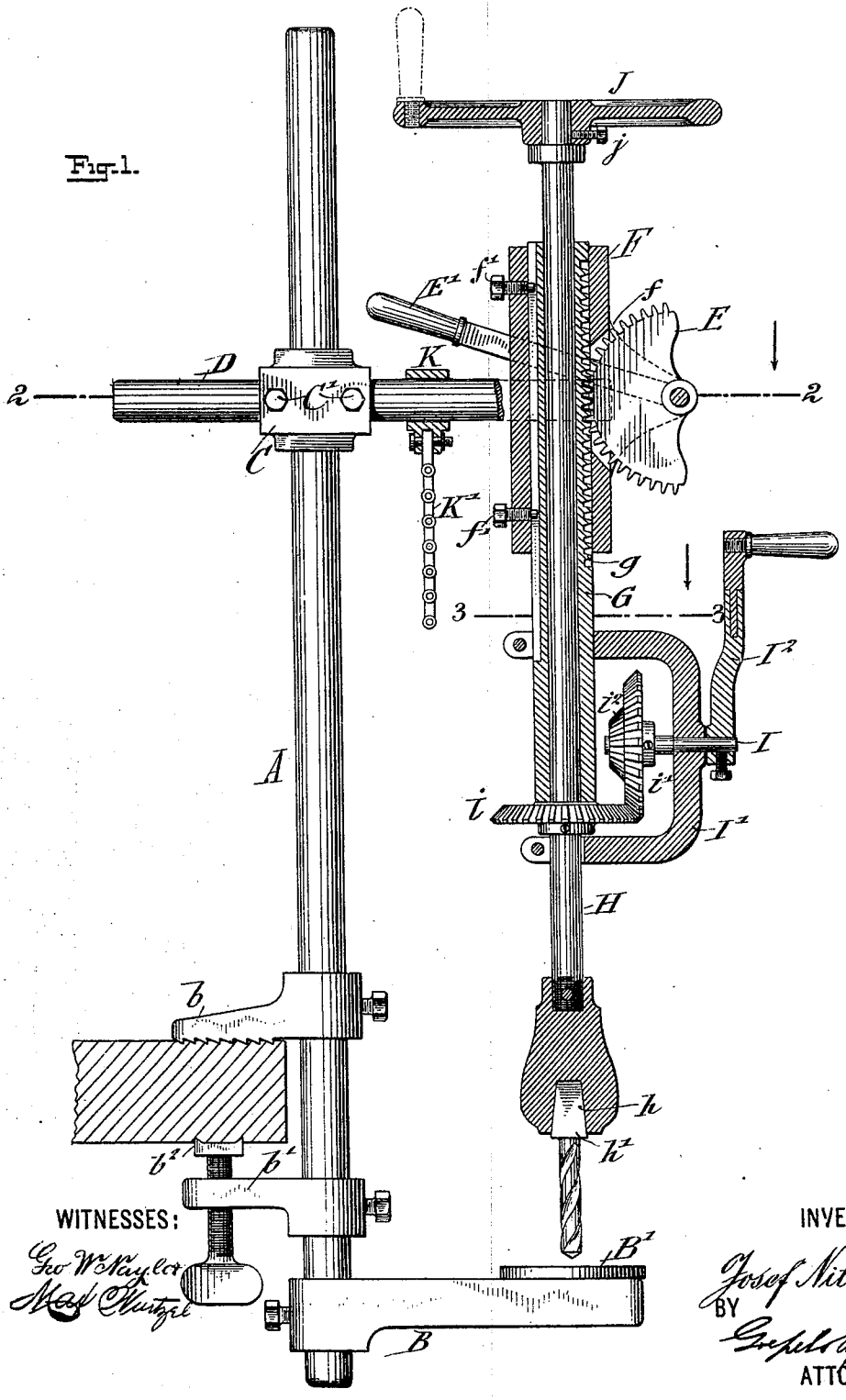
(No Model.) 2 Sheets—Sheet 1.

J. NITSCHMANN.

BORING DRILL.

No. 599,914. Patented Mar. 1, 1898.

Fig. 1.



WITNESSES:

Geo. W. Taylor

Max Mutzel

INVENTOR

Josef Nitschmann

BY

Goepel & Wagner

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

2 Sheets—Sheet 2.

J. NITSCHMANN.

BORING DRILL.

No. 599,914. Patented Mar. 1, 1898.

Fig. 2.

