

(No Model.)

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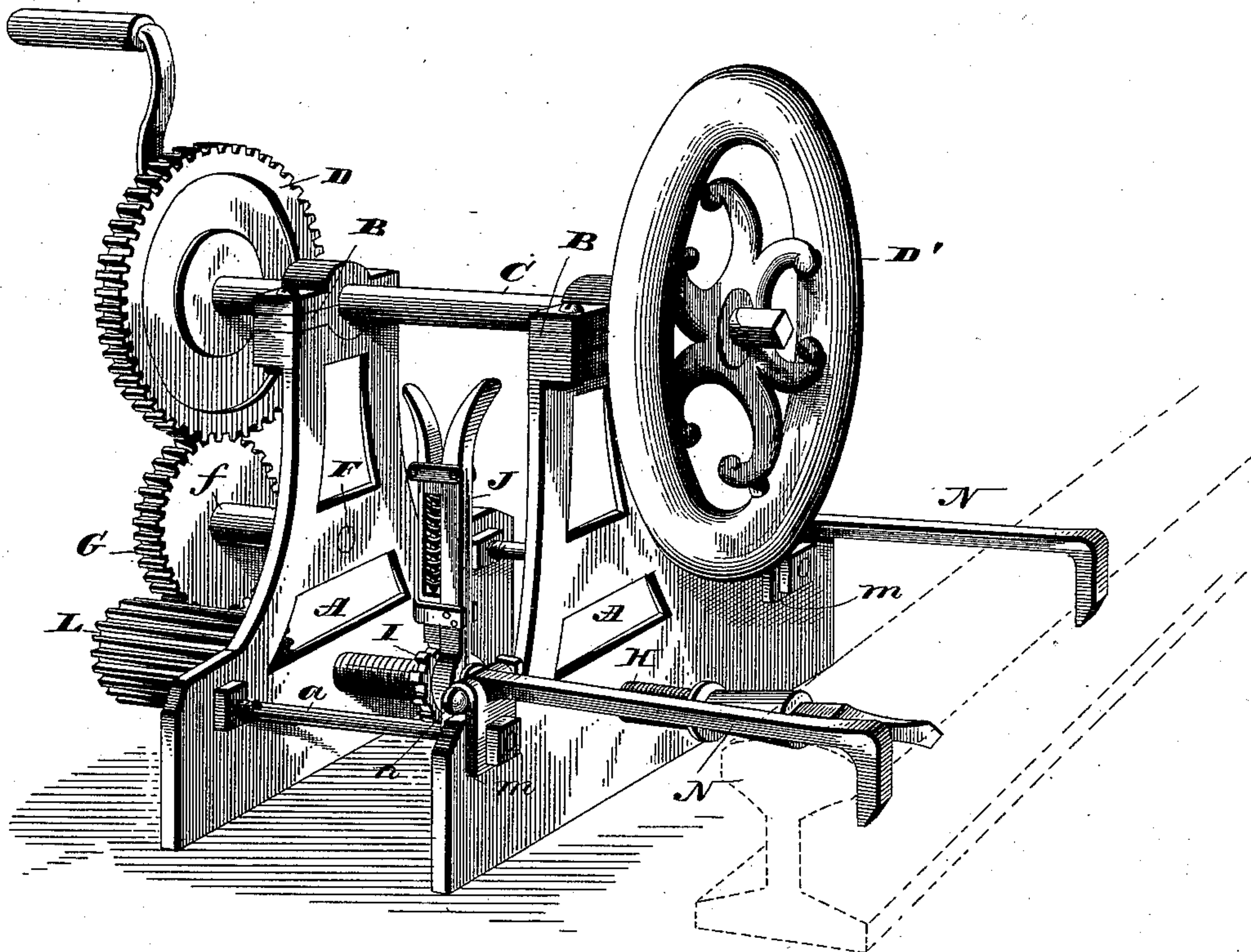
M. W. SMITH.

RAIL DRILL.

No. 373,318.

Patented Nov. 15, 1887.

Fig. 1.



Merritt W. Smith.

WITNESSES

L. S. Elliott,
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INVENTOR

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(No Model.)

