M. E. LOEHR.

TRACK STRAIGHTENER.

APPLICATION FILED AUG. 19, 1908.

910,209.

Patented Jan. 19, 1909.

2 SHEETS—SHEET 1.

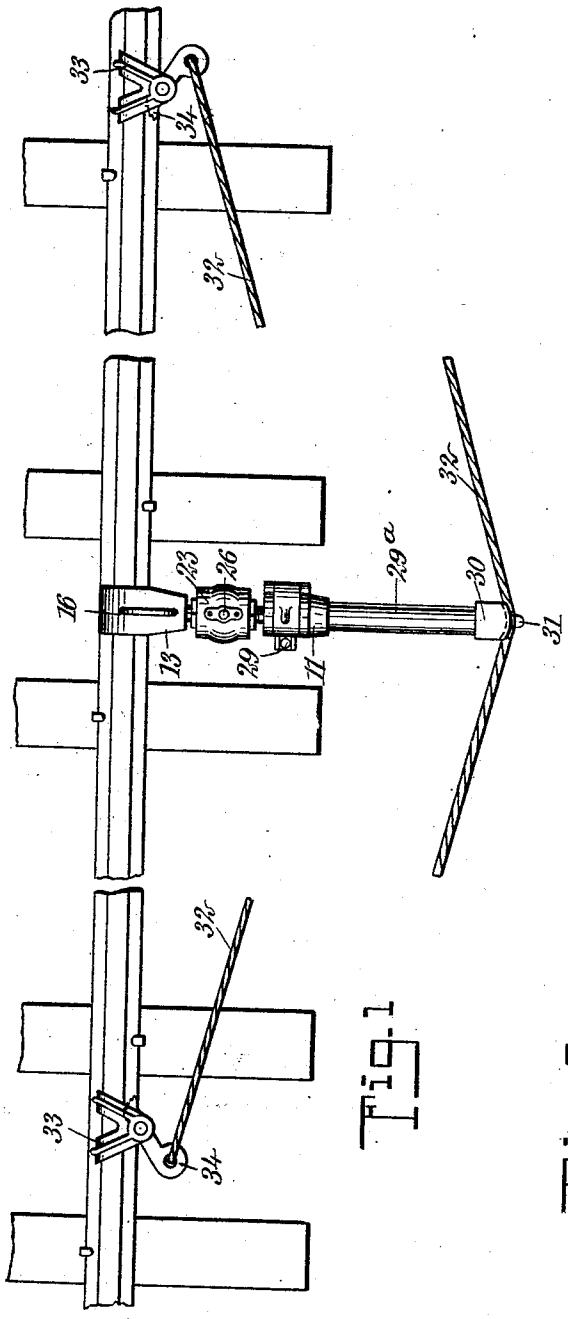


Fig. 1

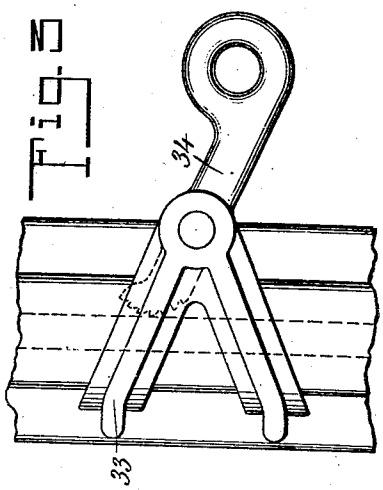


Fig. 3

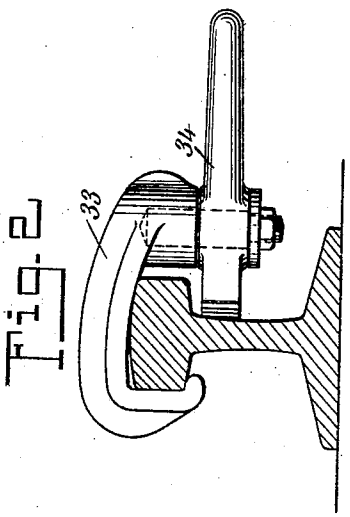


Fig. 2

WITNESSES

