

No. 805,449.

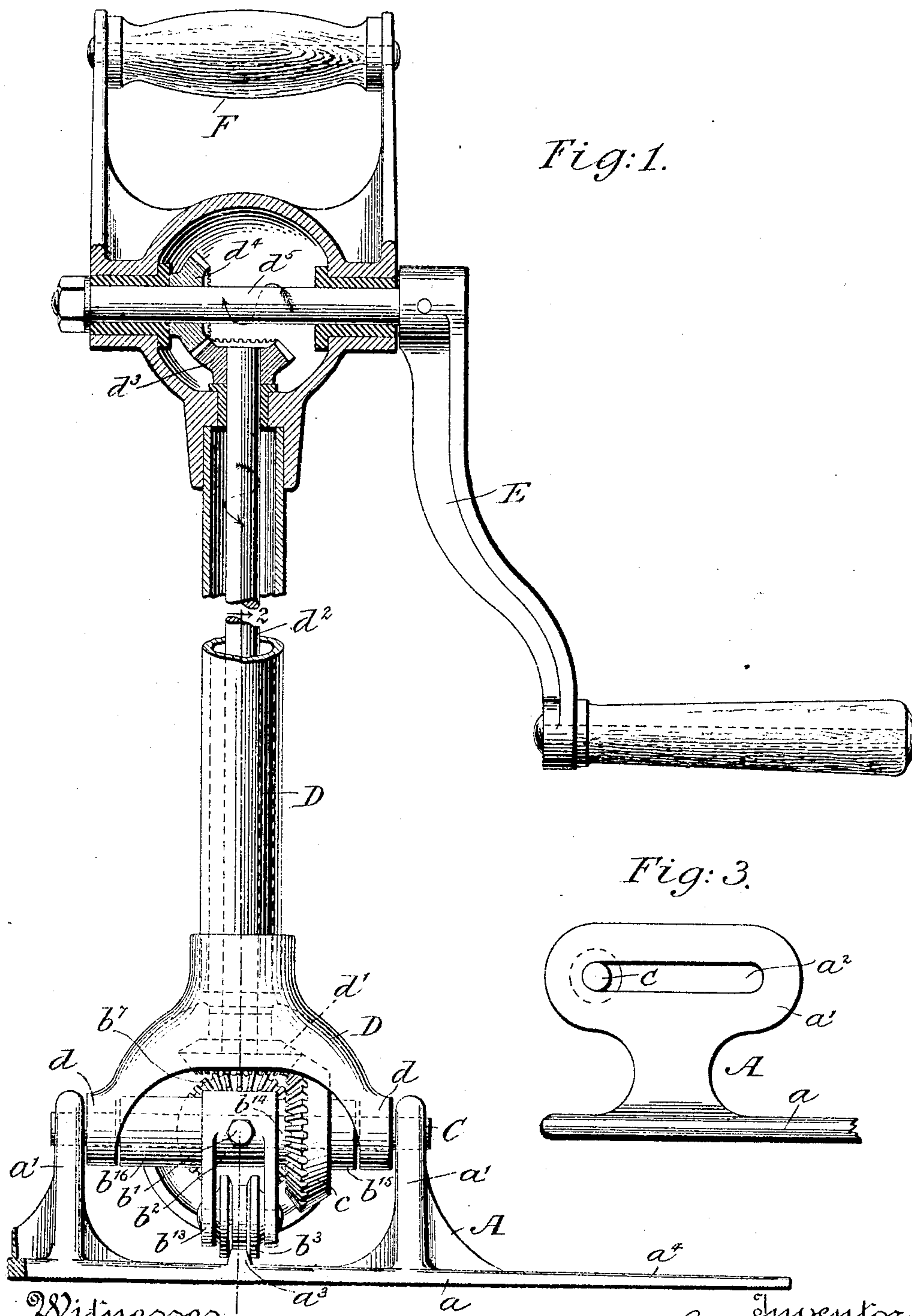
PATENTED NOV. 28, 1905.

J. P. COLEMAN.

DRILL.

APPLICATION FILED APR. 28, 1905.