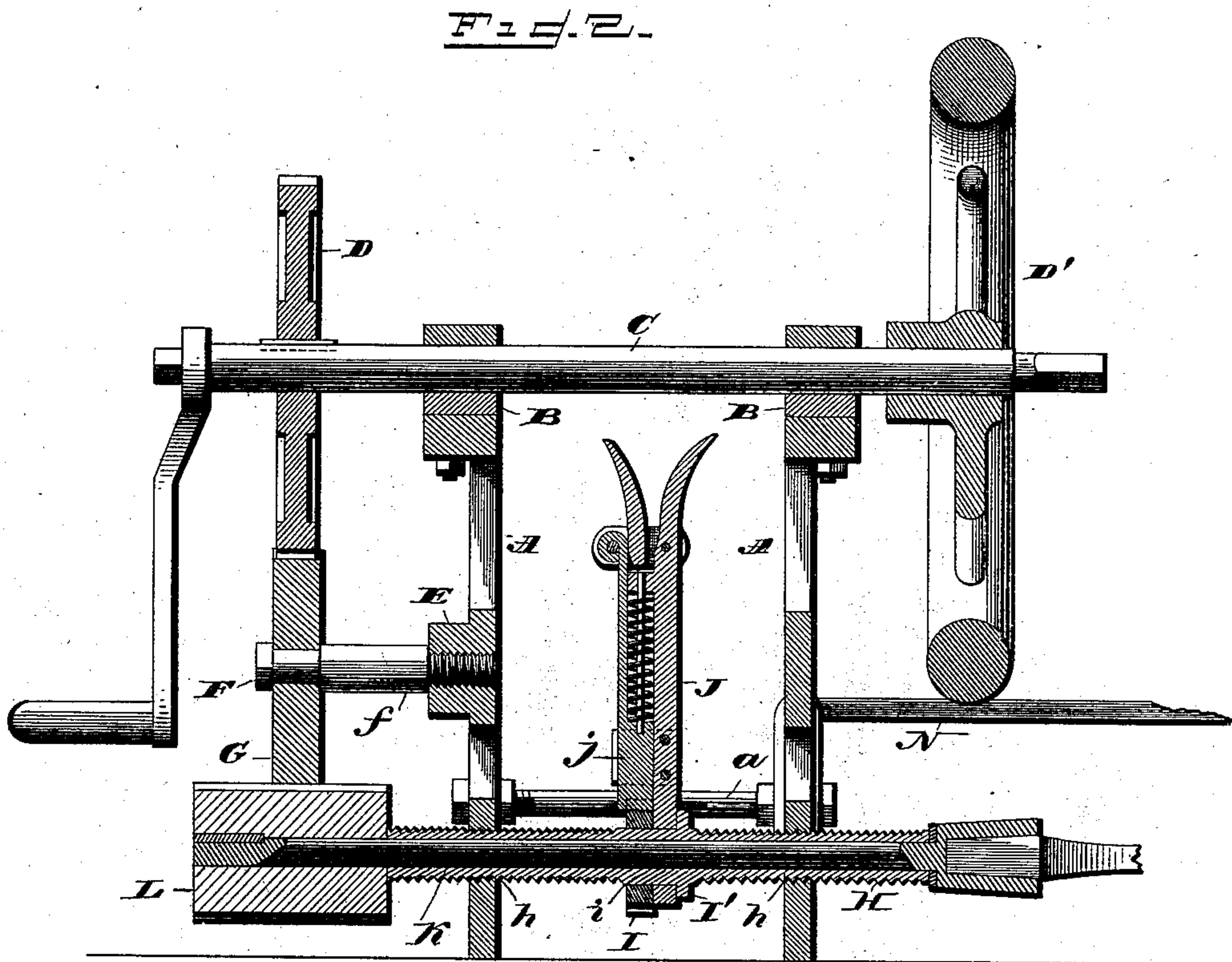
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G. S. Elliott,
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UNITED STATES PATENT OFFICE.

MERITT W. SMITH, OF WAVERLY, NEW YORK.

RAIL-DRILL.

SPECIFICATION forming part of Letters Patent No. 373,318, dated November 15, 1887.

Application filed July 28, 1887. Serial No. 245,534. (No model.)

To all whom it may concern:

Be it known that I, MERITT W. SMITH, a citizen of the United States of America, residing at Waverly, in the county of Tioga and State of New York, have invented certain new and useful Improvements in Rail-Drills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in machines for drilling railroad rails, the object of my invention being to provide a cheap and simple portable apparatus by means of which holes can be drilled in railroad-rails after the same have been laid, for the purpose of providing perforations through which the bolts for attaching the fish-plates to the rails may pass; and my invention consists in the construction and combination of the parts, as will be hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a perspective view of my improved device for drilling railroad rails, and Fig. 2 is a vertical sectional view.

