

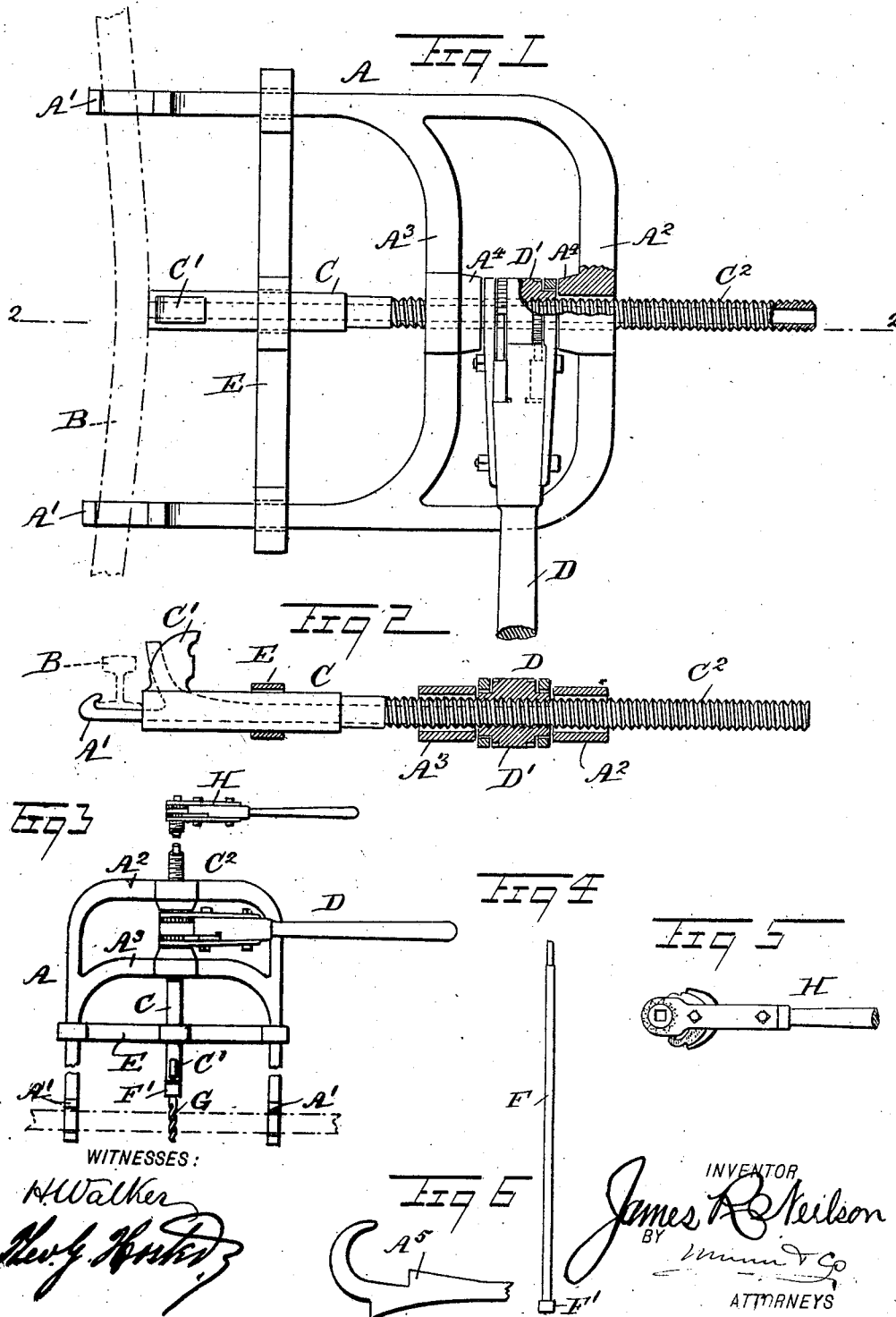
No. 648,776.

Patented May 1, 1900.

J. R. NEILSON.  
STRAIGHTENING AND DRILLING MACHINE.

(Application filed July 20, 1899.)

(No Model.)



# UNITED STATES PATENT OFFICE.

JAMES RELIGHA NEILSON, OF DELAMAR, NEVADA.

## STRAIGHTENING AND DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 648,776, dated May 1, 1900.

Application filed July 20, 1899. Serial No. 724,472. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES RELIGHA NEILSON, of Delamar, in the county of Lincoln and State of Nevada, have invented a new and improved Straightening and Drilling Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved straightening and drilling machine for straightening rails, axles, pipes, and the like and for drilling holes in various articles—for instance, in rails for fish-plate bolts—the machine being simple and durable in construction, readily applied, and easily and conveniently manipulated to accomplish the desired result without undue exertion on the part of the operator.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of my invention is represented in 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 view of the improvement with parts in section. Fig. 2 is a sectional side elevation of the same, on the line 2 2 in Fig. 1. Fig. 3 is a reduced side elevation of the improvement arranged as a drilling-machine. Fig. 4 is a side elevation of the drill-rod. Fig. 5 is a side elevation of the ratchet-drill, and Fig. 6 is an enlarged side elevation of one of the frame ends designed for engaging pipes and axles.

