

(No Model.)

R. ALLEN & H. ROSS.

MACHINE FOR APPLYING NUTS IN OPERATIONS ON TRACK IRONS.

No. 461,727.

Patented Oct. 20, 1891.

Fig. 1.

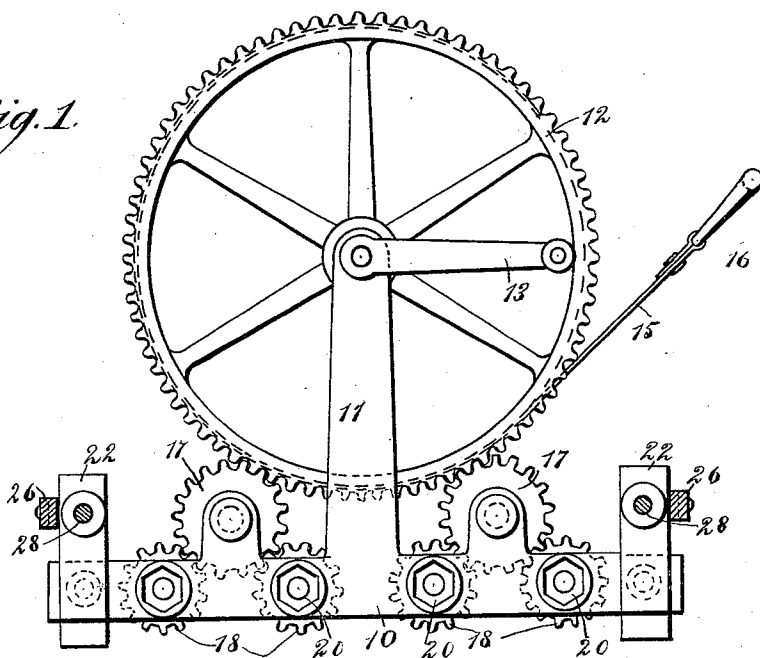


Fig. 2.

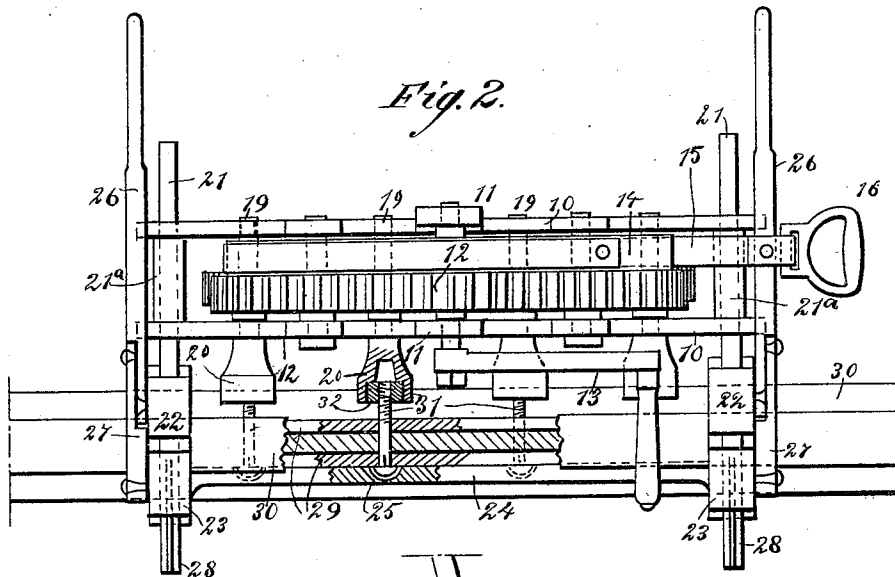
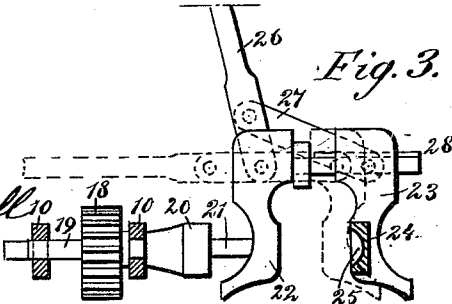


Fig. 3.

WITNESSES:

Donn Twitchell
C. Sedgwick



INVENTORS:

R. Allen
H. Ross

BY

Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

RAYMOND ALLEN AND HUGH ROSS, OF REVELSTOKE, BRITISH COLUMBIA,
CANADA.

MACHINE FOR APPLYING NUTS IN OPERATIONS ON TRACK-IRONS.

SPECIFICATION forming part of Letters Patent No. 461,727, dated October 20, 1891.

Application filed April 17, 1891. Serial No. 389,324. (No model.)

To all whom it may concern:

Be it known that we, RAYMOND ALLEN and HUGH ROSS, both of Revelstoke, in the Province of British Columbia and Dominion of Canada, have invented a new and Improved Machine for Turning Nuts, of which the following is a full, clear, and exact description.

Our invention relates to improvements in machines for turning nuts, and more especially to improvements in machines which are adapted to turn the nuts on bolts which are used to attach fish-plates to railroad-rails; and the object of our invention is to produce a simple and efficient machine which may be quickly and securely clamped to a rail-joint, and which will simultaneously tighten or loosen all the nuts of a joint.