A A refer to the vertical side pieces of the frame, which are rigidly connected to each other by bolts *a a*, these vertical side pieces being provided with flat bases, which are adapted to rest upon the railway-ties when the apparatus is in use. The upper portion of the side pieces have securely bolted thereon bearings B B for a shaft, C, said shaft being provided near one end with a cog-wheel, D, which is securely keyed thereon, the opposite end of said shaft carrying the fly-wheel D'. The outer ends of the shaft C beyond the cog-wheel D and fly-wheel D' are key-ended for the reception of a suitable crank-handle for operating the device.

The supporting-frame A, adjacent to the cog-wheel D, is provided at about its central portion with a flanged part, E, which is internally screw-threaded for the reception of a

bolt, F, which carries a cog-wheel, G, said cog-wheel being of less diameter than the cog-wheel D, which is located immediately above the same. The bolt or stub-shaft F is provided between the cog-wheel G and the flanged portion E with a sleeve, *f*.

The side pieces, A A, have at their central lower portions internally-screw-threaded openings *h h*, through which passes an externally-screw-threaded sleeve, H, said sleeve being hollow throughout its entire length. This sleeve has a central hub, *i*, formed thereon, adjacent to which is a collar, I', and a slight distance from said collar I' is rigidly secured a notched wheel, I. Between the notched wheel I and the collar I' is pivotally attached a lever, J, the lower portion of said lever encircling the hub. This lever carries a spring-actuated sliding block, *j*, which engages with the notched wheel I, and when the parts are in engagement by swinging said lever the sleeve H may be moved within the frame, so as to project the same on either side of said frame. The lower portion of the lever has attached thereto a guide for the sliding block, while near the upper portion of the lever is a projecting portion, against which a spiral spring abuts, and above said projecting portion are side pieces, which are pivotally attached to the lever J, the sliding block being connected to said side pieces. These side pieces are provided with a handle, which corresponds with the handle of the lever, so that when the portions are grasped they can be thrown together so as to release the pawl from the notched wheel.

Through the threaded sleeve H passes a shaft, K, and to one end of said shaft is keyed a pinion, L, which is of a length equal to the movement of the sleeve H in the supporting-frame. The opposite end of the shaft K may be formed into a socket for receiving the squared end of a drill.

By the means hereinbefore described I provide a ready means for turning the drill rapidly and for advancing the same toward the work.

The bolts *a a*, hereinbefore referred to, besides holding the lower portion of the frame together, also serve to hold in place straps *m m*, which are bent upon themselves so as to form loop portions, through which bolts *n* pass

so as to engage with the pivoted hooks N, which are adapted to be placed over the railroad-rail to hold the machine in place when in operation.

5 I am aware that prior to my invention it has been proposed to provide drills for boring metal with hooked bars for holding the boring-machine in contact with the work, and I do not claim the hooked bars which are pivoted
10 to the frame.

I claim—

1. The combination, in a rail-drilling machine, of a supporting-frame constructed, substantially as shown, so as to provide space between the sides thereof, said frame supporting
15 a shaft having a cog-wheel and a fly-wheel, an intermediate gear-wheel supported by one of said side pieces, and a pinion rigidly mounted on a shaft carrying a drill-socket, a threaded
20 sleeve carrying a lever, J, which is located between the side pieces for moving the drill-carrying shaft to and from the frame, the parts being organized substantially as shown, and for the purpose set forth.

25 2. In a drilling device, the side pieces, A, rigidly secured to each other and provided with shafts C and F, carrying cog-wheels, a sliding pinion, L, rigidly attached to shaft K,

which carries the bit, a hollow sleeve, which is externally screw-threaded, said sleeve engaging with the screw-threaded perforations in the frame, and a lever for turning said screw-threaded sleeve, said lever being mounted on a sleeve between the side pieces of the frame, substantially as shown, and for the purposes
30 set forth. 35

3. In a drilling-machine for the purpose set forth, the externally-screw-threaded sleeve H, having a flange, I', a notched wheel, I, a lever, J, pivotally secured to said sleeve and provided with a sliding pawl, which is adapted to engage with said notched wheel, substantially as shown, and for the purpose specified. 40

4. In combination with a drilling-machine constructed substantially as shown, bent plates
45 m, attached to one of said side pieces and provided with bolts n, for pivotally attaching hooked arms N thereto, substantially as shown, and for the purpose set forth.

In testimony whereof I affix my signature in
50 presence of two witnesses.

MERITT W. SMITH.

Witnesses:

G. G. MANNING,

J. F. SAWYER.