(No Model.)

J. M. MARTIN.

IMPLEMENT FOR REMOVING NUTS.

No. 415,114. Patented Nov. 12, 1889.

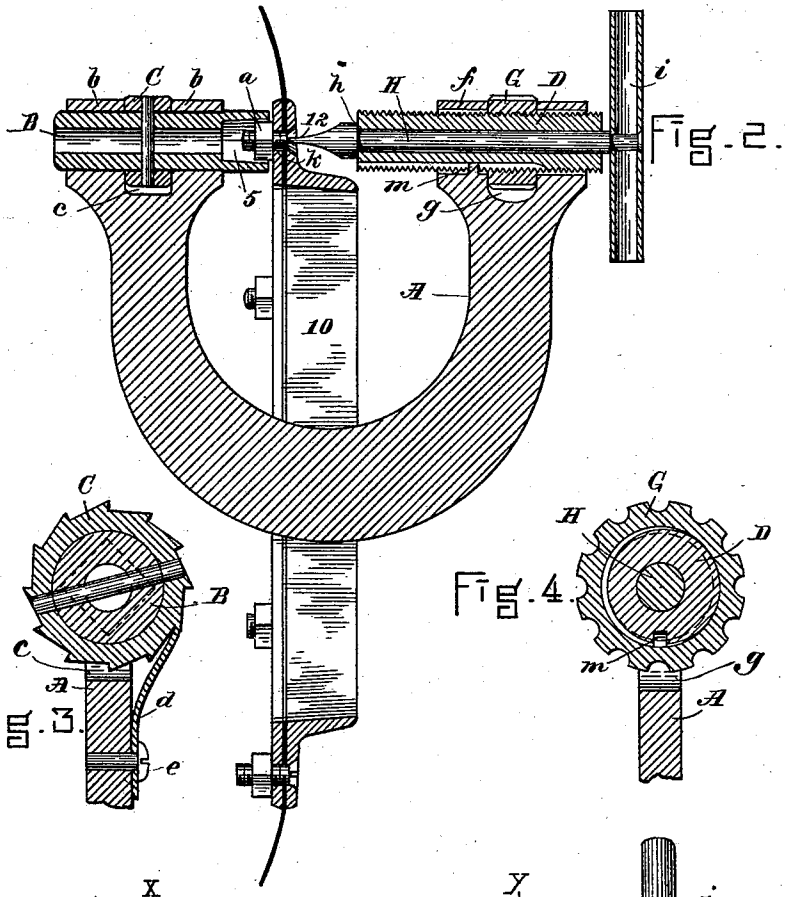


Fig. 2.

Fig. 3.

Fig. 4.

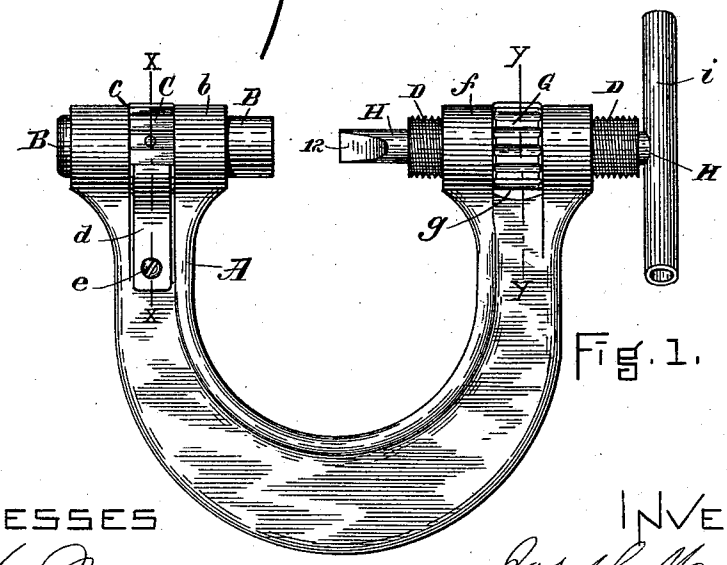


Fig. 1.

WITNESSES

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IMPLEMENT FOR REMOVING NUTS.

SPECIFICATION forming part of Letters Patent No. 415,114, dated November 12, 1889.

Application filed August 1, 1889. Serial No. 319,430. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. MARTIN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Implement for Removing Nuts from the Ends of Bolts Located on the Insides of Stoves and in other Positions Difficult of Access, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of an implement, constructed in accordance with my invention, for removing nuts from the ends of bolts. Fig. 2 is a longitudinal section of the same, illustrating its mode of operation in removing a nut from the end of a bolt on the inside of a parlor-stove. Fig. 3 is an enlarged section on the line *x x* of Fig. 1. Fig. 4 is an enlarged section on the line *y y* of Fig. 1.

My invention has for its object to provide a simple, reliable, and inexpensive implement for removing nuts from the ends of bolts located on the insides of stoves and in other positions difficult of access.

Heretofore much trouble has been experienced in removing the nuts used for securing in place the door-frames of parlor-stoves when it is desired to make repairs on the same, as these nuts become badly corroded by rust and the flame and products of combustion to which they are exposed, and attempts to remove them often result in the fracture of the door-frame, which occasions considerable loss.

To overcome this difficulty is the object of my invention, which consists in a bifurcated stock or handle provided at one end with a socket for the reception of the nut to be removed from the bolt, and at the opposite end with a shaft or spindle movable in the direction of its length toward and from the nut socket in line therewith, and adapted to engage with the head of the bolt from which the nut is to be removed, said shaft or spindle being adapted to be rotated to turn the bolt, as hereinafter set forth; and my invention also consists in certain novel combinations of parts and details of construction, as hereinafter set forth and specifically claimed.