To this end our invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

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

Figure 1 is an inside elevation of the main portion of the machine with the outer jaw removed, the levers and rods connecting the jaws being shown in section. Fig. 2 is a broken plan view of the machine as applied to a rail, parts being broken away to show the manner in which a socket is secured to a nut; and Fig. 3 is a broken detail sectional view showing in cross-section the general arrangement of the jaws and the nut-operating sockets.

The main portion of the machine-frame consists of two similar parallel side pieces 10, from the center of which extend the parallel uprights 11, and these uprights support a gear-wheel 12, which is turned by a crank-handle 13, and which on one side is formed with a pulley 14, having a belt 15 secured thereto, and the belt 15 is provided at its free end with a hand-hold 16, and it will be seen that by pulling on the hand-hold the belt will be unwound from the pulley 14, thus turning the pulley and gear-wheel, so that the gear-wheel may be operated either by the crank, the belt, or by both. The gear-wheel connects, by means of two intermediate gears 17,

with gear-wheels 18, each intermediate gear driving two of the gear-wheels 18, and the gear-wheels 18 are secured to shafts 19, which project through the side pieces 10 and terminate at their inner ends in sockets 20, adapted to fit over the nuts which are applied to the fish-plates, and it will be readily seen that the sockets may be shaped to fit any form of nut. The side pieces 10 are connected at opposite ends by means of shafts 21, which slide in sleeves 21^a, with the inner jaws 22, and these jaws are pivotally connected with opposite jaws 23, the jaws 22 and 23 having their lower ends provided with feet, which support them at a desired height, and the inner portions of the jaws are shaped so that they will fit closely over a railroad-rail and against the fish-plates of a rail. The outer jaws 23 are connected by a bar 24, which has at intervals on its inner side sockets 25, which are adapted to fit over the heads of the bolts of the fish-plates, as shown in Fig. 2, and which align with the sockets 20 on the ends of the shafts 19. Each of the inner jaws 22 is provided near its upper end with a lever 26, the levers being pivoted on the jaws, and the levers are connected with the outer jaws by means of links 27, the links being pivoted to the outer jaws near the upper ends and to the lower portion of the levers 26. It will be seen that when the levers are raised, as in Fig. 3, the links will push outward on the outer jaws and open them, and when the levers are depressed, as indicated by dotted lines in Fig. 3, they will draw the outer jaws toward the inner ones, thus clamping the two jaws upon a rail when they are placed in position over it. The outer and inner jaws are also connected by rods 28, which are secured to the inner jaws and which project through suitable bores in the outer jaws, the rods serving as guides for the outer jaws.

When the machine is to be used, the fish-plates 29 are applied to the joints of the rails in the ordinary way, the bolts 31 are thrust through the holes in the fish-plates and rails, the nuts 32 are adjusted in the sockets 20 of the machine, and the jaws 22 and 23 are adjusted upon the rails and clamped securely in place by forcing down the levers 26, and when the jaws are clamped to the rails the

sockets 20 are brought forward, so as to bring the nuts upon the ends of the bolts 31, the heads of the bolts being held in the sockets 25 of the cross-bar 24. The gear-wheel 12 is then turned either by the crank 13 or the belt 15, and this rapidly revolves the shafts 19 and sockets 20 by means of the connecting-gearing, and the nuts are screwed rapidly and firmly upon the bolts. It will thus be seen that the nuts are all applied simultaneously to the bolts, and it is evident that they may be screwed home much quicker and more firmly than by the ordinary hand process. It is obvious that by using the machine in the manner described the operation of fastening the fish-plates to the rails can be completed in a much shorter time than when the operation is performed by hand. The common way of using the machine is to secure the belt 15 to a hand-car, which is usually brought along as the track is being laid, and by pushing the car ahead its draft will turn the pulley 14 and gear-wheel 12 and will rapidly turn up the nuts. It will be seen that the machine is as well adapted in lifting track as in laying it down, as when the nuts are to be removed from the bolts the sockets are applied to them and the gear-wheel turned in a direction to unscrew the nuts.

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

1. A nut-turning machine comprising a frame, a series of shafts mounted therein and provided with end sockets, a gear mechanism for turning the shafts, and means for securing the machine to the rails of a track, substantially as described.

2. A nut-turning machine comprising a frame, a series of transverse shafts mounted therein and provided with end sockets, adjustable jaws secured to the frame and adapted to be clamped to the rails and fish-plates, and a gear mechanism for turning the socketed shafts, substantially as described.

3. A nut-turning machine comprising a frame, a series of transverse shafts having end sockets mounted in the frame, adjustable jaws secured to the frame, a lever mechanism for clamping the jaws upon railroad-rails, and a gear mechanism for turning the transverse shafts, substantially as described.

4. In a machine of the character described, the combination, with a main frame having means for attaching it to the rails of a track, of a series of shafts mounted in the frame and provided with gear-wheels, the shafts having sockets at their inner ends, a main gear-wheel geared to the gear-wheels of the socketed shafts, a pulley formed on the main gear-wheel, and a handled belt secured to the pulley, substantially as described.

5. A nut-turning machine comprising a frame having adjustable jaws secured thereto, a lever mechanism for clamping the jaws to the rails of a track, a cross-bar connecting the outer jaws and provided with sockets, a series of transverse shafts mounted in the frame and provided with sockets at their inner ends, and a gear mechanism for turning the shafts, substantially as described.

RAYMOND ALLEN.
HUGH ROSS.

Witnesses:

EDWARD THOMAS,
C. B. HUME.