No. 725,124. PATENTED APR. 14, 1903.

R. J. NORTHAM.

WRENCH.

APPLICATION FILED JULY 24, 1902.

NO MODEL.

Fig. I

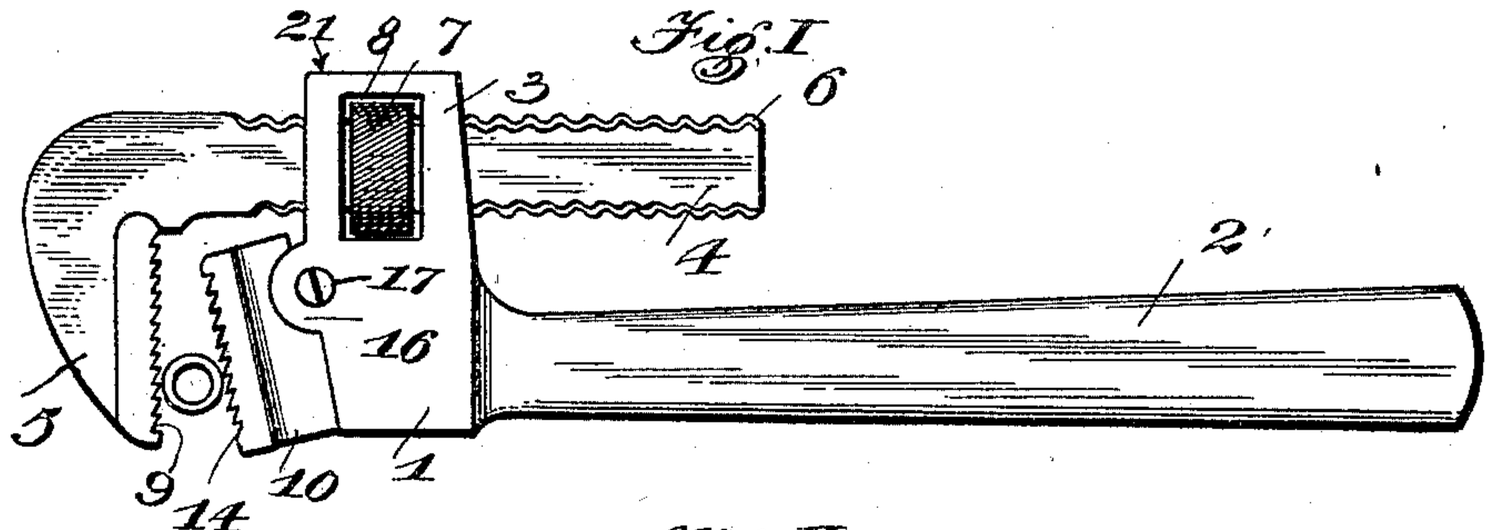


Fig. II

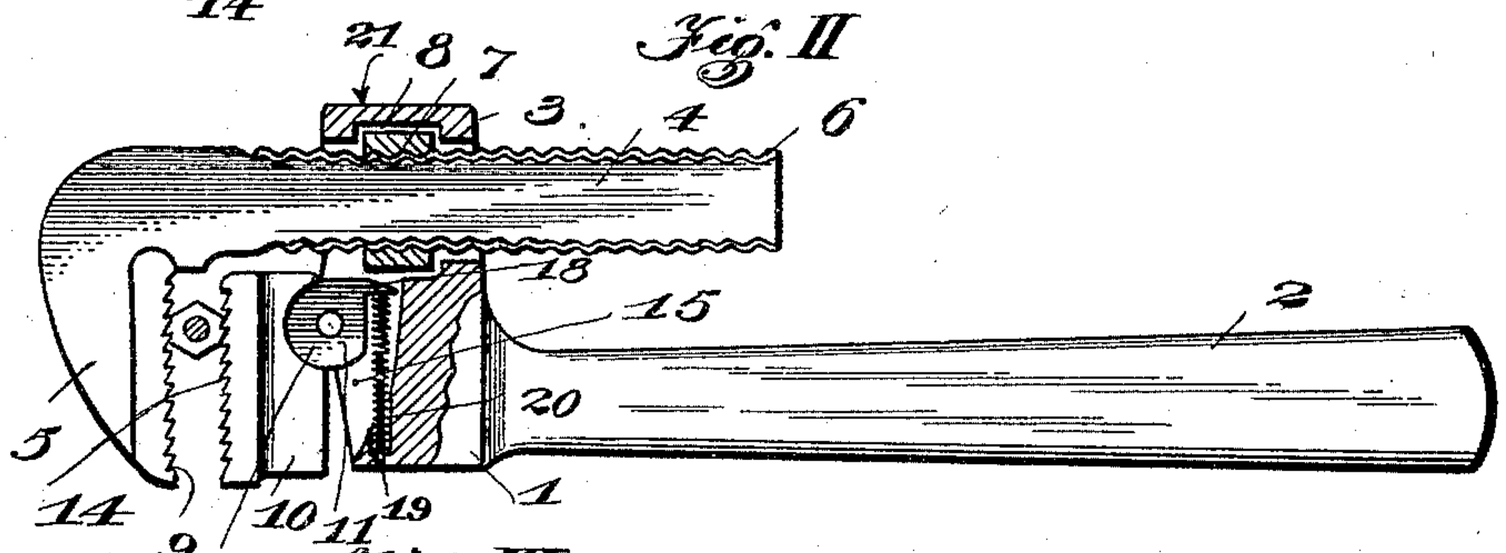


Fig. III

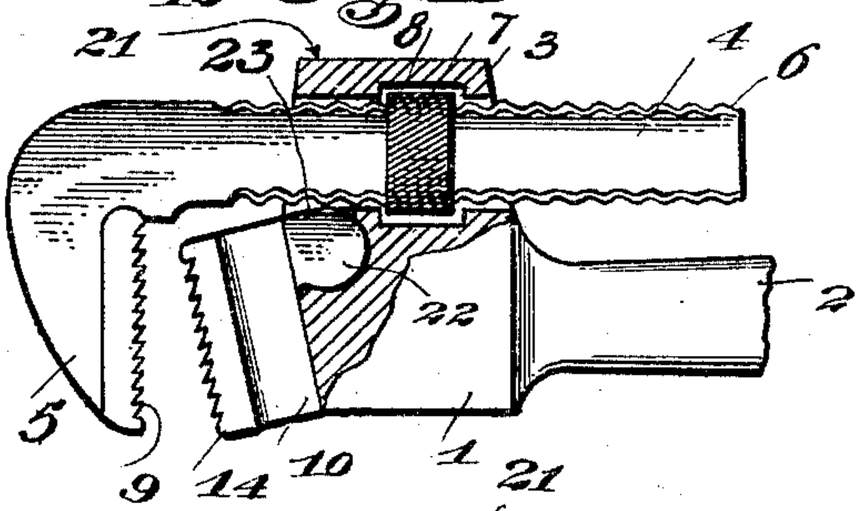


Fig. V

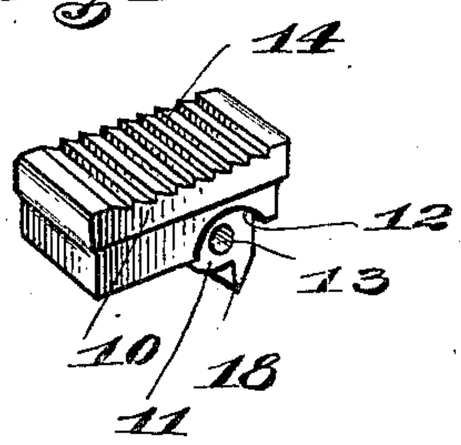
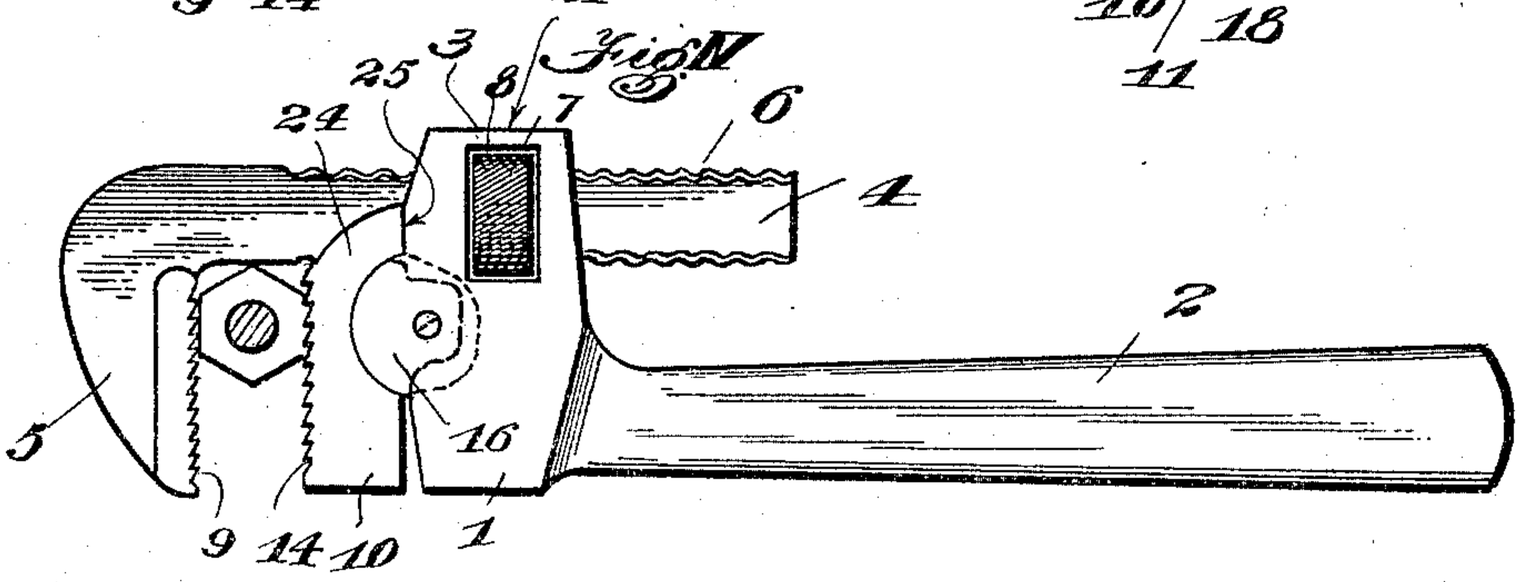


Fig. IV



Witnesses
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P. T. Hackley.

Inventor
Robert J. Northam
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his Attys.

UNITED STATES PATENT OFFICE.

ROBERT J. NORTHAM, OF HOLLYWOOD, CALIFORNIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 725,124, dated April 14, 1903.

Application filed July 24, 1902. Serial No. 116,845. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. NORTHAM, a citizen of the United States, residing at Hollywood, in the county of Los Angeles and State of California, have invented a new and useful Wrench, of which the following is a specification.

