

(No Model.)

K. A. KLOSE.
PIPE WRENCH.

No. 542,265.

Patented July 9, 1895.

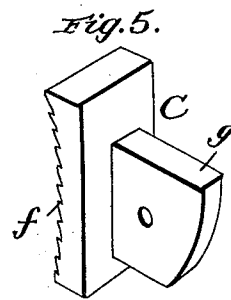
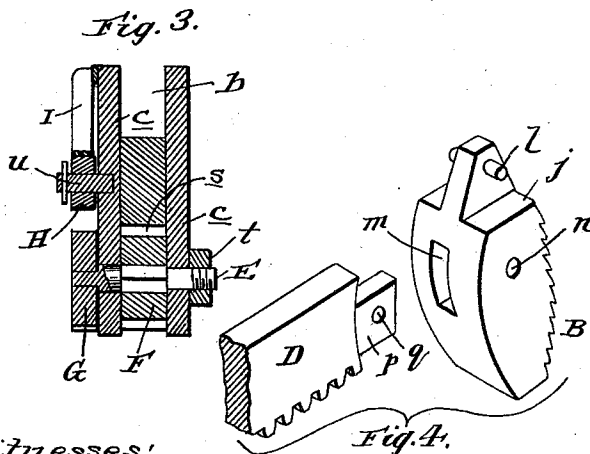
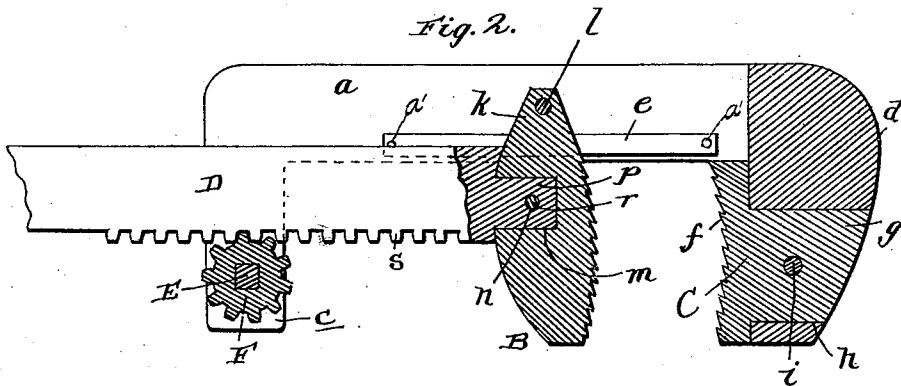
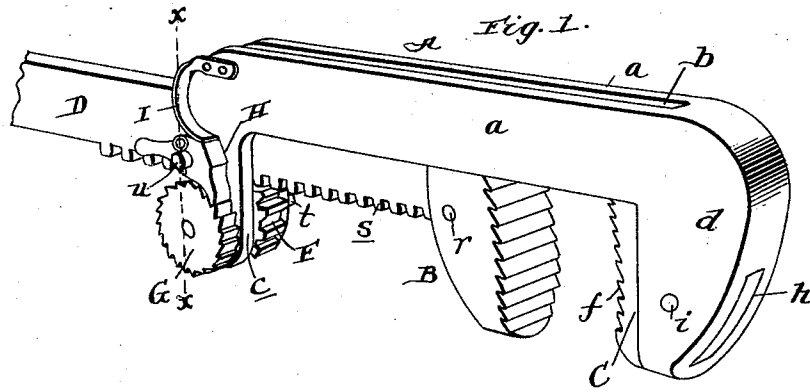


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

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PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 542,265, dated July 9, 1895.

Application filed November 5, 1894. Serial No. 527,963. (No model.)

To all whom it may concern:

Be it known that I, KARL AUGUST KLOSE, a citizen of the United States, residing at Richfield, in the county of Hennépin and State of Minnesota, have invented certain new and useful Improvements in Pipe-Wrenches; and I do 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.

This invention relates to a pipe-wrench, and is designed as an improvement upon the wrench shown and described in the Letters Patent granted to me under date of May 29, 1894, No. 520,529.

The improvements and the many advantages of the invention will appear from the following description and claims, when taken in connection with the annexed drawings, in which—

Figure 1 is a perspective view of the wrench constructed according to my invention, with the handle partly broken away. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a cross-sectional view taken in the plane indicated by the dotted line xx on Fig. 1. Fig. 4 is a perspective view of a part of the handle and also the slidable jaw, and Fig. 5 is a similar view of the outer or stationary jaw.

