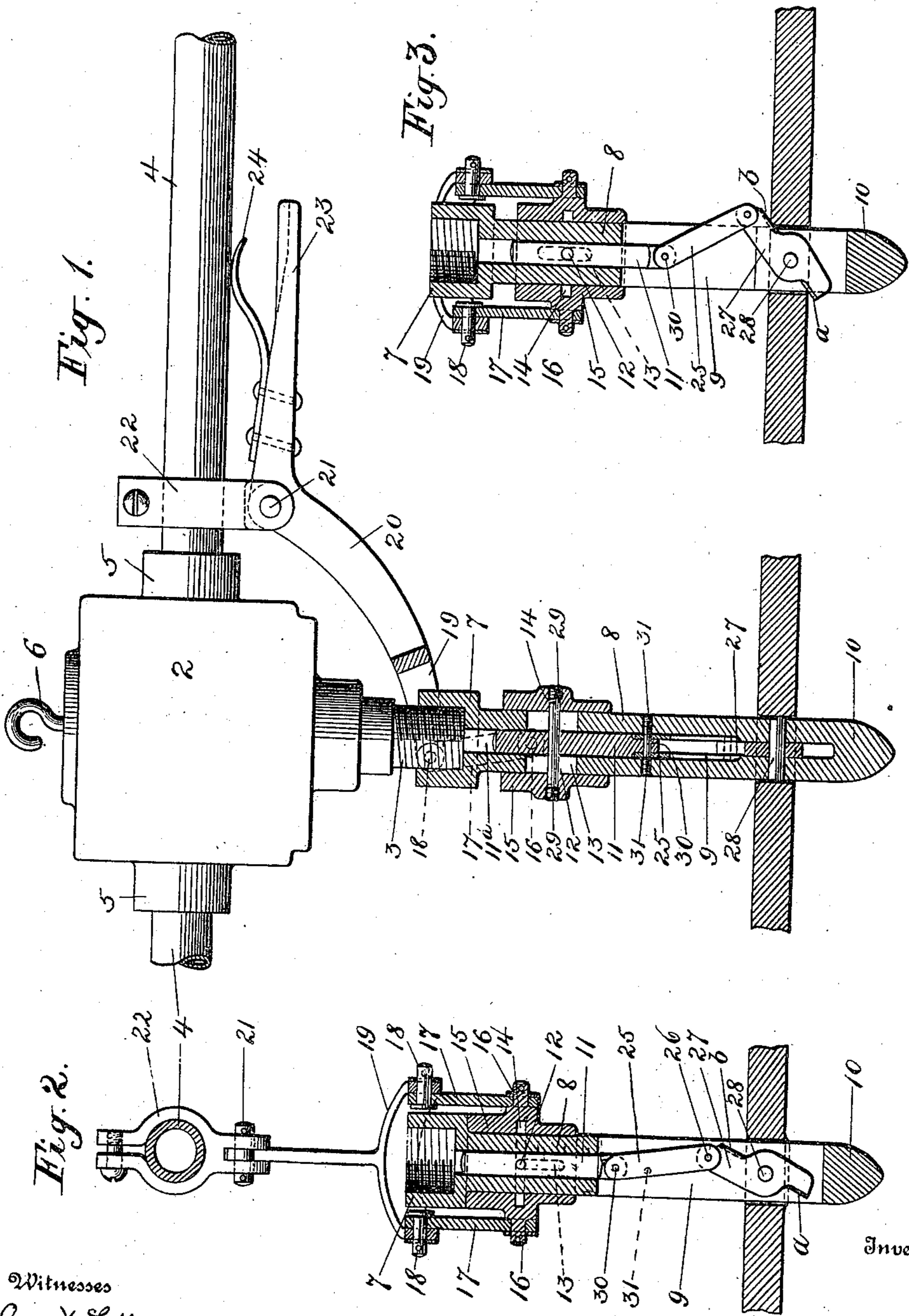


A. J. SELLERS.
BUR REMOVER.

APPLICATION FILED JUNE 26, 1909.

