

No. 668,657.

Patented Feb. 26, 1901.

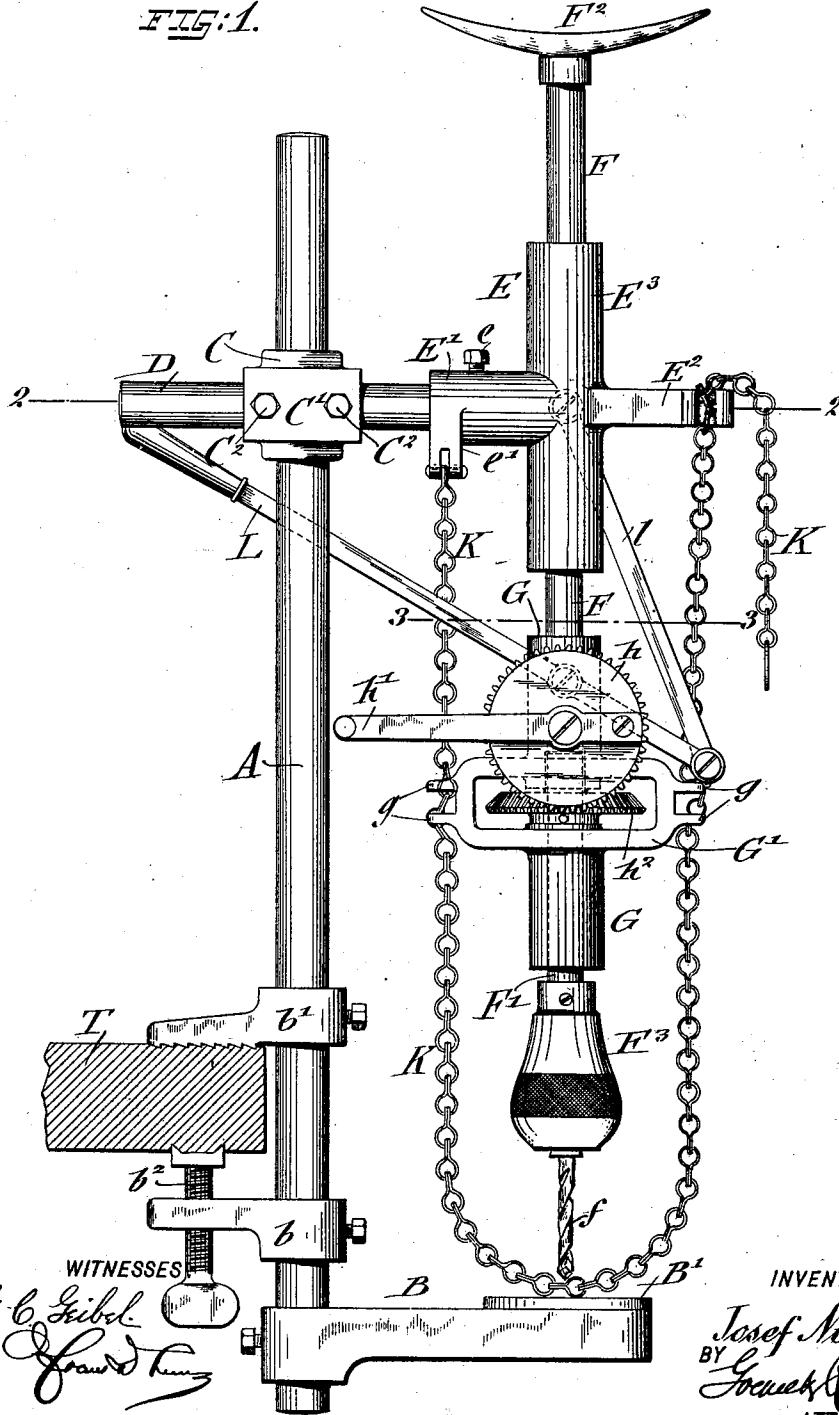
J. NITSCHMANN.
BORING DRILL.

(Application filed Apr. 24, 1900.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.



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2 Sheets—Sheet 2.

FIG: 2.

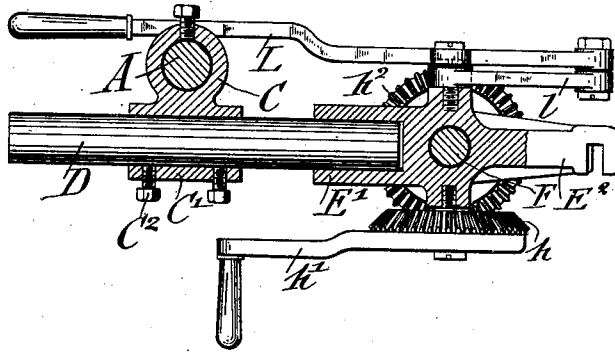


FIG: 3.

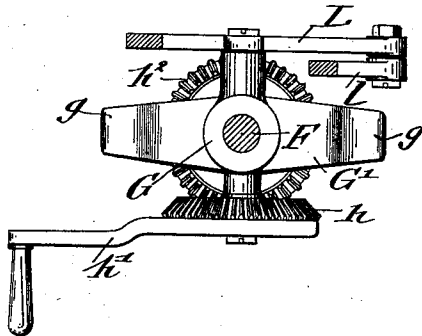
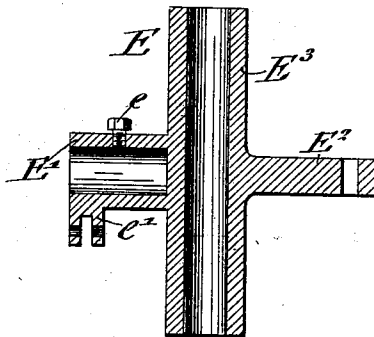


FIG: 4.



