H. W. JACOBS.

RAIL DRILLING AND REAMING MACHINE.

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966,751.

Patented Aug. 9, 1910.

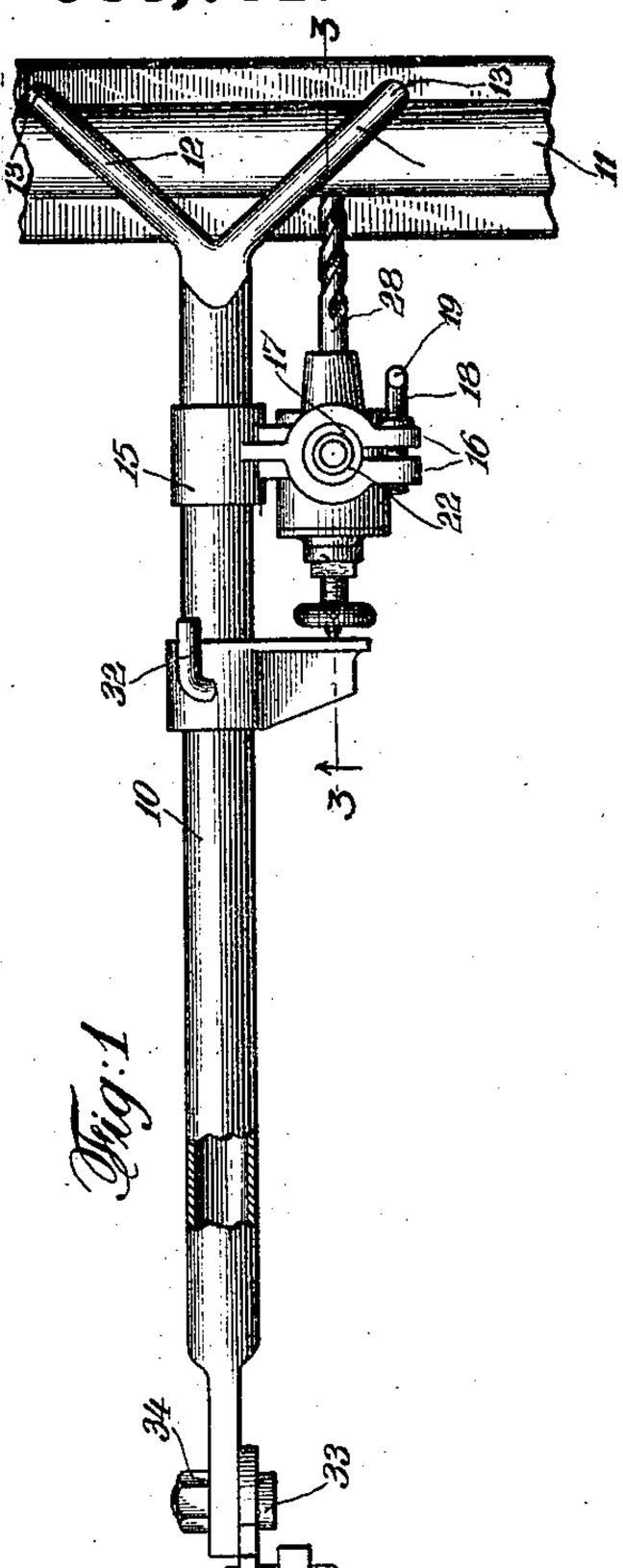

Fig. 1

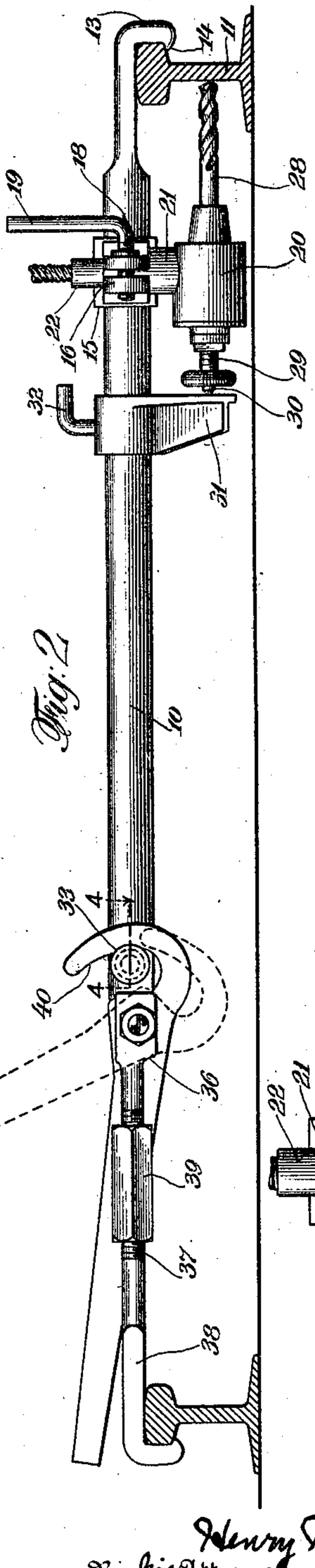

Fig. 2

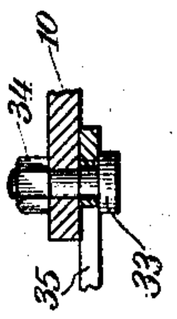

Fig. 4

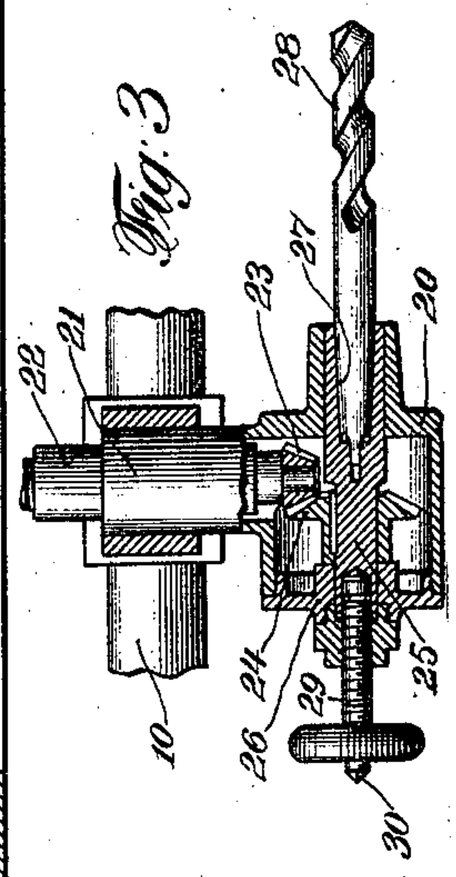

Fig. 3

Witnesses:
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UNITED STATES PATENT OFFICE.

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RAIL DRILLING AND REAMING MACHINE.

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To all whom it may concern:

Be it known that I, HENRY W. JACOBS, of Topeka, in the county of Shawnee and State of Kansas, have invented a certain new and useful Improvement in Rail Drilling and Reaming Machines, and do hereby declare that the following is a full and exact description thereof.

The object of my invention has been to provide a rail drilling and reaming machine by which the rails of a railroad may be drilled, which machine shall have among others the following advantages: that of being of light weight considering its strength; that of being capable of quick application to and removal from working position so as to be capable of working the maximum time between the passing of trains; that of permitting ready vertical and horizontal adjustment of the drill; and to such ends my invention consists in the rail drilling and reaming machine hereinafter specified.

In the accompanying drawings Figure 1 is a plan view of a rail drilling machine embodying my invention; Fig. 2 is a side elevation of Fig. 1, the parts being shown in attached position in full lines, and in detached position in dotted lines, and Figs. 3 and 4 are cross-sectional views of details taken respectively through the drill casing and the inner end of the drill supporting bar.

My invention is capable of embodiment in many different forms, and while I have chosen that form which I deem to be best, it is to be understood that the illustrated form is but one of the possible embodiments of the invention.

In carrying my invention into practice I provide a bar 10 upon which the drill driving devices are mounted. Said bar is preferably circular in cross-section, and it is widened in any desired manner at the end which bears upon the rail 11. A light and convenient form of widening consists in the arms 12 which branch from the bar. The said arms are bent down at 13 to bear against the outer side of the rail, and are preferably provided with hooks 14 to engage the underside of the head of the rail. A sleeve 15 is slidably mounted on the bar, and such sleeve carries ears 16, which are curved away from each other to form a socket 17, the ears being drawn together by a screw 18 preferably having a handle 19.