963,725.

Patented July 5, 1910.



Witnesses
Jesse X. Lutton.
Geo. Maier

By

Albert Jacob Sellers

Inventor

Attorney

UNITED STATES PATENT OFFICE.

ALBERT JACOB SELLERS, OF STEELTON, PENNSYLVANIA, ASSIGNOR TO THE PENNSYLVANIA STEEL COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BUR-REMOVER.

963,725.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed June 26, 1909. Serial No. 504,545.

To all whom it may concern:

Be it known that I, ALBERT JACOB SELLERS, a citizen of the United States, residing at Steelton, county of Dauphin, State of Pennsylvania, United States of America, have invented certain new and useful Improvements in Bur-Removers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

My invention relates to bur removers and has for its object to provide a simple and efficient tool capable of being readily manipulated by the workman for removing the burs surrounding holes punched or otherwise formed in metal such as in structural iron and steel and comprises a suitable spindle adapted to pass through the hole from which the bur is to be removed. In this spindle is formed a slot and in the slot is provided a hand controlled bur removing element or knife capable of being positively moved into and out of the slot, together with the details of construction hereinafter described and claimed.

Referring to the drawings in which like parts are similarly designated, Figure 1 is a view partly in elevation and partly in section. Fig. 2 is a view taken at right angles to Fig. 1 with the motor omitted, showing the spindle being inserted into a hole for removing a bur. Fig. 3 is a view similar to Fig. 2 showing the knife in operation.

It is customary in many cases to remove the burs surrounding punched holes from structural iron or steel in order that superposed plates may fit closely together and form a more solid connection after riveting through said holes and to this end I have designed a power driven tool to do the work heretofore done by hand, and to do it simultaneously on opposite sides of the plate.

The bur remover consists of a casing 2 containing an electric, pneumatic, steam or any other form of motor capable of imparting rotation to a rotary member or shaft 3 journaled in the casing 2. When an electric motor is used the shaft 3 forms preferably,

but not necessarily, an extension of the rotor shaft.

The details of construction of the motor form no part of my invention.

The casing 2 is provided with alined handles or arms 4 secured in bosses 5 on each side of the casing 2. At the top of the motor case I provide a hook or equivalent device 6 by means of which the bur remover may be suspended from a counterweighted rope, chain or the like, or it may be suspended from a small crane in order to relieve the workman of as much weight as possible.

Removably secured to the driven shaft 3 in any suitable manner and here shown as being screwed thereto is the enlarged end 7 of a spindle 8. This enlarged end 7 is interiorly threaded to screw onto the threaded end of shaft 3. This spindle is provided between its ends with a longitudinal or long slot 9 extending entirely through the spindle so positioned that the lower pointed end of the spindle 10 remains solid. Extending from the enlarged end 7 of the spindle into the slot 9 is a bore 11^a and slidable in this bore is a rod 11. Passing transversely through the rod 11 is a pin 12 projecting somewhat beyond the surface of the spindle 8 and capable of being reciprocated in and to the extent of short slots 13 in the upper part of the spindle. The ends of rod 12 project into an annular groove 14 on the interior of a collar 15 capable of sliding on the spindle 8. This collar is provided with oppositely situated lugs or equivalents on which the lower ends of the links 17 are pivoted and whose upper ends are connected by pivot pins 18 to a yoke 19, which yoke forms one end of a two armed actuating lever 20 pivoted at 21 in a collar 22 adjustably secured to one of the arms 4. The other end of the actuating lever 20 is formed as a hand grip 23 that is urged by a spring 24 connected thereto and having bearing against the arm 4. The lower end of rod 11 is pivotally connected to a pair of links 25, one on each side of the rod, which in turn are pivotally connected at 26 to a knife or scraper 27 pivoted at 28 within the long slot 9. This knife or scraper has two oppositely beveled scraping or cutting edges *a* and *b* and when the spindle is inserted in a hole ready for operation the

two edges of the knife or scraper are inclined to simultaneously engage opposite edges of the hole. The pin 12 may be readily removed by removing the screw plugs 29 from the collar 15 and the pin 30 connecting the link 25 to the rod 11 may be readily removed by removing the screw plugs 31 and driving the pin out by means of a punch or the like.