In the said drawings, A represents a bifurcated stock or handle, preferably of U shape, as shown, within suitable bearings in one end *b* of which is placed a short shaft B, provided at its inner end with a square or angular socket 5 for the reception of the nut *a* to be removed, this end of the stock A being adapted to be introduced through the door-frame 10 of the stove, as seen in Fig. 2, in order to allow of the socket 5 being placed over the nut *a*. To the socket-shaft B, near the center of its length, is secured a ratchet-wheel C, which is fitted within a space or opening *c*, formed in the end *b* of the stock A, and is engaged by a spring-pawl *d*, Figs. 1 and 3, secured to said stock at *e*, whereby the shaft B is rotated as the stock or handle is moved in one direction by the hand of the operator, the pawl slipping over the teeth of the ratchet-wheel on the reverse movement of the said stock or handle. Within an aperture in the opposite end *f* of the stock A is fitted an externally-threaded hollow shaft or sleeve D, which slides with a spline or key *m* within said aperture, and over this sleeve D is fitted a hand-nut or wheel G, which rotates within a recess or space *g*, formed in the end *f* of the stock A, by which it is prevented from moving laterally; and thus, as the nut G is rotated, the sleeve D is caused to move in the direction of its length without rotating on its axis. Within the sleeve D, in line with the nut-socket 5 in the end of shaft B, is placed a shaft or spindle H, provided near its inner end with a shoulder *h*, which bears on the inner end of the sleeve D, the opposite end of the shaft H being provided with a handle *i*, placed at right angles thereto to afford a firm grasp for the hand of the operator. The inner end of the shaft H is made tapering to form a wedge-shaped point 12, which, when the sleeve D is advanced by rotating the nut G, as above described, is adapted to engage with the notch in the end of the head of the bolt *k*, from which the nut *a* is to be removed. When the parts are in this position, as seen in Fig. 2, the operator grasps the handle *i* with one hand, thus preventing the bolt *k* from being turned, and with the other hand reciprocates or oscillates the stock or handle A, which causes the pawl *d* to en-

gage with the teeth of the ratchet-wheel C and turn the same, thus intermittingly rotating the socket-shaft B, and causing the nut *a* within the socket 5 to be turned upon its bolt *k* for the purpose of removing it therefrom, the nut, as it is unscrewed, being forced back into the socket 5, which is of considerable depth, to admit the projecting end of the bolt *k*. After the nut *a* is started, the stock A is held stationary, and the bolt *k* turned by rotating the shaft H by means of the handle *i*, which will enable the nut to be removed more rapidly than could be effected by oscillating the stock A. As soon as the nut is removed or sufficiently unscrewed to admit of its being easily turned by the hand, the shaft H is withdrawn from the head of the bolt *k* by rotating the nut G backward, when the implement can be easily taken out of the stove or placed over the next nut to be removed.

Although the above-described implement is especially adapted for removing nuts from the inside of parlor and other stoves, it is obvious that it may be employed with advantage to remove nuts from bolts located in other positions difficult of access, and that it will be found exceedingly useful in many locations where an ordinary wrench cannot be employed for want of sufficient space to operate it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An implement for removing nuts from bolts, consisting of a bifurcated stock or handle provided at one end with a socket for the reception of the nut to be removed from the bolt and at the opposite end with a shaft or spindle movable in the direction of its length toward and from the nut-socket in line therewith, and adapted to engage with the head of the bolt from which the nut is to be removed, said shaft or spindle being adapted to be rotated to turn the bolt, substantially as and for the purpose set forth.

2. An implement for removing nuts from bolts, consisting of a bifurcated stock or handle provided at one end with a socket for the reception of the nut to be removed from the bolt, and at the opposite end with a shaft or spindle movable in the direction of its length toward and from the nut-socket in line therewith, and adapted to engage with the head of the bolt from which the nut is to be removed, combined with a ratchet-wheel and pawl, whereby the nut is turned independently of the bolt as the stock or handle is oscillated, substantially as set forth.

3. In an implement for removing nuts from bolts, a bifurcated stock or handle provided at one end with a shaft, having a socket for holding the nut to be turned, said shaft being adapted to be intermittingly rotated by a ratchet-wheel and pawl as the stock or handle is oscillated, in combination with a bolt-holding shaft or spindle projecting from the opposite end of the stock in line with the nut-socket, and movable in the direction of its length toward and from the same to enable it to engage with the notched head of the bolt, and having at one end a handle and at the other end a flattened or wedge-shaped point adapted to enter the notch in the head of the bolt from which the nut is to be removed, substantially as set forth.

4. In an implement for removing nuts from bolts, the combination, with the stock or handle A, of the rotary shaft B, provided with a nut-socket 5, and adapted to be intermittingly rotated by the ratchet-wheel C and pawl *d*, as the stock A is oscillated, the bolt-holding shaft H, with its flattened point 12 and handle *i*, the externally-threaded sleeve D, encircling and carrying the bolt-holding-shaft H, and sliding with a spline or key within an aperture in the end *f* of the stock A, and the nut G, adapted to operate the sleeve D in the direction of its length and advance or withdraw the shaft H, carried thereby, all operating substantially in the manner and for the purpose set forth.

Witness my hand this 30th day of July, A. D. 1889.

JOSEPH M. MARTIN.

In presence of—
P. E. TESCHEMACHER,
HARRY W. AIKEN.