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Fig. 4

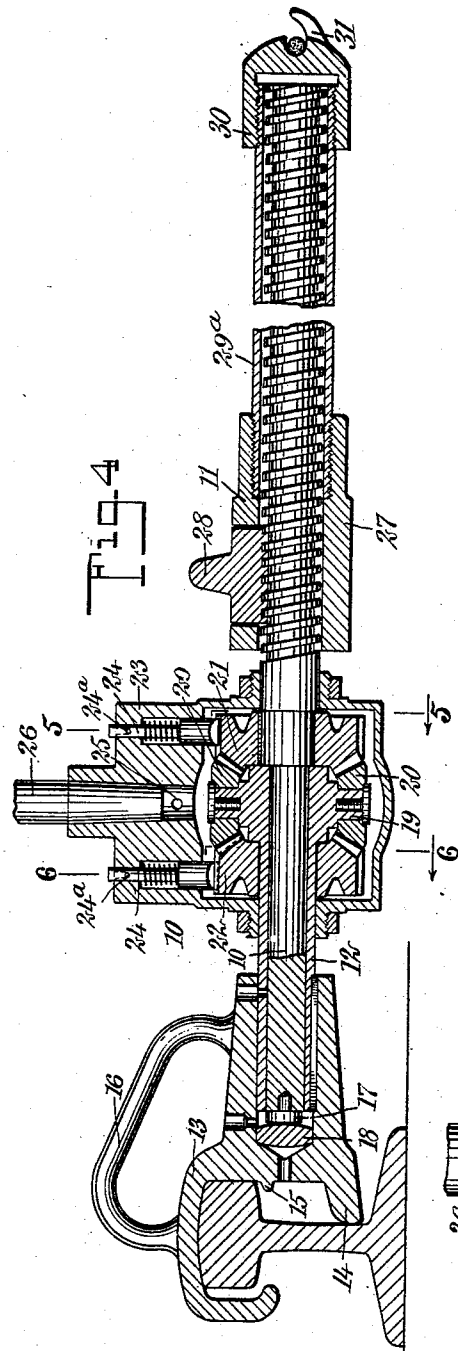


Fig. 8

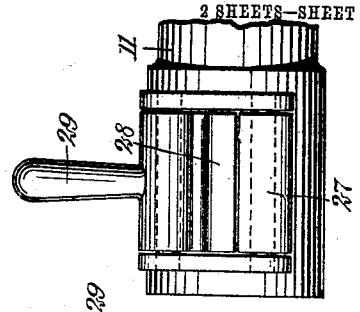


Fig. 7

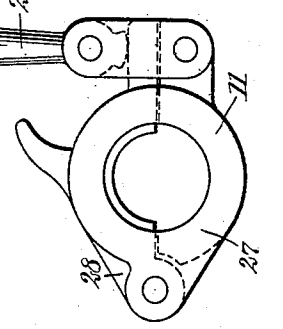


Fig. 6

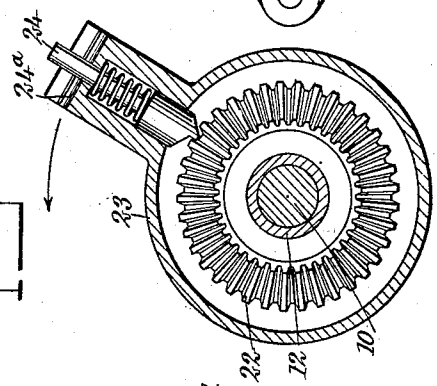
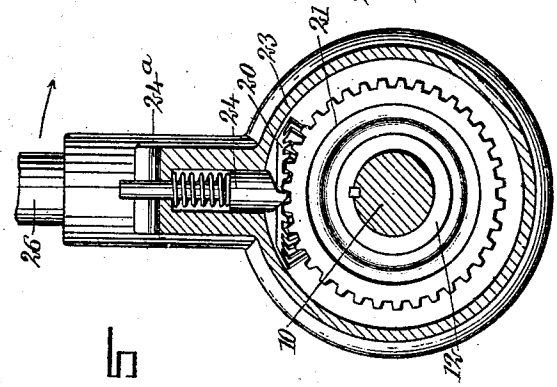