The drill driving device proper consists of a casing 20 having a hollow cylindrical shank 21 in which is mounted a shaft 22 that is adapted to be connected with a suitable motor, such as a motor on a track car. The lower end of the shaft projects within the casing and is there provided with a bevel gear 23. This gear meshes with a bevel gear 24 on a horizontal drill spindle 25 having bearing in a boss 26 on the casing. Within the spindle is a socket 27 that carries the drill 28, or a reamer can be used. The rear end of the socket is adapted to be borne upon by a hand screw 29 threaded in the casing, the rear end of the hand screw having a center 30 which is adapted to bear against an abutment 31. The abutment has a hole to fit over the bar and can be secured in adjusted position by a hand screw 32. By the rotation of the hand-screw 29 the casing 20 as a whole is moved to and from the rail. In order to support the rear end of the bar upon the opposite rail and to secure it in position, such bar is provided with a pin 33 which is secured to the bar as by having a shank that passes through the bar, which shank carries a nut 34 that is adapted to be clamped against the bar. The pin is preferably circular in cross-section, and is preferably provided with an anti-friction roller. The said roller is adapted to be engaged by the hooked end of a lever 35, the latter being pivoted to a bar 36. This latter bar is preferably formed separately from a shank 37 on a fork 38 which is adapted to rest upon the rail, the said bar 36 and shank being connected by a turnbuckle 39. The said fork is formed similar to the arms 12 on the bar 10. The inner edge 40 of the hook 35 is preferably formed eccentrically to the center upon which the lever turns, so that as the anti-friction roller travels from the point of the hook toward the seat of the hook, it will be drawn toward the center of motion of the lever.

In the operation of my device the two forks are laid upon the opposite rails, the lever being in the dotted position of Fig. 2, and the point of the hook is then engaged with the anti-friction roller. Upon depressing the lever to the full line position in Fig. 2, the anti-friction roller is drawn toward the center of motion of the lever, and the fingers on the respective forks are drawn toward each other, thus clamping the device upon the rails. The drill casing is then raised or lowered in the socket 17 or swung

about the bar 10 as a center until the drill is put in exactly the desired position. The abutment is then moved up against the feed screw of the drilling device and the drill set in motion. The drill is forced into the web of the rail by use of the feed screw. If a train approaches during the drilling of a hole, it is only necessary to throw the lever from the full line position to the dotted position, when the fork 38 can be disengaged from the left rail and the bar 10 swung to vertical position without disturbing the drill further than to withdraw it from within the hole if necessary to the surface of the web. The bar 10 and all of its attached parts swing about the upper outer edge of the tread of the rail as a center. When the train has passed, the fingers 13 are engaged with the outer edge of the rail and the bar 10 swung to horizontal position, bringing the drill to working position again, and this without having disturbed the abutment or the clamp which holds the drill casing. The fork 38 is then laid upon its rail and the lever again engaged with the anti-friction roller and swung to horizontal position.

It will be seen that my rail drilling machine has among others the following advantages: It can be made very light. It can be very firmly secured to the rails, and readily attached and detached therefrom. It permits a considerable range of adjustment of the drill without releasing the hold of the device upon the rails.

It is obvious that various changes can be made in the above illustrated embodiment of my invention, and I desire that my claims be not limited beyond the requirements of the prior art and their necessary intendment.

I claim:

1. In a track appliance, the combination of two members having hooks adapted to engage the outer sides of the rails, a lever pivoted to one of said members, a projection upon the other of said members, and a cam-shaped finger on said lever for engaging said projection and drawing it toward the center of motion of said lever.

2. In a track appliance, the combination of members having hooks adapted to engage the outer surfaces of the rails, one of said members being adjustable in length, a lever pivoted to one of said members, and a projection on the other of said members, said lever having a cam-shaped finger adapted to engage said projection and draw it toward the center of motion of said lever.

In testimony that I claim the foregoing I have hereunto set my hand.

HENRY W. JACOBS.

Witnesses:
M. L. Rhoades,
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