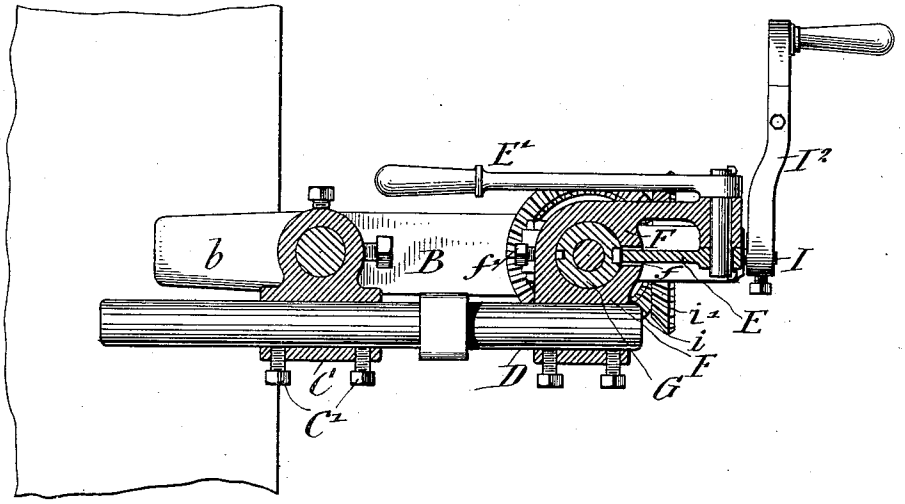
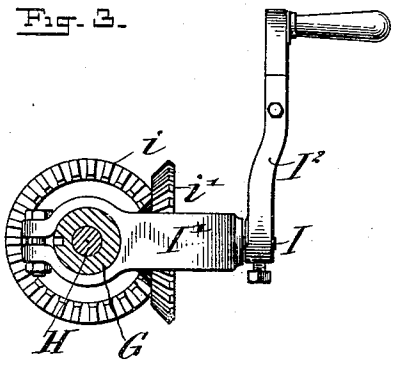


Fig. 3.



WITNESSES:

Geo. W. Naylor.

Max Wurtzel

INVENTOR

Josef Nitschmann

BY

Gopel & Pregener

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEF NITSCHMANN, OF NEW YORK, N. Y.

BORING-DRILL.

SPECIFICATION forming part of Letters Patent No. 599,914, dated March 1, 1898.

Application filed June 21, 1897. Serial No. 641,555. (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, county, and State of New York, have invented certain new and useful Improvements in Boring-Drills, of which the following is a specification.

This invention relates to a hand-drill; and the object of the same is to construct a device of this character that may be secured to any convenient object and which may be also used as a breast-drill without having to lean the weight of the operator against it or to cause the drill to improperly enter the work.

The invention consists of a supporting-rod which is provided with a suitable clamp or other device whereby the drill can be clamped to a table or other support, a slotted sleeve carried by said supporting-rod, a toothed segment pivoted to said sleeve and provided with a hand-lever, a longitudinally-adjustable tube guided in said sleeve and provided with a series of teeth engaged by the teeth of said segment, a bracket supported by said tube, a drill-spindle held in said tube, and gearing applied to said drill-spindle and the bracket, said gearing being driven by a hand-crank, as will be hereinafter fully described, and then particularly set out in the claims.

In the accompanying drawings, Figure 1 is an elevation, partly in vertical section, of my improved hand-drill. Fig. 2 is a transverse section on line 2 2 of Fig. 1. Fig. 3 is a similar section on line 3 3 of Fig. 1.

Referring to the drawings, A represents the supporting-rod, to the lower end of which are applied a pair of clamping-jaws b b', in one of which works a screw-threaded clamping-jaw b^2, which may be turned by means of a suitable head or other means toward the opposite jaw b, whereby the hand-crank may be clamped to the table, bench, or other support. Extending from the lower end of the supporting-rod A is a fixed arm B, which is provided at its outer end with a table or supporting-plate B', on which the work to be drilled is supported. Adapted to slide upon the upper end of the supporting-rod A is a vertically-adjustable head C, in which is arranged an axially-adjustable arm D, that is secured in and to said head by means of clamping-screws C'. Upon the outer end of the arm D is adjustably secured a sleeve F, which is provided with a pivoted toothed segment E, which may be rotated on its pivot by means of a hand-lever E'.

