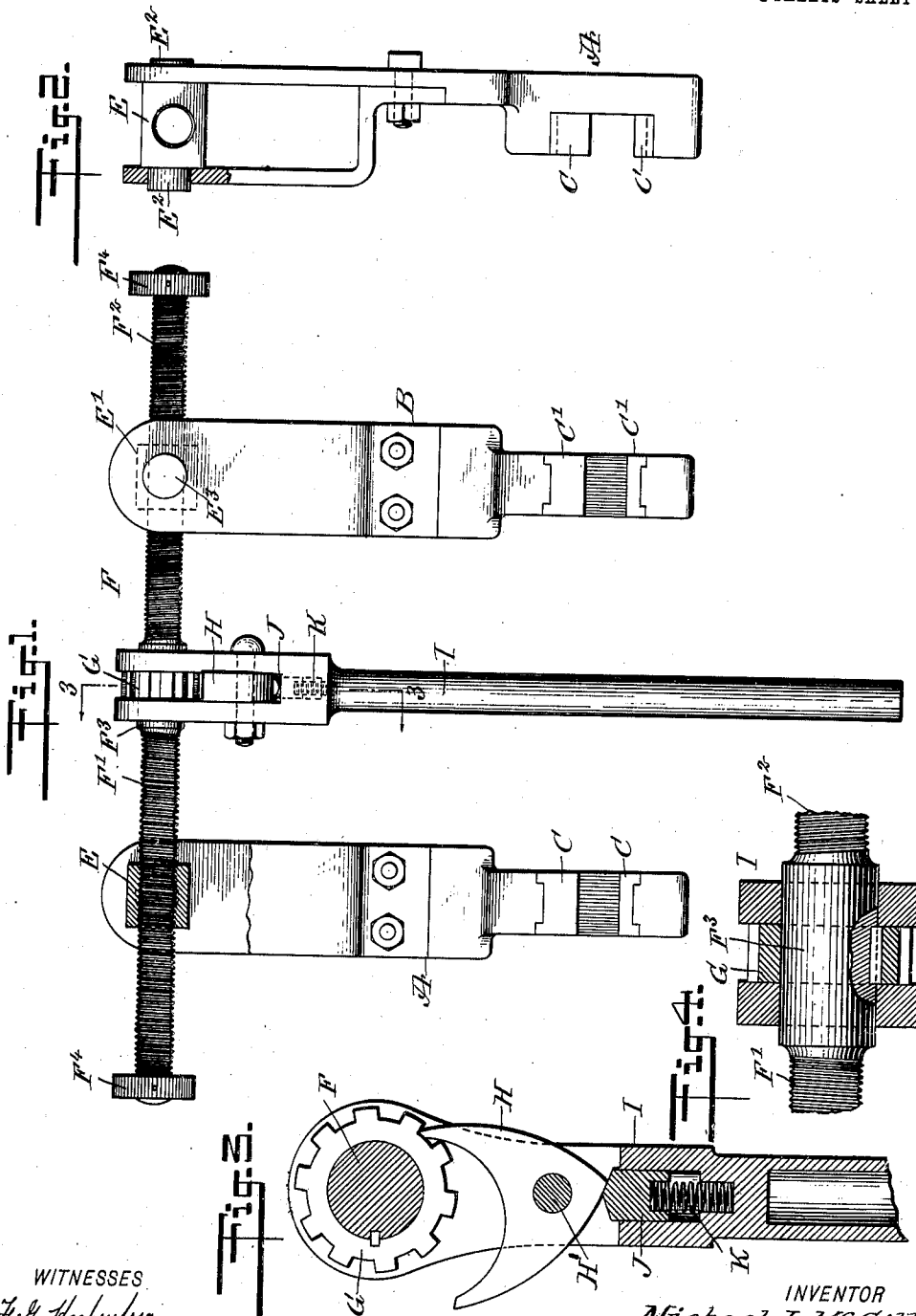


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APPLICATION FILED OCT. 29, 1908.

922,942.

Patented May 25, 1909.

2 SHEETS—SHEET 1.



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Fig. 5.

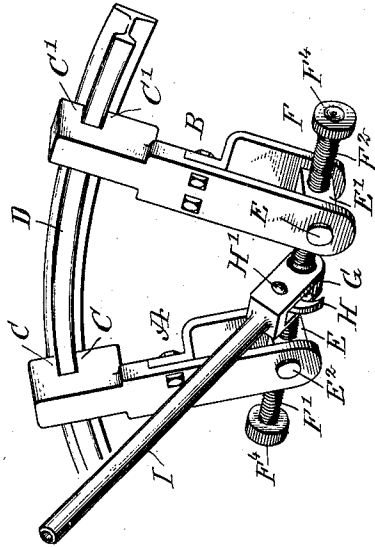
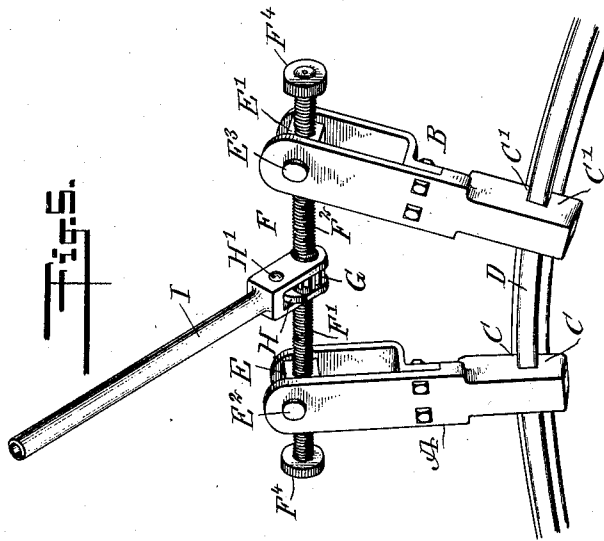


Fig. 6.