My invention relates to a wrench provided with a movable jaw which is adapted to be used either for pipes or other cylindrical objects and nuts and other shaped devices, and has for its object to provide a wrench which will automatically adapt itself to different-shaped articles and not require any especial adjustments therefor.

Another object is to provide a device which is simple in construction, effective in operation, and durable.

Referring to the drawings, Figure I is a side elevation of the wrench. Fig. II is a view showing the wrench as applied to a hexagonal nut, a portion of the wrench being shown in section. Fig. III is a view showing a modification, portions of the wrench being in section. Fig. IV is an another modification. Fig. V is a perspective of the pivotal jaw.

1 is a head carried by the handle 2. The head 1 is provided with a hollow extension 3, through which passes the shank 4 of a movable jaw 5. The shank 4 is threaded, as at 6.

7 is a knurled revoluble nut which lies within a slot 8, formed in the extension 3, and engages the thread 6 of the shank 4 for actuating the movable jaw. The jaw 5 may preferably be provided with a series of teeth 9.

10 is a pivoted jaw which is provided with a rearwardly-extending leaf 11. The rear face of the jaw 10 adjacent to leaf 11 is preferably cut away on opposite sides, as at 12, and circular recesses provided. The leaf 11 may be perforated, as at 13.

14 is a series of teeth formed on the face of the jaw 10.

The head 1 of the wrench is provided with a slot 15, in which lies the leaf 11. Projecting from the front of the head is a pair of oppositely-arranged ears 16. These ears project into and fit the curved recesses 11 in the jaw 10. The ears 16 form a pivotal support for the jaw 10 and give a very strong bearing, against which the jaw bears when under pressure.

The jaw 10 may be retained in position by means of the screw 17, which may pass through the ears 16 and the perforated leaf 11.

Extending from the rear of the leaf 11 is a projection 18, forming a shoulder. Projecting upwardly into the slot 15 from the lower portion of the head 1 is a pin 19, which forms a guide and support for a coiled spring 20, which encircles the same, one end bearing against the head 1 and the other end bearing against the shoulder formed by the projection 18. This spring serves to hold the jaw 10 normally is the position shown in Fig. I, in which position an inverted V-shaped opening is formed between the two jaws.

