L. R. BLACKMORE.

PIPE WRENCH.

APPLICATION FILED JUNE 5, 1909.

974,020. Patented Oct. 25, 1910.

Fig. 1.

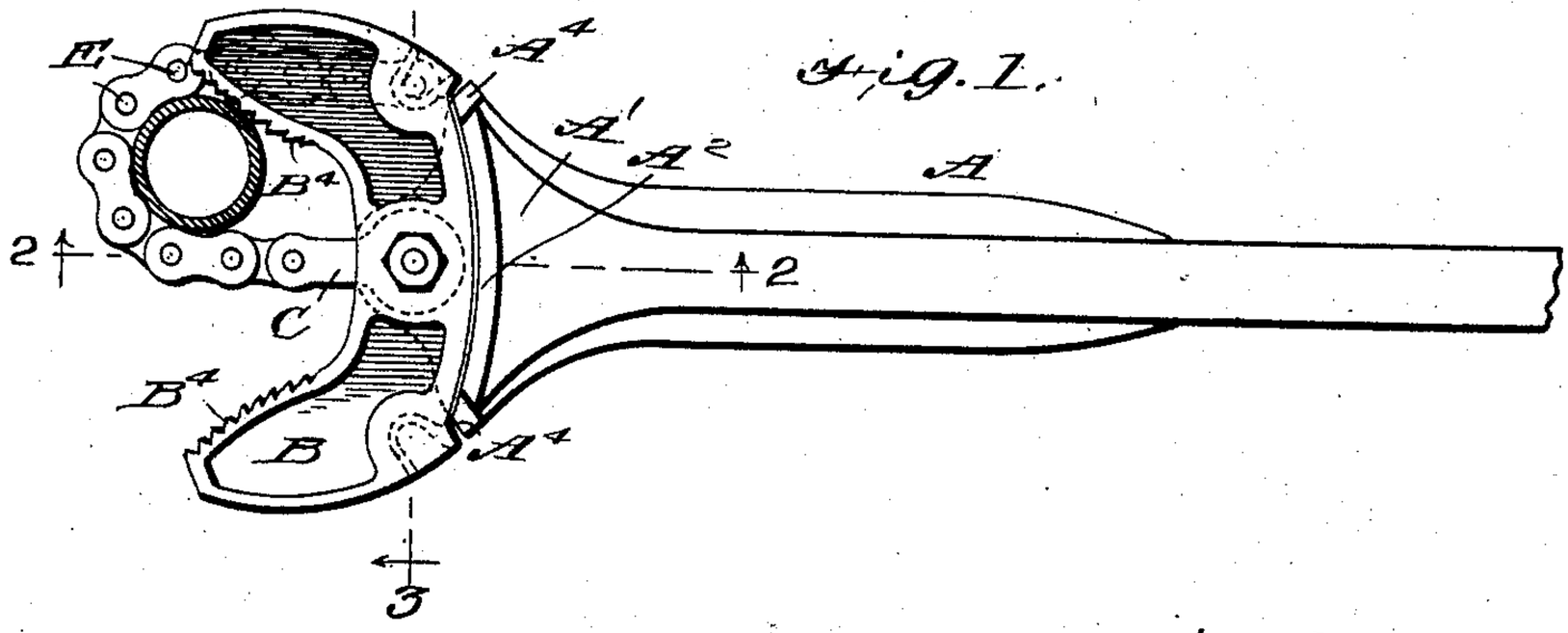


Fig. 2.

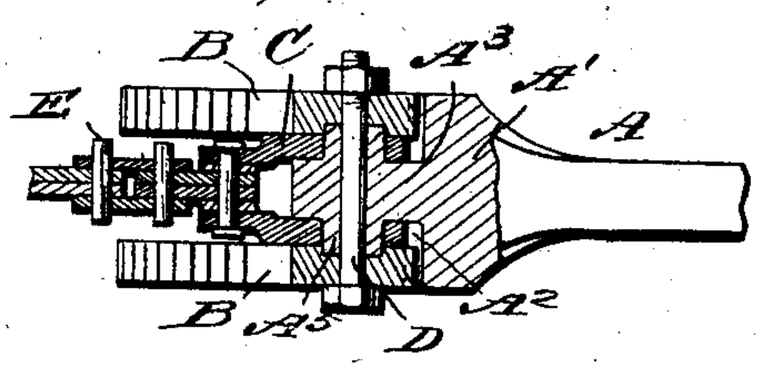


Fig. 3.

