G on the column A below, so the bit may be turned for boring by drawing down the belt by hand on one side,
35 and withdrawn by drawing the belt down on the other side.

Any suitable form of wheel and belt may be used.

40 In using this machine the operator grasps the column with his left hand and presses the bit against the joist, and with his right hand grasps the nearest chain and draws down. This imparts the motion to the bit and bores the hole. Then by grasping the chain or belt
45 on the other side the bit is turned backward and comes out.

All machines previously used for boring joists for electric-light wiring have used clamps on the joist to hold the machine in
50 place, a screw-feed to force the bit through

the joist, and a crank to transmit motion to the bit.

The adjustment of the clamps requires time and labor, and the running back of the screw-feed requires as much time and labor as it takes to bore the hole; and the complicated machinery necessary to run a force screw-feed makes the chain run so hard that it is necessary to use a crank to give the operator leverage. The weight of these appliances makes it difficult to adjust the machine to its work far above the head of the operator. The result is that there is none of them in use or on sale in Chicago at the present time.

Having thus set forth the state of the art at the present time, we will proceed to show what we claim to have accomplished in the advancement of the art by our invention.

Our machine is a light portable tool to be held in the hand and rest on the floor. Used thus it becomes a lever of the third class. The floor being the fulcrum, the working-point being the bit, and the power being applied to the middle portion of the shaft by the hand of the operator. This pressure of the hand, we have discovered, is amply sufficient to force the bit through the joist when being rotated by drawing down on the chain and draw it out again when the hole is bored through the joist. This enables us to dispense with the clamps on the joist, the screw-feed, and the crank, together with the time and labor required to adjust the clamps and run back the screw-feed, and leaving the bit perfectly free of cogs or screws. It runs so easily that a direct pull on the chain is amply sufficient to turn it and causes it to run much faster and steadier than can be done with a crank.

The weight of the machine is so small that it can be moved from one place to another with one hand while the other holds the chain ready to start the instant the bit touches the joist, thus multiplying the speed many times.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination in an overhead portable boring machine of an extension adapted to rest on the floor and a column adjustable thereon, provided at the top with a bearing for the rotatable bit shank, a sprocket wheel directly

secured to the bit shank, a revoluble sprocket idler at the lower end of the column, and an endless driving chain belt connecting the sprockets.

- 5 2. In a boring machine a portable handle or column provided with an adjustable extension below and a head above bearing a rotatable shaft holding a boring bit and a chain or belt

extending down to turn the bit by, substantially as set forth.

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