10 The operation of the device is as follows: The spring 24 acting on the lever 20 holds the collar 16 in its uppermost position and thereby holds the knife 27 in the position shown in Fig. 2 wholly within the slot 9 of the spindle 8. The lower solid pointed or ogival end 10 of the spindle can be readily inserted within a hole in the work while the spindle is in rotation. The entire tool is moved by means of the handles or arms 20 4 downward so as to cause the spindle to pass into the hole. This being readily done by reason of the tool being counterweighted when rigged for use. The motor being in movement the spindles 3 and 8 are in continuous rotation and as soon as the tool has passed through the hole to a sufficient extent the grip 23 is pressed against the arm or handle 4 thereby shoving down the collar 15 and causing the knife to rotate on its pivot 28 into the position shown in Fig. 3 whereby the cutting edges *a* and *b* which are oppositely beveled quickly remove the bur from both the upper and the lower corners.

35 It is obvious that the tool may be used as a counter sink also, by simply prolonging the action of the knife on the work.

I claim—

40 1. In a bur remover, a rotatable spindle having a longitudinal slot and a solid end, a reciprocable rod mounted within the spindle and capable of moving into the slot, a knife having two longitudinal cutting edges oppositely directed, a pivot for the knife between 45 the edges, means to operatively connect the knife and rod, a sleeve loose on the spindle and means to connect the rod and sleeve to permit the rotation of the former in relation to the latter.

50 2. In a bur remover, a rotatable spindle having a longitudinal slot extending there-through and a solid end, a reciprocable rod mounted within the spindle and capable of moving into the slot, a knife pivoted within 55 the slot in the lower end thereof, links con-

necting said knife and rod, and hand-operated means for reciprocating said rod at will.

3. In a bur remover, a rotatable spindle having a slot therein, a reciprocable rod 60 mounted in the spindle, a knife pivoted in the slot, means to connect the rod and knife and a non-rotatable collar adapted to reciprocate the rod.

4. In a bur remover, a casing having lat- 65 erally extending handles, a motor driven shaft therein, a spindle rigidly connected to the shaft and having a slot therein, a knife pivoted intermediate its ends in the slot, a rod reciprocable in the spindle, means to 70 connect the rod and knife and means to reciprocate the rod.

5. In a bur remover, a casing having lat- erally extending handles, a suspending hook on the casing, a motor-driven shaft in the 75 casing, a spindle rigidly connected to the shaft having a solid ogival end and two slots, a rod reciprocable in the spindle, a pin extending through the rod and one of the slots, a collar having an internal groove in 80 which the ends of the pin are free to move, a two-edged knife pivoted in the other slot above the end and means to connect the rod and knife.

6. In a bur remover, a casing having lat- 85 erally extending handles, a motor-driven shaft in the casing, a spindle connected to the shaft and having a slot, a bur-removing knife pivoted in the slot, a non-rotatable collar on the spindle, means between the 90 collar and knife to actuate the latter, a collar adjustable along one of the handles and an actuating lever pivoted in the latter collar to reciprocate the first named collar.

7. In a bur remover, a rotatable spindle 95 having a slot therein, a cutter pivoted in the slot and having a cutting edge on each side thereof, one on each side of the pivot point, and means to actuate the cutter during the rotation of the spindle, whereby said cutter 100 will simultaneously act on both edges of the hole.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

ALBERT JACOB SELLERS.

Witnesses:

GEO. W. PARSONS,
ALBERT F. LEEDS.