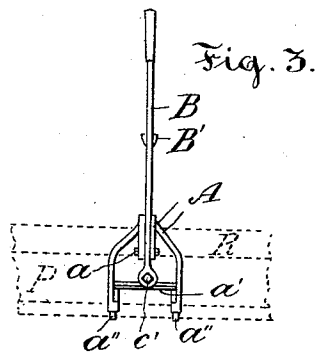
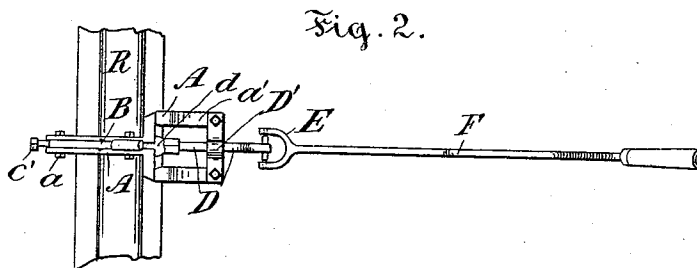
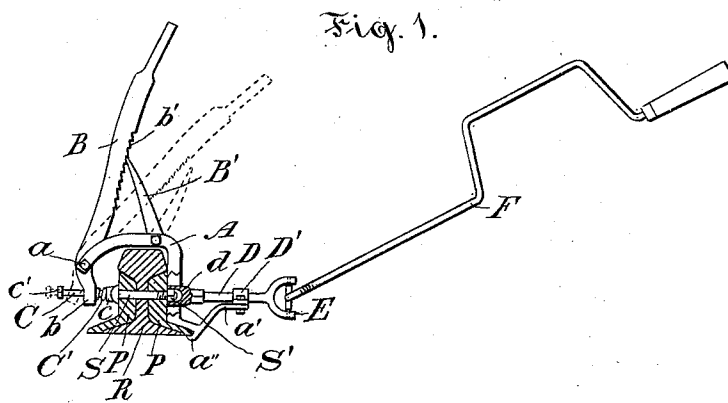


(No Model.)

F. P. BRUNEAU.  
NUT AND SCREW TIGHTENING MACHINE.

No. 536,012.

Patented Mar. 19, 1895.



Witnesses:  
Shaw & Haley.  
W. Hoffke.

Ferdinand P. Brunneau  
Inventor.  
by A. Harvey  
his Attorney.

# UNITED STATES PATENT OFFICE.

FERDINAND P. BRUNEAU, OF LYSTER STATION, CANADA.

## NUT AND SCREW TIGHTENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 536,012, dated March 19, 1895.

Application filed October 17, 1894. Serial No. 526,181. (No model.) Patented in Canada December 5, 1894, No. 47,594.

*To all whom it may concern:*

Be it known that I, FERDINAND P. BRUNEAU, of Lyster Station, in the county of Megantic, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Nut and Screw Tightening Machines, (for which I have obtained a patent of the Dominion of Canada, No. 47,594, dated December 5, 1894;) and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part hereof.

My invention, which will be hereinafter fully set forth and claimed, relates to devices for tightening nuts, screws and bolts especially adapted for the nuts of rail joints.

The object of my invention is a device specially adapted for saving time and labor in bolting fish plates into place.

Figure 1 is a side elevation of my new machine, showing it applied to a rail joint shown in cross section, the dotted lines showing the position of some of the parts when about to be secured into place or removed. Fig. 2 is a top view of the same, and Fig. 3 is a rear view of the same.

A bar, A, is bent and doubled up to form a jaw passing over the top of a rail joint when the fish plates are in position. The rear portion, having, like the top part, the open return ends near together, is bent to project some distance from the rail and form a pivot point, *a*, for a lever a little distance above the bolt holes. The front portion is spread apart and passes down to the foot of the rail, then slopes down the top of the foot of the rail to its edge, then slopes upward again and then forward horizontally to form a platform, *a'*, a little below the bolt holes. At the lower portion, at the point where it passes the edge of the rail foot, a horn or hook, *a''*, is formed on each shank of the bar, which is adapted to engage the edge of the rail foot to prevent it rising. In the rear portion, at the point, *a*, is pivoted a lever, B, the downward extending short arm of which carries at its lower end, in an eyed hub, *b*, a pin, bolt or mandrel, C, adapted to slide therein in line with the bolt to be secured, and which is provided at its inner end with a chuck, *c*, adapted to receive and hold the head of the bolt which is to be secured.