2 SHEETS—SHEET 1.



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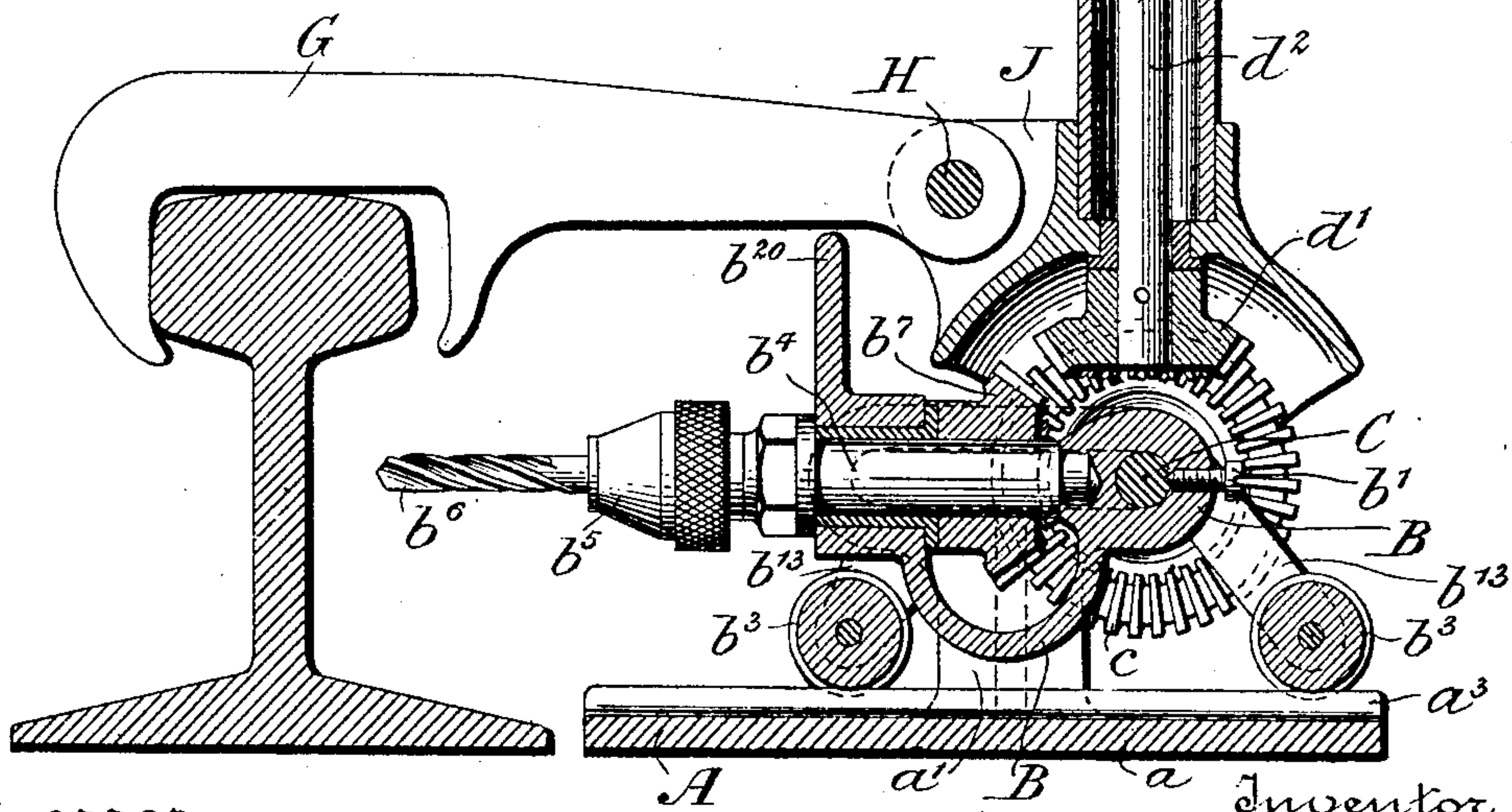
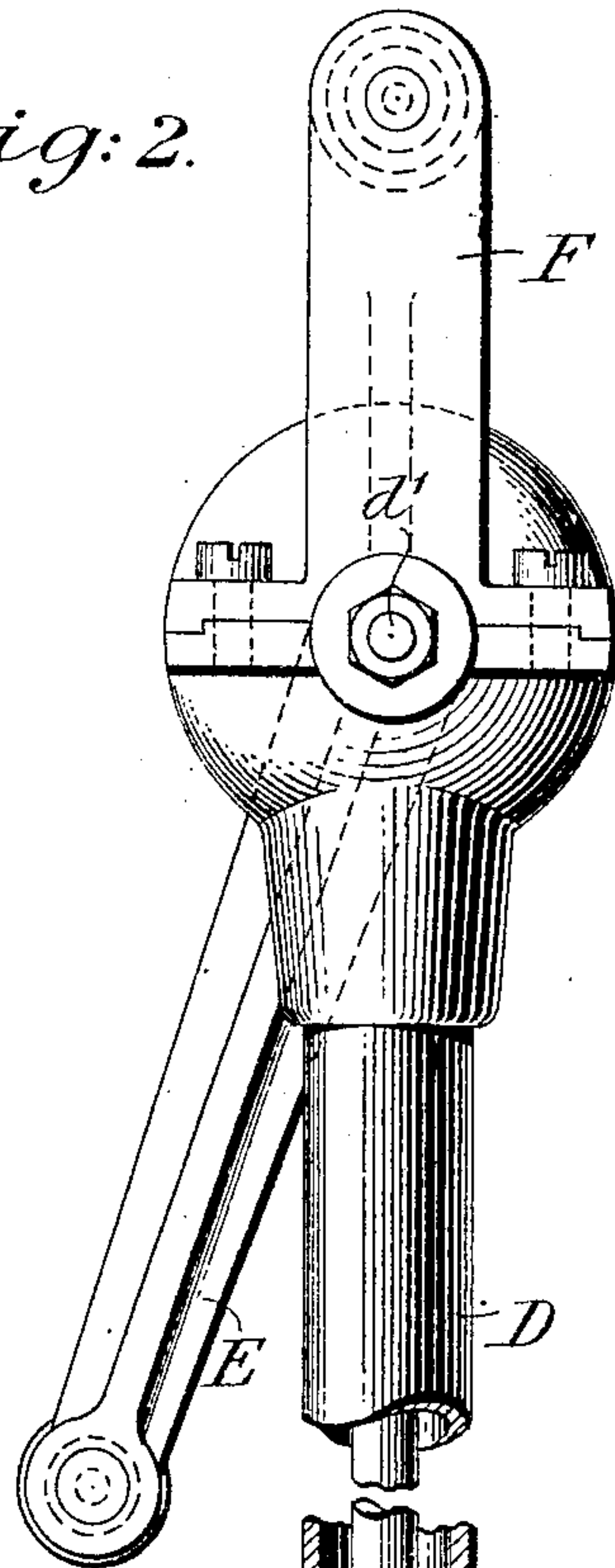