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JOSEF NITSCHMANN, OF NEW YORK, N. Y.

BORING-DRILL.

SPECIFICATION forming part of Letters Patent No. 668,657, dated February 26, 1901.

Application filed April 24, 1900. Serial No. 14,098. (No model.)

To all whom it may concern:

Be it known that I, JOSEF NITSCHMANN, a citizen of the Empire of Austria-Hungary, residing in the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Boring-Drills, of which the following is a specification.

The boring-drill for which Letters Patent of the United States No. 599,914 were granted to me on March 1, 1898, while practically operative was found to be expensive and somewhat more complicated than desirable for practical purposes mainly for the reason that besides the driving bevel-gear, a toothed segment and a tube provided with rack-teeth for feeding the drill forward were employed.

The object of the present invention is to provide a boring-drill in which the toothed segment and rack gear is entirely dispensed with, so that the construction is simplified and the cost of the drill much reduced.

The invention consists in certain novel combinations of parts by which the desired object is accomplished, which will be more fully described hereinafter and finally claimed.

In the accompanying drawings, Figure 1 represents a side elevation of my improved boring-drill. Figs. 2 and 3 are respectively horizontal sections on lines 2-2 and 3-3, Fig. 1, and Fig. 4 is a vertical central section of the cross-piece of the boring-drill.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a vertical standard the lower end of which is applied, by means of a pair of clamping-jaws $b b'$ and a threaded clamping-screw b^2 , to a table, bench, or other support T. To the lower end of the standard A is applied a fixed arm B, which carries at its outer end a table or other supporting-plate B', on which the work to be drilled is placed. To the upper end of the supporting-standard A is applied a vertically-adjustable head C, that is provided with a horizontal sleeve C', in which is supported an adjustable arm D, that is secured in the sleeve by means of clamping-screws C². To the outer end of the arm D is applied the socket E' of a cross-piece E, said socket being provided with a clamping-screw e and recessed ears e' , to which is pivoted a chain K

of considerable length for supporting any piece of work which is too long to be supported in the table B'. The cross-piece E is further provided with an arm E², diametrically opposite to the socket E', said arm being recessed at its outer end for supporting the opposite end of the retaining-chain K, as shown in Fig. 1. The central portion or sleeve E³ of the cross-piece E serves to guide the upper portion F of the drill-spindle FF'. Said upper portion F is provided at its lower end with a sleeve G, having a transversely-enlarged portion or frame G', which is provided at its sides with parallel lugs $g g$, which serve for engaging the retaining-chain K whenever the same is applied to a piece of work, said lugs steadying the chain and preventing it from interfering with the operating parts of the drill. The lower section F' of the drill-spindle is seated at its upper end in a recess of the part G and is retained in position in the frame by a bevel gear-wheel h^2 , which is located in the frame G' and secured to the spindle by a set-screw. At its lower end the lower section F' of the drill-spindle is provided with a drill-chuck F³ of any suitable construction, into which the drill f is inserted. The upper end of the sleeve G is provided on one side with a short shaft or stud, on which is supported a bevel gear-wheel h , provided with a hand-crank h' , said bevel-gear meshing with the second bevel-gear h^2 . The sleeve is furthermore provided at its side opposite to the short shaft with a stud, to which is fulcrumed a hand-lever L, the lower end of which is connected by a pivot-link with a pivot-screw on the cross-piece E, as shown in Fig. 2.

When the drill is applied to the work, it may be adjusted either vertically or transversely, as required for various kinds of work. In any position it is supported on the upright standard A, the left hand holding the hand-lever, while the right hand operates the crank for the bevel-gears, by which rotary motion is imparted to the drill. The drill-spindle and connected parts may be removed from the horizontal supporting-rod, and the drill can then be used as a breast-drill, in which case the breastplate F³ rests against the chest, while the chain holds the work, the hand-lever and bevel-gears being operated in the same manner as before described.

By the construction described, and mainly by the construction of the cross-piece E, the boring-drill is greatly simplified and adapted more fully to its work when used either as a standing drill or as a breast-drill. It can by reason of its simple construction be furnished at a low cost, thus rendering it available in many cases where my improved drill, hereinbefore referred to, would be too expensive.

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

1. In a hand-drill, the combination of an upright standard, a horizontal rod supported on said standard, a cross-piece attached to the end of said supporting-rod and provided with a central sleeve, a drill-spindle guided in said sleeve and formed of an upper sliding section and a lower rotary section, a hand-lever fulcrumed to the upper section, a pivot-link connecting the lower end of said hand-lever with the cross-piece, and means for imparting rotary motion to the lower section of the drill-spindle, substantially as set forth.

2. In a hand-drill, the combination of a cross-piece provided with a central guide-sleeve, a socket extending at one side and a recessed arm extending at the other side of the same, a drill-spindle composed of an upper sliding section and a lower rotary section, a hand-lever fulcrumed to the upper section of the drill-spindle, a pivot-link connecting said hand-lever with the cross-piece, a frame at the lower end of the upper section of the drill-spindle, provided with lugs at both sides, a chain attached to the socket of the cross-piece and adapted to be applied to the lugs of the frame and to the recessed arm of the cross-piece, and means for rotating the lower section of the screw-spindle, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOSEF NITSCHMANN.

Witnesses:

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M. H. WURTZEL.