Between the head *c* and hub *b* is a spring, C', coiled upon the mandrel, and adapted to provide an elastic pressure for the purpose of adjustment of the lever B. The other end of the bolt C is provided with a head or pin, *c'*, to prevent it from leaving the hub when not in use. The lever B is provided with ratchet teeth, *b'*, at its lower, *i. e.*, forward edge, adapted to engage a pawl, B', which is pivoted in the upper part of the jaw.

In front, the two legs of the bar A, forming the jaw, are turned apart or away from each other, so as to form an open space in the center around the bolt and nut which it is desired to secure. Upon the outer end of the platform *a'* is secured a bearing, D', adapted to hold rotatively and slidingly at a right angle to the fish plate when in position and in line with the bolt to be secured, a spindle, D, carrying at one end, the one facing the fish plate, a chuck, *d*, adapted to receive and turn the nut to be tightened, and at the other end part of a universal joint, E, the other part of which is secured to or forms part of a brace, F. The chucks *c* and *d* may be made removable, so as to be readily exchanged for other sizes or shapes, such as square for hexagon and the like.

The operation of the machine is as follows: The jaw A *a a'* is placed over the rail, R, after the fish plates, P, are in position and the bolts, S, have been inserted and the nuts, S', started. The chuck *c* is then placed on the head of the bolt and the lever B pressed out, so as to press the chuck hard on the head and clamp the fish plates hard together, at the same time. The pawl B', being allowed to play on the teeth *b'*, will retain the lever in position when liberated and thus hold the whole machine securely clamped. The brace F is then taken up and the spindle D pushed against the bolt and nut S'. The chuck *d* will then engage the latter. Rotary motion is now given to the spindle by means of the brace F until the nut has been properly tightened. The universal joint E, between the spindle D and brace F, enables the latter to be used at any convenient angle and does not necessitate it being operated at the same level as the bolt S.

The machine is of course applicable to other objects besides railway rails. In such cases

the jaw must be adapted to the special object, if necessary.

I claim as my invention—

1. The combination of a jaw passing over  
5 and partly around any object desired to be bolted together and affording a pivot point above the bolt center at one end and a projecting platform below the bolt center at the other, a lever pivoted to the pivot end and  
10 having at its downward extending short arm a hub and ratchet teeth at its upper end, a mandrel adapted to slide in the hub of said lever in a line with the bolt to be secured and carrying a chuck adapted to receive the bolt  
15 head, a spring between said chuck and hub pressing the two apart, a pawl pivoted to the upper part of the jaw and adapted to engage the teeth of the lever, a spindle journaled slidably upon the platform of the jaw in line  
20 with the bolt to be secured and having a chuck adapted to receive and retain the nut to be secured and a brace connected to said spindle by a universal joint, substantially as set forth.

2. The combination of a clamp formed of  
25 a jaw adapted to partly surround an object to be bolted together and of a spring actuated mandrel with chuck in line with the bolt to be secured, carried in a lever pivoted at the rear end of said jaw and a pawl pivoted

to said jaw and adapted to engage said lever, 30 a spindle journaled slidably upon a projection of said clamp in line with the bolt to be secured and carrying a chuck adapted to receive and turn the nut and means of operating said spindle, substantially as set forth. 35

3. The combination of a jaw adapted to partly surround an object to be bolted together, a spring actuated mandrel with chuck in line with the bolt to be secured, a lever pivoted above the center of the bolt in said jaw and carrying said chuck at its lower end 40 and having ratchet teeth at its upper end, a pawl pivoted in the top of said jaw adapted to engage the ratchet teeth of the lever, a spindle journaled slidably at the other side 45 of the jaw opposite said mandrel upon a platform formed by said jaw below the center of the bolt and carrying a chuck adapted to engage the nut, a brace or winch for turning said spindle and a universal joint connecting said spindle and braces, substantially 50 as set forth.

In testimony whereof I have signed in the presence of the undersigned witnesses.

FERDINAND P. BRUNEAU.

Witnesses:

ARTHUR LEGARÉ,  
C. E. GOSLELIN.