By means of the construction above described the device may be adjusted vertically, horizontally, and swung transversely, so as to accommodate the said drill to various kinds of work. The toothed portion of the segment E works through a longitudinal slot f, which is formed in one side of the sleeve F. In working through the slot f the toothed segment engages operatively with the longitudinal series of teeth g, which are cut into or formed in the elongated tube G, which tube is arranged to slide in said sleeve F.

By the end adjustment of the tube G in the sleeve F the same may be set firmly in position by means of suitable clamping-screws f', which are screwed into correspondingly screw-threaded openings in the said sleeve F and frictionally engage at their inner ends with a groove in the tube G. The usual socket h is applied to the lower end of the drill-spindle H, which is journaled in said tube G, said socket receiving the desired drill h', which operates upon the work which is supported upon the table B'. A collar K is loosely sleeved upon the arm D and carries a chain K' of considerable length for supporting the end of a piece of work which is too long to be supported by the table B'. The drill-spindle H may be revolved through the medium of a bevel gear-wheel i, which is fixed to said spindle H and intermeshed by a gear-wheel i', journaled on a short shaft I, which is mounted in a bearing of a U-shaped bracket I', which is fixed to and supported on said tube G, said shaft I and the gearing being operated by a hand-crank I^2, or the drill-spindle may be rotated by a hand-wheel J, which is secured by a screw j to the upper end of the same. The operator in turning the hand-wheel J turns the drill h' at a corresponding rate of speed; but when the crank I^2 is turned the drill is turned at a greater or less rate of speed corresponding to the dimensions and proportions of the gear-wheels i i'. The shaft I carries a second gear-wheel i^3, which is fixed to or integral with the gear-wheel i'. This gear-wheel i^3 is of smaller diameter than the gear-wheel i' and is adapted

to be brought into mesh with the gear-wheel i by loosening the set-screw of the gear-wheel i' and sliding the same, together with the smaller gear-wheel i^2, along the shaft I to one side. The bracket I′ is then loosened upon the shaft G and lowered until the small gear i^2 comes into mesh with the gear-wheel i. By this construction and arrangement the power may be quickly and easily increased.

When the operator wishes to work with the drill like a breast-drill, the set-screw j, which secures the hand-wheel J to the drill-spindle h is loosened, so that the said operator can press gently, but not too forcibly, against the hand-wheel J when the crank I^2 is turned for turning the drill, the necessary amount of pressure being imparted to the drill and the drill-spindle by means of the hand-lever E′, which is operated by the left hand, while the crank I^2 is operated by the right hand.

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

1. In a hand-drill the combination of a support, supporting-arms, one of which is provided with a work-table, a slotted sleeve fixed to the other of said arms, a toothed segment pivoted to the slotted sleeve and provided with a hand-lever, a toothed tube arranged to slide in said sleeve, the teeth of said tube being engaged by the teeth of said segment, a drill-spindle journaled in said tube and provided with a drill head or socket, and means for rotating said drill-spindle, substantially as set forth.

2. In a hand-drill, the combination of a supporting-rod, means for applying said supporting-rod to a table or other support, arms extending from said supporting-rod, one of said arms being provided with a work-table, a slotted sleeve fixed to the other of said arms, a toothed segment pivoted to the slotted sleeve and provided with a hand-lever, said segment working through said slot, a tube arranged in said sleeve, and provided with a series of teeth engaged by said toothed segment, a drill-spindle journaled in said tube and provided with a drill head or socket, a bracket arranged on said tube, a shaft journaled in said bracket and provided with a hand-crank, gearing applied to said shaft and the drill-spindle, and a hand-wheel applied to the upper end of the drill-spindle, substantially as set forth.

3. In a hand-drill, the combination of a supporting-rod, means for applying said supporting-rod to a table or other support, arms extending from said supporting-rod, one of said arms being provided with a work-table, a slotted sleeve fixed to the other of said arms, a toothed segment pivoted to the slotted sleeve and provided with a hand-lever, said segment working through said slot, a tube arranged in said sleeve, and provided with a series of teeth engaged by said toothed segment, a drill-spindle journaled in said tube and provided with a drill head or socket, a bracket arranged on said tube, a shaft journaled in said bracket and provided with a hand-crank, gearing applied to said shaft and the drill-spindle, and a hand-wheel applied to the upper end of the drill-spindle, a second gear-wheel of smaller diameter applied to said shaft and adapted to be brought into mesh with the gear-wheel on the drill-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:
JAMES BEVERIDGE,
GEO. W. JAEKEL.