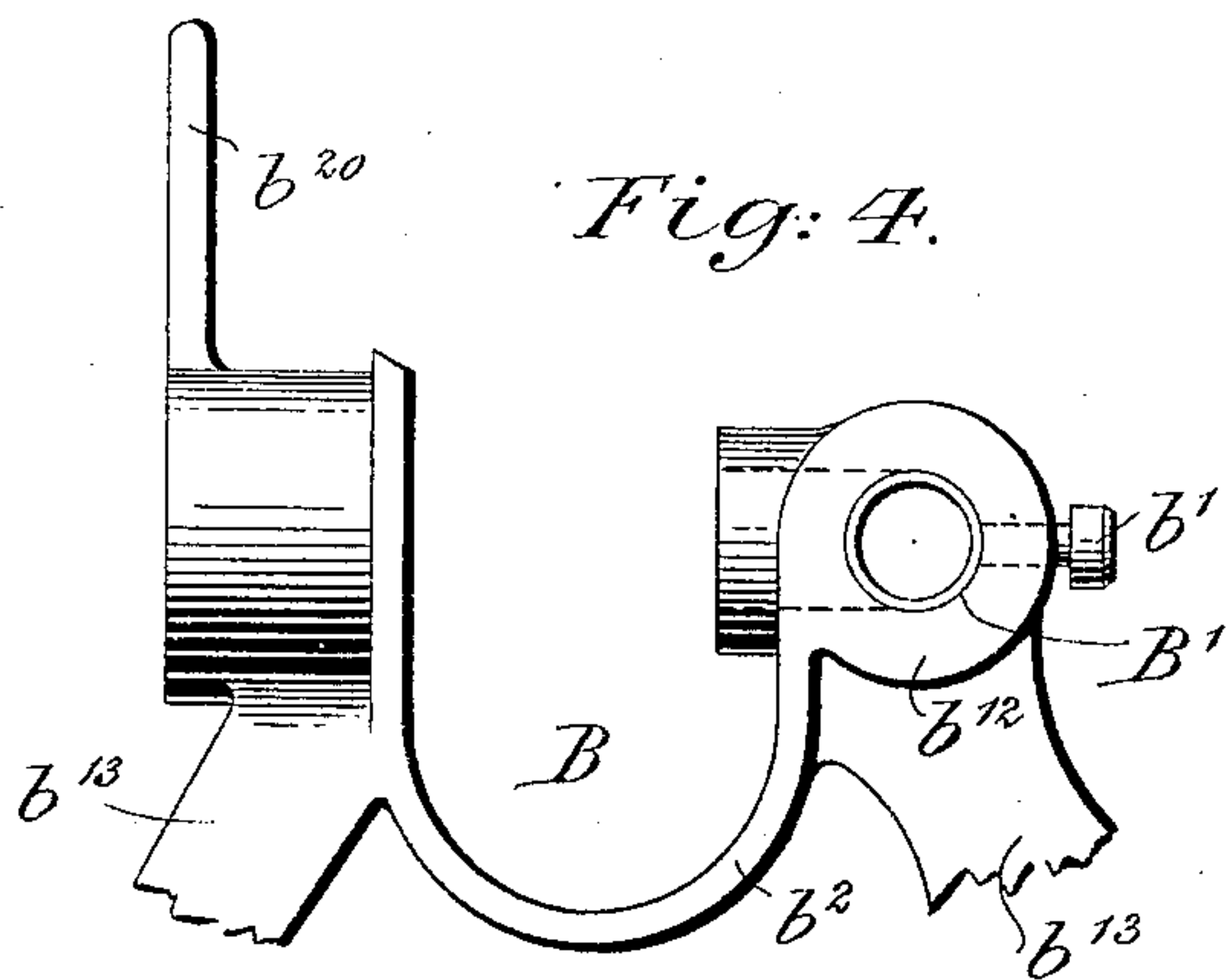
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APPLICATION FILED APR. 28, 1905.