The improved machine is provided with a frame A, approximately U-shaped and formed at the ends A' to readily engage and hold the article to be supported or drilled. For instance, as shown in Figs. 1 and 2, the ends A' are formed with spaced lugs for engaging the side edges of the base of a rail B'. (Indicated in Fig. 2.) Between the ends A' is arranged a head C' on a straightening-bar C, mounted to slide in the end bar A<sup>2</sup> of the frame A and in a connecting or cross bar A<sup>3</sup>, the said head C' being adapted to engage the rail approximately midway between the ends A'. The head C' is so shaped as to engage the rail or other article either on one side or the other, so as to either push the rail into a straight

form or pull it into the desired shape, as the case may be. The outer end C<sup>2</sup> of the bar C is threaded and is engaged by a nut D' of a ratchet-drill D of any approved construction and held against longitudinal movement on the bar C by being fitted between lugs A<sup>4</sup> on the frame-bars A<sup>2</sup> A<sup>3</sup>. A holder E loosely engages the side bars of the frame A, and in the holder is also fitted to slide the bar C, so that the latter is prevented from turning, and at the same time the sides of the frame A are prevented from spreading when the device is used for straightening an article. Now it is evident that when the machine is applied and the usual motion is given to the ratchet-drill D then a sliding motion is given to the rod C, so as to move the same in the desired direction to straighten that portion of the rail B or other article extending between the ends A' of the frame.

The bar C is made hollow to permit the insertion of a drill-rod F, (see Figs. 3 and 4,) the drill-rod being provided at one end with a socket F' for receiving the drill G, and the other end is adapted to receive a second drill H, similar to the ratchet-drill D, and serving to turn the rod F for drilling the hole, while the feeding is done by actuating the ratchet-drill D to slide the bar C in the desired direction. It is understood that the socket F' is engaged by the outer or head end of the bar C, so that when the latter is moved outward upon the operator manipulating the ratchet-drill D then the rod is carried along, and as the rod is turned at the same time it is evident that the drill G will drill a hole in the article.

As shown in Fig. 6, the end A<sup>2</sup> of the frame A is shaped to more readily conform to the cross-section of a pipe or an axle to allow of using the machine on such articles.

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

1. In a device of the class described, the combination with an approximately U-shaped frame having ends for engaging an article at spaced points, of a tubular bar slidable in said frame at a point about midway between the frame ends, the said tubular bar being threaded at one end, a ratchet-wheel on the threaded end of said bar and held against lon-

gitudinal movement in said frame, a holder engaging the frame ends and the said bar to prevent the latter from turning and the ends of the frame from spreading, and a drill  
5 mounted to turn in the said tubular bar and arranged to be moved longitudinally by the movement of said tubular bar, substantially as described.

2. In a device of the class described, the  
10 combination with an approximately U-shaped frame having ends for engaging an article at spaced points, of a tubular bar slidable in said frame, the said bar being threaded at one end, a ratchet-wheel on the threaded end of  
15 the said bar and held against longitudinal movement in the frame, means for operating the ratchet-wheel, a holder engaging the frame ends and the said bar to prevent the latter from turning and the ends of the frame from  
20 spreading, a drill-rod movable in said tubular bar and provided at one end with a socket adapted to carry a drill, the end of said tubular bar being adapted to engage the said socket, and a second ratchet-wheel engaging  
25 said drill-rod for turning it in the tubular bar

at the time the latter is moved bodily in the frame by actuating the first-named ratchet-wheel, substantially as shown and described.

3. The combination with an approximately  
30 U-shaped frame having side bars formed at their ends to engage and hold an article, a top or end bar connecting the side bars, and a cross-bar connecting the side bars below the top or end bar, of a tubular bar slidable in the top or end bar of the frame and in said  
35 cross-bar, the said tubular bar being threaded at one end and arranged to receive a drilling-tool, a device engaging the threaded portion of the tubular bar for moving the same longi-  
40 tudinally, the said device being located between the top or end bar of the frame and the cross-bar and held against longitudinal movement, and a holder engaging the side bars of the frame and the said tubular bar to prevent  
45 the latter from turning and the bars from spreading, substantially as described.

JAMES RELIGHA NEILSON.

Witnesses:

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JOHN L. TOWLEY.