Fig. 5



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TRACK-STRAIGHTENER.

No. 910,209. Specification of Letters Patent. Patented Jan. 19, 1909.

Application filed August 19, 1908. Serial No. 449,276.

To all whom it may concern:

Be it known that I, MILES EDWARD LOEHR, a citizen of the United States, and a resident of Claypool, in the county of Kosciusko and State of Indiana, have invented a new and Improved Track-Straightener, of which the following is a full, clear, and exact description.

This invention is an improvement in straightening or bending appliances such as are used for straightening or lining up railway tracks, and has in view the combination of a cable, a member composed of two principal sections threaded together, one of which is designed to be applied to a rail and the other to the cable, clamps for engaging the rail at opposite sides of the member, connected with the opposite ends of the cable and having means for locking them to the rail when the cable is placed under tension, and oscillatory means operable in both directions of its movement to separate the sections of the member and force the rail and cable apart.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan of my improved appliance, illustrating the manner in which it is applied to a railway rail in straightening the track; Fig. 2 is a section through the rail adjacent to one of the clamps; Fig. 3 is a plan of one of the clamps applied to the rail; Fig. 4 is a central vertical section through the intermediate extensible member of the appliance; Fig. 5 is a cross-section of the same substantially on the line 5—5 of Fig. 4; Fig. 6 is a similar section on the line 6—6 of Fig. 4; Fig. 7 is an inner end view of the nut forming one of the principal sections of the said member; and Fig. 8 is a fragmentary side view of the nut.

The construction of the intermediate extensible member of my improved appliance embodies two principal sections represented by a screw 10 and a nut 11. This screw is threaded at one end only, and at its opposite end is reduced in diameter and has a sleeve 12 journaled thereon which is slidably splined in the socket of a hooked head 13. This head, as best shown in Fig. 4, is designed to engage and fit over the head of the rail and has a projecting lip 14 adapted to bear on the rail web near the base flange. It is further provided with a projection or rib 15, serving to prevent its disengagement in a vertical direction when firmly pressed to the rail. In connection with the head is a handle 16 arranged at the top for removing and applying it, as well as carrying this intermediate portion of the appliance about. The inner end of the screw 10 instead of bearing directly on the bottom of the socket of the head is provided with a hardened cap or button 17, which seats on a hardened disk 18 arranged in the socket.

The outer end of the sleeve 12 is enlarged to provide radial bearings 19, preferably two in number, diametrically arranged, on which are journaled bevel pinions 20, the same meshing with bevel ratchet pinions 21 and 22, respectively keyed to the screw 10 and journaled on the sleeve 12. Inclosing all of these pinions is a casing 23, which, at one side, is journaled on the sleeve 12, and at its opposite side on the screw 10. This casing has a thickened portion which carries spring-pressed pawls 24, and is provided with an intermediate socket 25, in which is fitted an operating lever 26.