2 SHEETS—SHEET 2.

Fig: 2.



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UNITED STATES PATENT OFFICE.

JOHN PRESSLEY COLEMAN, OF EDGEWOOD, PENNSYLVANIA, ASSIGNOR
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DRILL.

No. 805,449.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed April 28, 1905. Serial No. 257,965.

To all whom it may concern:

Be it known that I, JOHN PRESSLEY COLEMAN, a citizen of the United States, residing at Edgewood, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Drills, of which the following is a specification.

My invention relates to drills, and more particularly to hand-drills employed for drilling openings in track-rails and webs of structural iron.

I will describe one form of hand-drill embodying my invention and then point out the novel features thereof in claims.

In the accompanying drawings, Figure 1 is a rear view, partly in elevation and partly in vertical section, of such a hand-drill embodying my invention. Fig. 2 is a view, partly in elevation and partly in vertical section, of the construction shown in Fig. 1, the plane of elevation and section being at right angles to that of Fig. 1 and taken on the line 2 2 of Fig. 1. Fig. 3 is an elevation of the guides which may be supports. Fig. 4 is an elevation of the drill-carriage.

Similar letters of reference designate corresponding parts in all of the figures.

Referring to the drawings, A designates a suitable support which is provided with ways or guides in or on which a drill holder or carriage B travels to and fro in a right line. As shown in Fig. 1, the support A comprises a plate a , a track or tracks a^3 , constituting a guide or way, and vertical portions a' . Preferably these vertical portions will also act as supports and guides. For example, as indicated in Fig. 3, each guide a' may extend upwardly and then laterally to form a horizontal portion in which is provided a horizontal groove or slot a^2 . The plate a may also be provided with any suitable securing or steadying means, such as one or more extensions a^4 , which manifestly will serve as a foot-piece to retain the base in position.

B designates a drill holder or carriage comprising a body portion or frame b^2 , (see Fig. 4,) which may be a casting. As shown, it is provided with a transverse opening B' to receive a shaft C, to which it may be rigidly secured, as by a set-screw b' . The shaft C projects through the slots a^2 in the guides a' and has movement in the slots.

b^3 b^3 designate wheels or grooved rollers

adapted to run on the track a^3 . These wheels are journaled in extensions b^{13} , which, as shown, are integral with the frame b^2 .

The frame B is also provided with a projection b^{20} , which acts to prevent the rail-clamp falling onto and injuring the drill.

b^6 designates a drill held in a chuck b^5 , mounted on the outer end of a shaft or spindle b^4 , which is rotatably mounted in the frame b^2 in any suitable manner. Fixed on the rear end of this shaft is a bevel-gear b^7 , which when actuated rotates the shaft and drill. The gear b^7 is driven from a bevel-gear c , which is loosely mounted on the shaft C. The bevel-gear c is held from lateral movement on the shaft C by means of the fillers b^{14} b^{15} in the form of sleeves, which are arranged between the frame b^2 and a trunnion d of a frame D. b^{16} also designates a filler which is between the frame b^2 and a trunnion d of the frame b^2 . These fillers, it will be understood, serve merely to hold the frame and gear in relative position. Other means for accomplishing the same result may be employed.