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UNITED STATES PATENT OFFICE.

MICHAEL JOSEPH MCGILL, OF PARK CITY, UTAH.

BENDING-MACHINE.

No. 922,942.

Specification of Letters Patent.

Patented May 25, 1909.

Application filed October 29, 1908. Serial No. 460,034.

To all whom it may concern:

Be it known that I, MICHAEL J. MCGILL, a citizen of the United States, and a resident of Park City, in the county of Summit and State of Utah, have invented a new and Improved Bending-Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved bending machine, more especially designed for bending rails, pipes and other articles in a very simple manner and without requiring much physical exertion on the part of the operator, the machine being portable and hence very serviceable for use in mines and other places.

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

A practical embodiment of the 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, parts being in section; Fig. 2 is a side elevation of one of the gripping arms, part being in section; Fig. 3 is an enlarged transverse section of the pawl and ratchet mechanism for turning the screw rod, the section being on the line 3—3 of Fig. 1; Fig. 4 is a sectional plan view of the same; Fig. 5 is a perspective view of the improvement as applied for bending a rail outwardly; and Fig. 6 is a similar view of the improvement as applied for bending a rail inwardly.

The spaced gripping arms A and B of the bending machine are provided near one end with sets of interchangeable jaws C; C and C', C', adapted to engage the article to be bent, for instance, as shown in Figs. 5 and 6, to engage the heads of rails D to be bent to suit a desired curvature in the track. The other ends of the gripping arms A and B are preferably forked, and in the forks are arranged nuts E and E', provided with trunnions E², E³ journaled in the members of the forked ends of the gripping arms A and B, as plainly illustrated in the drawings. Right and left-hand screw threads F', F² on a screw rod F screw in the nuts E and E', so that when the screw rod F is turned in one direction the nuts E and E' move toward each other, and when the screw rod F is turned in the opposite direc-

tion then the nuts E and E' move apart. When the jaws C, C and C', C' engage the rail D or other article at points spaced apart as indicated in Figs. 5 and 6, and the screw rod F is turned, then the outer or free ends of the gripping arms A and B are moved toward each other, so that the rail D is bent correspondingly, that is, in an outward direction, in case the gripping arms A and B extend outward from the rail as shown in Fig. 5, or the rail D is bent inward as illustrated in Fig. 6, in case the gripping arms A and B extend inward from the rail.

In order to impart the desired turning motion to the screw rod F, the following arrangement is made: On the middle non-threaded portion F³ of the screw rod F is secured a toothed wheel G adapted to be engaged on either side by a double pawl H fulcrumed at H' on a hand lever I, loosely fulcrumed on the non-threaded portion F³ of the screw rod F, the said hand lever I being preferably forked, to straddle the toothed wheel G, as plainly indicated in the drawings. The double heel of the pawl H is engaged by a yielding mounted retaining pin J mounted to slide in the hand lever I, and pressed on by a spring K, so as to normally hold the pin J in engagement with the corresponding side of the heel of the pawl H, to hold the corresponding end of the pawl in engagement with the right or left side of the toothed wheel G, to turn the screw rod F in the desired direction on swinging the hand lever I forward and backward. Thus when it is desired to turn the screw rod F in one direction, the pawl H engages one side of the toothed wheel G, as shown in Fig. 3, and when it is desired to turn the screw rod F in the opposite direction, it is only necessary for the operator to change the position of the pawl H, so that the latter engages the opposite side of the toothed wheel G, as will be readily understood by reference to Fig. 3. Now by the arrangement described the operator can conveniently turn the screw rod F by manipulating the hand lever I, as above described, so that the nuts E and E' are shifted on the screw rod F with a view to impart a swinging motion to the gripping arms A and B held on the rail D or other article to be bent.

By providing the gripping arms A and B with sets of interchangeable jaws C, C and C', C' it is evident that articles of various

sizes and shapes may be readily gripped by the jaws by using jaws of corresponding shape and size.

5 The device shown and described can be conveniently carried about and applied to the article to be bent, thus rendering the device exceedingly serviceable for use in mines and other places.

10 The bending machine is very simple and durable in construction, and is composed of comparatively few parts, not liable easily to get out of order.

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

20 1. A bending machine, comprising a pair of spaced gripping arms having means at one end for engaging the rail or other article to be bent, and manually-controlled means connected with the other ends of the said gripping arms for moving the said ends toward or from each other.

25 2. A bending machine, comprising a pair of spaced gripping arms having means at one end for engaging the rail or other article to

be bent, nuts having trunnions journaled on the other ends of the said gripping arms, a right and left-hand screw rod screwing in the said nuts, and a manually-controlled mechanism for turning the said screw rod. 30

3. A bending machine, comprising a pair of spaced gripping arms having interchangeable sets of jaws at one end, nuts provided with trunnions journaled in the other end of the said gripping arms, a screw rod having 35 right and left-hand threads screwing in the said nuts, a ratchet wheel secured on the said screw rod intermediate the right and left-hand threads thereof, a hand lever fulcrumed loosely on the said screw rod, and a spring- 40 pressed pawl fulcrumed on the said hand lever and adapted to engage either side of the said ratchet wheel.

In testimony whereof I have signed my name to this specification in the presence of 45 two subscribing witnesses.

MICHAEL JOSEPH MCGILL.

Witnesses:

GEORGE U. QUINN,
O. C. LOCKHART.