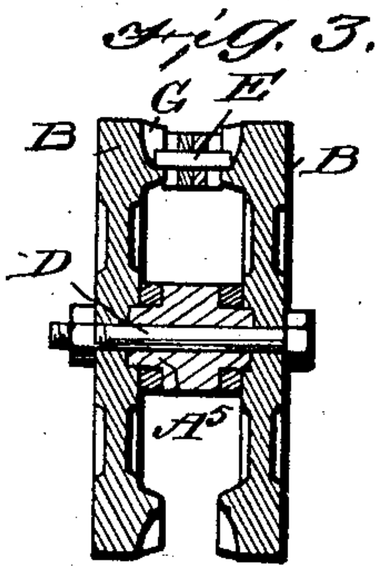


Fig. 4.

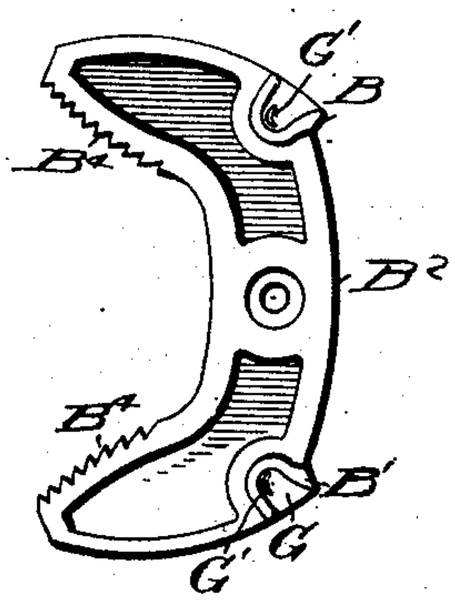


Fig. 5.

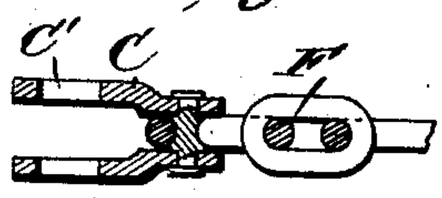


Fig. 7.

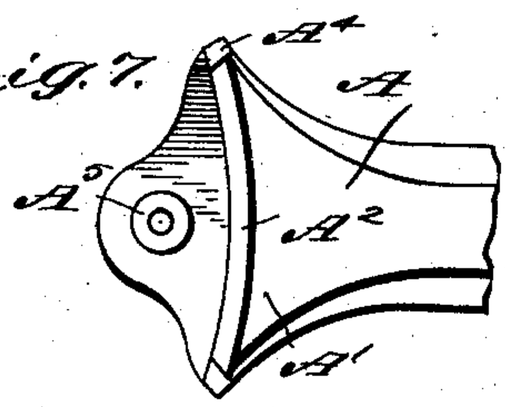
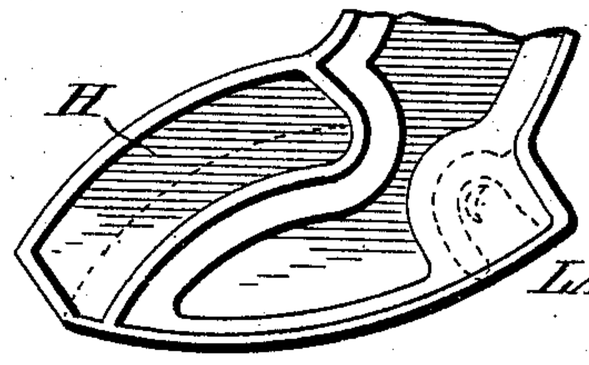


Fig. 6.



WITNESSES

F. C. Barry

Perry B. Turpin.

INVENTOR

LAWRENCE R. BLACKMORE.

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

LAWRENCE R. BLACKMORE, OF McKEESPORT, PENNSYLVANIA.

PIPE-WRENCH.

974,020. Specification of Letters Patent. Patented Oct. 25, 1910.

Application filed June 5, 1909. Serial No. 500,329.