The wrench is applied to a cylindrical body, such as a pipe, in the manner shown in Fig. I. By turning the wrench clockwise the jaws grip the tube and revolve the same clockwise. The pressure against the teeth 14 holds the jaw tightly against the head 1, as shown.

When it is desired to use the wrench upon a nut, the movable jaw 5 may be suitably adjusted to take over the nut, and the knurled nut 7 may be operated to retract the movable jaw 5, which squeezes the nut between the jaw 5 and the jaw 10. The wrench is placed over the nut in such a manner that the nut lies above the point upon which the jaw 10 is pivoted—that is to say, the nut should be as close as possible to the shank 4, so that when the nut is squeezed tightly between the jaws the jaw 10 will be swung outwardly in such a manner that its face will be brought into a position substantially parallel with the face of the jaw 9. This action of the jaw 10 is automatic and enables the wrench to accommodate articles which do not have exactly parallel surfaces which may be gripped, so that articles of irregular surfaces may be readily gripped between the jaws. It will be observed, however, that irregular-shaped articles or such articles as nuts, which have parallel faces or faces nearly parallel, should be inserted between the jaws as near the shank 4 as possible in order that the jaw 10 may partake of its pivotal movement. When the wrench is removed, the spring 20 retracts the jaw 10 into its normal position.

The movable jaw may be either plain or toothed, and a set of each may be supplied with the wrench and used interchangeably, as occasion requires.

It will thus be seen that the wrench is very useful as a tool, inasmuch as at all times it is ready for use as a pipe-wrench, as a monkey-wrench, or as an alligator-wrench.

The upper portion of the head 1 is provided with a flat face 21, the plane of which is substantially parallel with the handle 2 and affords a convenient hammer-face, so that, if desired, the wrench may be used as a hammer.

Fig. III shows a modified form of attaching the jaw 10 to the head, in which the jaw 10 is provided with a knuckle 22, which projects in a corresponding recess 23, formed in the head. The jaw is prevented from being withdrawn or from becoming loose from the head by means of the shank 4, which covers the upper edge of the knuckle. When it is desired to remove the jaw 10, the movable jaw 5 is removed from the wrench and the jaw 10 then readily removed.

Referring to the modification shown in Fig. IV, the wings 16 of the head 1 are made larger and have a larger curve and the pivotal jaw 10 is provided with a larger curved recess to fit the wings, so that a greater bearing-surface is secured and much stronger construction attained. The pivotal jaw 10 also has an enlarged end 24, which has a bearing-face 25, which is adapted to bear against one side of the extension 3 when the jaw 10 is tilted into a parallel position, as when the wrench is applied to a hexagonal nut. This construction gives a much stronger support for the jaw than any of the constructions previously described and is a preferred form of construction.

I do not desire to limit myself to the specific form of fastening the jaw to the head, and it is obvious that variations in the specific form and arrangement of the embodiment herein shown and described may be made without departing from the spirit of my invention.

The engaging faces 9 and 14 of the jaws are straight from point to heel, and the jaw 10 is pivoted at the heel on the side opposite its engaging face, so that the wrench is made practical for use either as a pipe or monkey wrench on any irregular-shaped object of any size within the limits of the wrench.

The extension 24 projects up from the heel, so that when the strain is brought on the wrench the same is borne by the extension engaging with the handle and not by the pivot.

What I claim is—

In a wrench, the combination of a head, a jaw slidably mounted in the head, means for adjusting the jaw in the head, a rectangular jaw provided with a leaf, said head having an elongated slot into which said leaf projects, oppositely-arranged ears projecting from said head into curved recesses in said jaw, one end of said latter jaw being pivoted to the head near said adjusting means, said head having two bearing-faces to support said rectangular jaw, one of said faces being parallel with the gripping-surface of the first-named jaw, the other bearing-face being inclined whereby the rectangular jaw is supported in two operative positions, said rectangular jaw being parallel with the slidable jaw when in one position and being inclined to the slidable jaw when in the other position.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, in the county of Los Angeles and State of California, this 18th day of July, 1902.

ROBERT J. NORTHAM.

Witnesses:
G. T. HACKLEY,
JAMES R. TOWNSEND.