Referring by letter to said drawings, A indicates the frame of the wrench. This frame is of a form substantially as shown, having two parallel branches a , arranged at a sufficient distance apart to form the way or space b . These parallel branches terminate at their inner ends in two depending parallel lug-journals c , and the opposite end of the frame terminates in a depending head d to seat a removable jaw, as will be presently described. On the inner sides of the parallel branches a , and at a suitable distance from the lower longitudinal edges thereof, I provide slide-bearings e , which are secured to said branches a by studs a' or other suitable fastening devices, although in some cases the said bearings may be formed on the branches. The head is hollow, so as to receive and seat the jaw C. This jaw C, which is preferably formed of steel, is provided with a toothed face f , and its back may be shaped to snugly bear against the head, an arm or tongue g

being provided thereon to enter the slot or aperture h of the head, and a hole is formed transversely through the head and also through the tongue or arm of the jaw to receive a securing pin or bolt i .

B indicates the adjustable jaw. This jaw has its engaging face toothed, as shown, and is shouldered at its upper end, as at j , to bear against the underside of the parallel branches a . The jaw B is furthermore provided on its upper side and centrally with an ear or lug k , which may be of a width corresponding to that of the handle, and in this lug or ear is a cross-pin or stud l , which projects sufficiently on either side to bear upon the slides e of the branches a .

D indicates the handle. This handle is designed to pass between the depending branches or lugs c and move back and forth therein. The jaw B is designed to be detachably connected to the handle, and in making a durable joint I recess the jaw in its back, as shown at m , and provide the same with a transverse hole or aperture n , and I provide the end of the handle with a tongue or reduced portion p , which is designed to enter the slot or recess m of the jaw and snugly bear therein, and I provide this tongue with a hole or aperture q , designed to register with the hole or aperture n of the jaw and receive a cross-pin or bolt r . The handle is provided for a sufficient distance in its length, on its lower edge, with rack-teeth s . The depending branches c of the frame have journaled in them a transverse shaft E, and on this shaft is a toothed pinion F, designed to engage the rack-teeth of the handle-bar. The shaft is of a rectangular form in cross-section, and the pinion is provided with an angular aperture to be received thereby, the shaft being rounded at each side of the angular seat for the pinion, so that it may turn freely in the hanger-arms or branches. On one end of this shaft, and on the outer side of said arms, is a ratchet-wheel G. The opposite end of the shaft may have a nut t or other suitable securing device.

H indicates a dog or ratchet-lever. This lever is pivoted on one side of the frame A, on a stud u , and is backed by a spring I, secured at one end to the main frame. The spring is designed to hold the dog or lever in

engagement with the teeth of the ratchet-wheel, so as to fix the position of the pinion, and consequently the position of the slidable jaw.

5 By the construction described it will be seen that the wrench may be cheaply manufactured, it being necessary to form the jaw only of steel, and as these jaws are detachable they can be readily removed and re-
10 placed by others when they become worn or impaired. The construction permits of a quick manipulation, it being simply necessary when it is desired to slide or adjust the jaws to take the main frame in one hand, and,
15 after depressing the dog or ratchet-lever, so as to disengage it from the ratchet-wheel, to slide the jaws to or from each other, as may be desirable, when by simply relieving the hand from the dog the spring, acting thereon,
20 will fix the position of the pinion and prevent further separation of the jaws. The jaws can be pushed toward each other without necessarily manipulating the dog, but will be prevented from casual separation.

25 Having described my invention, what I claim is—

1. The adjustable pipe wrench, comprising the frame having the two parallel branches,

provided on their inner sides with parallel slide bearings, and also having the seat for a removable jaw at one end and depending parallel branches at the opposite end, in combination with the slidable jaw, having the head constructed to slide below the under side of said parallel branches, and having the ear or
35 projection carrying the stud or cross pin, the detachable handle having the rack teeth, a pinion engaging said teeth and a suitable means for fixing the position of the pinion, substantially as specified.

2. A pipe wrench, comprising a frame, having a seat for a removable jaw, and also having arms or bearings for a transverse shaft, in combination with a transverse shaft, a pinion on the shaft, and a ratchet wheel also
45 on the shaft, a spring-backed dog for engaging the ratchet wheel, and a slidable jaw having a handle provided with teeth for engaging the pinion, substantially as specified.

In testimony whereof I affix my signature 50 in presence of two witnesses.

K. AUGUST KLOSE.

Witnesses:

FRANK HEALY,
J. COLFAX GRANT.