To all whom it may concern:

Be it known that I, LAWRENCE R. BLACKMORE, a citizen of the United States, and a resident of McKeesport, in the county of Allegheny and State of Pennsylvania, have made certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

This invention is an improvement in chain pipe wrenches, and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawings Figure 1 is a side view of a wrench embodying my invention. Fig. 2 is a detail section on about line 2—2 of Fig. 1. Fig. 3 is a cross section on about line 3—3 of Fig. 1. Fig. 4 is a detail side elevation of the inner face of one of the duplex jaw sections. Fig. 5 is a detail view, partly in section, showing a different form of chain from that illustrated in Figs. 1 and 2, and Fig. 6 is a detail side view of one of the jaw sections showing a supplemental jaw face, and Fig. 7 is a detail side view of the wrench head.

The wrench as shown, comprises a handle A, having at one end a head A′, provided with a concave seat A^2, and with a stem A^3 projecting beyond the concave seat. This stem is of a width less than the width of the head A′, when the latter is viewed edgewise as shown in Fig. 2, so that the portions of the head project laterally beyond the stem A^3 and form unbroken seats for the jaw sections B, when the latter are applied thereto as will be understood from Figs. 1 and 2 of the drawings. I also reinforce the head A′ at the opposite ends of the seat A^2 by forming lugs A^4 thereon which form abutments for the shoulders B′ at the ends of the convex surfaces B^2 formed on the inner edges of the jaws B, to coincide with the seats A^2, such shouldered and lug construction increasing the strength of the parts where strain is exerted in operating the wrench as will be understood from Fig. 1.

On opposite sides of the stem A^3 I provide lateral bosses A^5, which project in opposite directions and are preferably made of a length greater than the thickness of the connecting links C of the chain, so that the said bosses will project through the openings C′ in the links C and beyond the said links and thus enter sockets in the inner faces of the jaws B, and operating to reinforce the bolt D in securing the jaws B upon the head A′. This bolt D it will be noticed extends through alined openings in the stem A^3, and the jaws B and may be secured in any suitable manner. When the parts are assembled as shown in Figs. 1 and 2, the bolt D operates to retain the jaws B, and also hold the connecting links C upon the lateral studs A^5 of the stem A^3. The chain extends from the connecting links C and may be of the sprocket form shown in Figs. 1, 2 and 3, with the lateral studs E, or it may be of the open link construction shown at F in Fig. 5. On their inner faces the duplex jaw sections B are provided at their rear edges with seats G rounded as shown in Fig. 3, to receive the ends of links F and notched at G′ within said rounded seats to receive the ends of the studs E, or the wrench may be used with other forms of chain, the links C being the same in both instances.

The jaws B are provided on their working faces with the teeth B^4 arranged opposite each other as shown in Figs. 1 and 4, so the wrench may be operated in either direction as may be desired in the practical use of the invention.

Manifestly, the wrenches may be made in different sizes to suit the work for which they are designed, and in making large wrenches I prefer to provide the jaws with separate jaw faces H as shown in Fig. 6, as these may be made of a higher grade of carbon steel the other parts of the jaws being in such instances made of ordinary bar steel, thus reducing the cost without materially affecting the efficiency of the wrench.

I claim—

1. The wrench herein described comprising a handle provided with a wrench head having a concave seat, and a stem projecting beyond the same and provided on its opposite sides with lateral bosses, and with a transverse opening through the same, a chain having connecting links fitting over said bosses, duplex jaw sections fitting at their inner edges the said concave seat of the wrench head, and provided with sockets receiving the ends of the lateral bosses of the stem, the said jaws fitting against the connecting links and retaining the same on the bosses, and a bolt passing through the same and the jaw sections and securing the same to the stem, each of said jaw sections

being provided with opposite toothed faces and having on its inner face at its rear edge seats for engagement by the chain, and having its rear edge shouldered to engage with the wrench head at the opposite ends of the concave seat thereof, all substantially as and for the purposes set forth.

2. The combination of a wrench head having a stem provided with lateral bosses, a chain having connecting links fitting on said bosses, jaw sections fitting at their inner faces over the ends of the bosses and retaining the connecting links thereon, and a bolt securing the jaw sections, substantially as set forth.

LAWRENCE R. BLACKMORE.

Witnesses:
G. C. BLACKMORE,
WM. M. NOBLE.