The pawls 24 engage the circumferential ratchet teeth of the ratchet pinions 21 and 22 and have their engaging faces oppositely arranged, as shown in Figs. 5 and 6, whereby one of the pawls will slide over the teeth of its respective pinion in moving the lever 26 in one direction, and the other pawl will, at this time, enforce a movement of the pinion with which it engages, the reverse operation taking place in moving the lever 26 in the opposite direction, thus, by reason of the intermediate gearing, causing the screw 10 to revolve in a direction to unscrew from the nut in both directions of the oscillatory movement of the lever. The shanks of the pawls 24 have guide-pins 24ª working in cross notches of the casing, which insure that the working faces of the pawls have proper relation to the ratchet wheel. The nut 11, constituting the other section of the intermediate member, is in itself of a sectional character, the two sections 27 and 28 being hinged together and secured in close position by a cam-locking lever 29. The section 28 of the nut is threaded and the other section 27 is blank and is out-

wardly extended by a pipe 29ª, which has a cap 30 threaded or otherwise secured to its outer end. This cap is constructed with a hook 31, which is designed to engage the intermediate portion of a cable 32.

Clamps 33, as best shown in Figs. 1, 2 and 3, are constructed to engage over the head of the rail, and have levers 34 which are in connection with the opposite ends of the cable 32, these levers operating when the cable is placed under tension to lock the clamps to the rail.

In setting up and operating the appliance, the intermediate extensible member is engaged over the rail at the point where the straightening is to take place, and the clamps 33 are applied at approximately equal distances at opposite sides. The sections of the nut are then separated and the nut slid upon the screw until the slack in the cable is taken up and the latter is engaged by the hook 31, at which time the sections of the nut are again clamped together and the lever oscillated back and forth to unscrew the nut from the screw 10 and consequently force the rail and cable apart. The oscillation of the lever is continued until the rail and ties at the point of application of the appliance have been moved into alinement with the adjoining portions of the track. By reason of the mechanism operating to unscrew the screw from the nut in the movement of the lever in both directions, the straightening is performed in one-half the time that would be required if an ordinary ratchet were used. After the straightening has been finished the position of the pawls is reversed by retracting them sufficiently to carry the pins 24ª above the notches of the casing and give them a half revolution. The operation of the lever 26 will now revolve the screw 10 in the opposite direction and release the tension on the cable, when the sections of the nut may be separated for sliding the nut on the screw to any position.

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

1. The combination of a cable, a member composed of two sections threaded together, one of which is designed to be applied to a rail and the other to the cable, clamps for engaging the rail at opposite sides of the member, connected to the opposite ends of the cable and having means for locking them to the rail when the cable is placed under tension, and oscillatory means operable in both directions of its movement to separate the sections of the member.

2. The combination of an extensible member adapted to engage at one end a railway rail, a cable adapted to engage the opposite end of the member, and clamps having relatively movable locking devices connected to the opposite ends of the cable and movable into engagement with the rail by the tension placed on the cable in extending the member.

3. The combination of clamps adapted to be applied to a rail at different points, each having a gripping member, a cable connecting the gripping member of the clamps together, and means for forcing the rail and cable apart intermediate the clamps operable to force the gripping members to the rail.

4. The combination of a member composed of sections threaded together, one of which is provided with means for engaging a railway rail, and means, including an oscillatory lever, operable to revolve one of said sections in the same direction in either direction of the movement of the lever.

5. The combination of a screw having means at one end for engaging a railway rail, a nut threaded on the opposite end of the screw, clamps adapted to be applied to the rail at each side of said means, and a cable connected to the clamps and adapted to be engaged by the said nut.

6. The combination of a screw, a sleeve journaled on the screw, rail-engaging means connected to the sleeve, ratchet pinions respectively journaled on the sleeve and fixed to the screw, a pinion carried by the sleeve in mesh with the ratchet pinions, a casing inclosing all of said pinions, having an operating lever in connection therewith, and reversible pawls carried by the casing and in engagement with the ratchet teeth of the ratchet pinions.

7. The combination of a screw, a sleeve journaled on the screw having rail-engaging means, pinions respectively fixed to the screw and journaled on the sleeve, and means for alternately actuating said pinions in opposite directions.

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

MILES EDWARD LOEHR.

Witnesses:
LYDIA DENTZER,
CHARLES H. ELDER.