No. 654,524. Patented July 24, 1900.

J. F. & H. M. DESCHER.

WRENCH.

(Application filed Feb. 13, 1900.)

(No Model.)

Fig. 1.

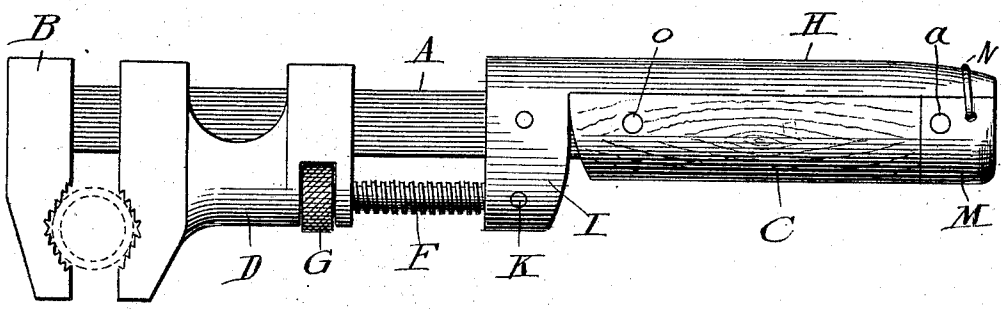
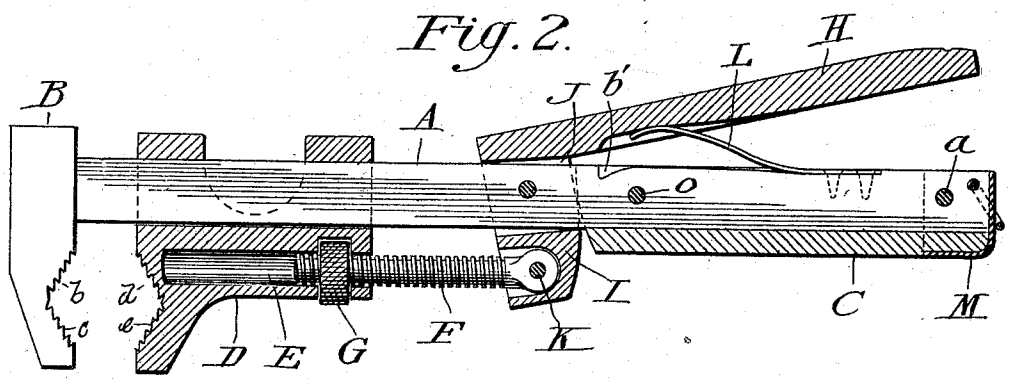


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH F. DESCHER AND HENRY M. DESCHER, OF LINCOLN, NEBRASKA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 654,524, dated July 24, 1900.

Application filed February 13, 1900. Serial No. 5,062. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH F. DESCHER and HENRY M. DESCHER, citizens of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Wrenches; and we 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.

This invention relates to improvements in wrenches for pipes, nuts, and the like, and has for its object to provide a tool of this character whereby in addition to the pressure realized from the usual adjustment obtained in the ordinary wrenches increase of pressure may be had when desired. It has been found by experience in this class of wrenches that considerable difficulty arises from not being able by means of the ordinary adjustments to obtain sufficient pressure to firmly grip the article operated upon. It is therefore primarily the object of our invention to provide such means as will supply this deficiency.

With such object in view our invention consists of the construction and arrangement of parts hereinafter more fully set forth and claimed.

In the drawings, Figure 1 represents a side elevation of a wrench embodying our invention, the operating-lever shown in closed position. Fig. 2 is a like view showing the lever in its extended position.

Referring to the drawings, A represents the ordinary shank of a wrench, having at one end the usual rigid jaw B, provided with the triangular recess *b*, having serrations or teeth *c*, and also provided at its other end with a wooden half-handle secured to the shank A by the removable rivets *a a* or other means permitting ready removal of the same.

Mounted upon the shank A is a sliding jaw D, provided with a recess *d* similar to the recess in the jaw B and having serrations or teeth *e*, said jaw being adapted to move toward and from the fixed jaw B and for a portion of its length being centrally bored, as at E, to loosely receive the screw F, which, in connection with the ordinary stationary thumb-nut G, serves to adjust the sliding jaw in the course of its movement. By such means the ordinary adjustment of the sliding jaw may be effected, and in order to obtain additional adjustment which provides the necessary increase of pressure an operating-lever H is pivotally secured to the shank A by means of the outwardly-extending arm I, said arm having a central opening J, through which the shank A passes, and being also at its outer end pivotally connected to the screw F, as shown at K. The operating-lever forms the other half of the handle and is normally held in an outwardly-extended position by the spring L, one end of which is fastened to the shank A by any suitable means, while the other end bears against the lever H, the said lever at such point being channeled for a portion of its length to receive the said spring, and thereby prevent the same from slipping either to the one side or the other and the shank being preferably provided with a recess *b'* to permit the complete closing of the handle.

To prevent the wooden handle C from splitting, as is very often the case, a metal cap is fastened to the end of the same, as shown at M.

In using the wrench the usual adjustment may be effected by operating the thumb-nut G in either direction, as the case may be, for raising or lowering the sliding jaw D. By this means, however, sufficient pressure cannot always be obtained in cases where it is required, and therefore by means of the operating-lever and its connections additional pressure can be applied. The operating-lever being normally pressed outward by the spring L, all that is necessary after adjusting the jaws to the desired position by the thumb-nut G is to press the lever against the tension of the spring into its closed position, (shown in Fig. 1,) by which operation the outer end of the arm I is raised and carries bodily therewith the screw F, which in turn raises the sliding jaw the required distance, and thereby gives the pressure requisite for the purpose.

When it is desired to securely hold the operating-lever in its closed position against the tension of the spring, as when using the wrench as an ordinary nut-wrench, a metal ring N, which is pivoted to the shank, may be hooked over the outer edge of the lever, and it will thus be locked against the half-handle C.

The serrations or teeth *c e* of the jaws B D are preferably arranged to point toward each other in opposite directions on each jaw, and the sets of teeth are arranged in straight lines, as shown, so that when the jaws are brought together the pipe or tube is clamped at four points at once.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a shank provided with a rigid jaw, a movable jaw mounted on the shank and having a smooth central bore, a nut loosely carried by the movable jaw in the axial line of the said central bore, an operating-handle pivotally connected to the shank, and provided with an outwardly-extending arm having a recess, a screw pivotally connected to the outwardly-extending arm in the recess near the end thereof, passing through the nut and into the smooth central bore, and a ring pivoted to the shank and adapted to engage the end of the operating-handle.

2. The combination of a shank provided with a fixed jaw, a movable jaw mounted on the shank and having a smooth central bore, a nut loosely carried by the movable jaw, an operating-handle pivotally connected to the shank, and provided with an outwardly-extending arm, a screw pivotally connected to the said arm engaging the nut and extending into the smooth central bore, a spring interposed between the shank and operating-handle, the latter being channeled and the former provided with a recess, and a ring pivoted to the shank and adapted to engage the operating-handle, whereby the operating-handle and shank may be held completely closed to constitute the wrench-handle.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSEPH F. DESCHER.
HENRY M. DESCHER.

Witnesses:
A. W. LANE,
L. E. FERRIS.