D designates what may be called an "actuating-frame" for carrying the actuating devices. It may be pivotally secured to the drill-carriage in any suitable manner. As shown, it is provided at its lower end with two trunnions d d , which are movably mounted on the shaft C. Contained in this frame is the actuating device or means for the drill, which, as here shown, comprises a shaft d^2 , suitably journaled and carrying a bevel-gear d' , which is in engagement with the bevel-gear c . The shaft d^2 is provided at its upper end with a bevel-gear d^3 , with which meshes a bevel-gear d^4 , rigidly secured to a horizontally-arranged shaft d^5 . The shaft d^5 is provided with a crank E or other device for rotating the shaft. The frame is also provided with a handle F of any suitable form, which will be rigidly secured thereto. Evidently upon turning the crank E the drill b^6 with its chuck b^5 and drill-shaft b^4 will all be rotated through the connections of the shaft d^5 , gear d^4 , meshing with the gear d^3 , shaft d^2 , and gear d' , which meshes with the gear c , which in turn meshes with and actuates the gear b^7 , secured to said drill-shaft b^4 .

In Fig. 2 I have shown the support as comprising a rail-clamp G, here shown as a link carrying jaws, which jaws embrace the rail.

The frame D is pivotally connected to the clamp G at any suitable point and in any desired manner. As shown, a pin H passes through the clamp G and projections J on the frame D. The pin H may also be used as a fulcrum for the frame D. In this event and when the frame D is moved rearward by the handle F the shaft C is moved forward in the guides a^2 and carries with it the drill-carriage. In this way the drill is moved to and from the work to be done. Any amount of to-and-fro movement may be given the drill by the movement of the frame on its fulcrum. Also through the frame the amount of pressure on the drill in drilling may be regulated. It is evident that as the frame D moves on its fulcrum with regard to the drill-carriage and its shaft C its gear d' will none the less remain constantly in coaction with the gear c' , which is, as shown, rotatably mounted on the shaft C.

Any other arrangement of pivoting the frame D to have it move the drill-carriage to and from the iron or steel may be employed.

The form of rail-clamp is immaterial. If desired, the form of clamp illustrated in United States Patent No. 572,156, issued December 1, 1896, to me, may be employed and will constitute a support. In this event the base A is dispensed with, and the drill holder or carriage is supported in guides or ways carried by the clamp and the frame D suitably fulcrumed in the clamp.

It will be seen, therefore, that my invention comprises, essentially, a suitable support, which may be either a base or a rail-clamp, a drill-carriage movable to and fro relatively thereto, and a frame for producing the relative to-and-fro movements of the drill-carriage and for carrying part or all of the actuating devices or mechanism for the drill.

What I claim as new is—

1. In a drilling-machine, the combination with a support; of a drill-holder movable relatively thereto in a right line; a drill-spindle provided with means for clamping a drill journaled in the holder; a frame fulcrumed on the support and having suitable connection with the holder; and mechanism carried by the frame coupled to the drill-spindle for rotating the same.

2. In a drilling-machine, the combination of a support, ways carried by said support, a drill-holder movable to and fro in said ways, a drill-spindle provided with means for clamping a drill journaled in said holder, a frame fulcrumed in said support and operatively connected with the drill-holder to produce its to-and-fro movements, and mechanism carried by the frame coupled to the drill-spindle for rotating it.

3. In a drilling-machine, the combination with a drill-holder mounted to have a to-and-fro movement in a right line; a drill-spindle provided with means for clamping a drill journaled in said holder, of a frame suitably fulcrumed, and having connection with the drill-holder for producing to-and-fro movements of the drill-holder when moved on its fulcrum; and mechanism carried by the frame coupled to the drill-spindle for rotating the same.

4. In a drilling-machine, the combination with a clamp; of a holder movable relatively thereto; a drill-spindle provided with means for clamping a drill, journaled in the holder; a frame fulcrumed on the clamp and having movement about its fulcrum; a suitable connection between the frame and holder; and actuating mechanism for the drill-spindle carried by the frame and holder.

5. In a drilling-machine, the combination with a rail-clamp, a carriage, a drill-spindle provided with means for clamping a drill journaled in the carriage, guides or ways for producing a movement of the carriage in a right line, a frame connected with the carriage for moving it in the ways or guides, a link connected with the rail-clamp and to which the frame is fulcrumed, and operating mechanism carried by the frame coupled to the drill-spindle for rotating it.

In testimony whereof I have signed my name to this specification in the presence of two subscribed witnesses.

JOHN PRESSLEY COLEMAN.

Witnesses:

A. HERMAN WEGNER,
G. A. BLACKMORE.