

UNITED STATES PATENT OFFICE.

CHARLES S. LELAND, OF MOUNT DESERT, MAINE.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 746,113, dated December 8, 1903.

Application filed March 20, 1903. Serial No. 148,751. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. LELAND, a citizen of the United States, residing at Mount Desert, in the county of Hancock and State of Maine, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

The purpose of this invention is to provide a novel form of wrench which may be very conveniently manipulated because of the peculiar means employed for adjusting the jaws in their relative positions, by which closure of the same upon an article may be greatly facilitated and locking of the jaws permitted almost instantaneously. Other important desiderata are also attained to, and these will become apparent as the description of the invention continues.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation in which the handle is shown in section. Fig. 2 is a perspective view of the shank, the handle removed and the friction-disk detached and shown to one side. Fig. 3 is a bottom plan view, the handle being in section.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The wrench consists of three essential elements 1, 2, and 3, consisting of a fixed jaw, a movable jaw, and a revoluble handle, respectively. The shank 4 of the wrench is provided with a threaded end 5, by which handle 3 is held in its position upon said shank. The shank is also provided intermediate its ends with an enlarged portion 6, the purpose of which will more fully appear hereinafter. A sleeve 7 is rotatably mounted upon the end of the shank 4, being held in place by a bur 8 or other suitable means. The bur 8 is rigidly held in its position upon the shank by a transverse locking-pin 9. The

rotatable sleeve 7 is provided upon its periphery with a spiral groove 10, and a head 11 is also disposed upon one end of the said sleeve. Extending from the movable jaw 2 is a stem 12, and a lug 13 projects from the extremity of the stem 12 and extends into the path of the spiral groove 10. Since the sleeve 7 is rotatably mounted upon the shank 4 of the wrench, movement of the movable jaw imparts a rotary motion to the said sleeve 7; and it is the object of the invention to provide means for locking the sleeve from rotation and by so doing fix the movable jaw at any ascertained adjustment upon the shank 4 and with relation to the fixed jaw 1 of the wrench. For the above purpose the head 11 is disposed upon the sleeve, as before mentioned, and means are provided which cooperate by friction contact with the head 11, by which the sleeve 7 is prevented from rotation and the movable jaw locked from longitudinal movement upon the shank. The bur 8, which holds the sleeve upon the shank 4, cooperates with a friction-disk 14 to prevent rotation of the latter, said disk being provided with a recess 15 to correspond to the form of the bur 8 and in which the said bur 8 is seated when the parts are arranged in their normal relative positions. The friction-disk 14 is normally held out of contact with the head 11 of the sleeve 7 by a coil-spring 16, seated in the recess 15 and interposed between the disk and the head 11. The revoluble handle 3 is attached to the shank through the medium of the threaded end 5, as above premised, and is adapted to obtain a longitudinal movement upon the said shank. The inner surface of the screw end 17 of the handle bears against the friction-disk 14, and revolving of the handle to impart to same a longitudinal movement toward the jaw members 1 and 2 will steadily move the friction-disk from its normal condition out of contact with the head 11 against said head, and the sleeve will be thus locked from rotation.

When the wrench is being applied to an object, the handle 3 is unscrewed to such an extent as to permit action of the coil-spring 16 to throw the friction-disk out of contact with the head 11, and this permits of adjustment of the movable jaw to the extent desired relative to its position with regard to

the fixed jaw, since pressure exercised upon the movable jaw to cause same to move either toward or from the fixed jaw will merely cause rotation of the sleeve 7. The jaws being closed upon the object, the handle may be given a turn or two to screw it farther upon the threaded end of the shank, and this will cause the friction-disk 14 to close against the head 11 in a manner which has been above clearly set forth, and owing to the fact that no rotary movement can be imparted to the sleeve the movable jaw will necessarily be locked at the desired adjustment.

It will be seen that if the revoluble handle be unscrewed to such an extent only as to permit the friction-disk to be barely out of contact with the head 11 the jaw may be almost instantaneously locked by a quick rotary movement of the handle in the proper direction, and this is deemed an important advantage, since it is essential that the jaws may be quickly locked in a desired position as soon as they reach this desired position. The result desired is attained by the mechanical arrangement of elements as set forth in the implement embodying this invention.

It is to be understood that I am not to be restricted to the exact form of parts as illustrated—for instance, the bur 8 may be modified to be any interlocking means which will hold the sleeve 7 upon the shank 4 and which will also be adapted, in the particular contemplation of the device, to hold the friction-disk from rotation.

Other various features of the wrench relative to the structure of the elemental parts may be changed in a manner included within the spirit of the invention and the scope of the appended claims.

Having thus described the invention, what is claimed as new is—

1. In a wrench, and in combination with fixed and movable jaws, a shank, a sleeve rotatably mounted upon the said shank and provided with a spiral guide, engaging means between the said spiral guide and the movable jaw, a revoluble handle adapted to cooperate with the said sleeve to prevent rotation thereof, whereby the movable jaw is fixed at any relative adjustment, substantially as described.

2. In a wrench, and in combination with fixed and movable jaws, a shank, a sleeve rotatably mounted upon the said shank and provided with a spiral guide, engaging means between the said spiral guide and the movable jaw, and a revoluble handle adapted for longitudinal movement upon the shank, and to cooperate with the sleeve to lock same from rotation, substantially as described.

3. In a wrench, and in combination, a fixed jaw having a shank extending therefrom, a movable jaw disposed upon the said shank, a sleeve rotatably mounted upon the end of the shank and provided with a spiral guide, en-

gaging means between the movable jaw and the spiral guide, a friction-disk disposed upon the said shank and adapted to cooperate with the aforesaid sleeve to prevent rotation thereof, and a revoluble handle mounted upon the said shank and adapted to actuate the friction-disk whereby the movable jaw is fixed at any relative adjustment upon the shank, substantially as described.

4. In a wrench, and in combination, a fixed jaw having a shank extending therefrom, a movable jaw, a sleeve rotatably mounted upon the shank and provided with a spiral guide, a friction-disk disposed upon the said shank and adapted to cooperate with the said sleeve, means for preventing rotation of the friction-disk, and means for normally holding the said friction-disk away from the sleeve, and a revoluble handle disposed upon the shank and adapted for actuation of the friction-disk, whereby the sleeve is locked from rotation, substantially as described.

5. In a wrench, and in combination, a fixed jaw having a shank extending therefrom, a movable jaw provided with a stem and adapted for longitudinal movement upon the said shank, a rotatable sleeve mounted upon the shank and provided with a spiral groove, interlocking means between the stem of the movable jaw and the said groove, a friction-disk disposed upon the shank and adapted to cooperate with the sleeve to prevent rotation thereof, means for normally holding the friction-disk from engagement with the sleeve, and a revoluble handle adapted for longitudinal adjustment of the shank and actuation of the friction-disk, substantially as described.

6. In a wrench, and in combination, a fixed jaw having a shank extending therefrom, a movable jaw provided with a stem, a sleeve rotatably mounted upon the shank and provided with a spiral groove, a lug extended from the end of the stem of the movable jaw into the path of the said groove, a head disposed upon the end of the sleeve, a friction-disk disposed upon the aforesaid shank and means for preventing rotation of said disk, a spring interposed between the head and friction-disk to normally hold the latter from engagement with said head, and a revoluble handle located upon the shank and adapted for a relative longitudinal movement with reference thereto, said handle being further adapted to bear against the friction-disk to throw same into engagement with the head of the rotatable sleeve, whereby the movable jaw is locked in any relative adjustment upon the shank, substantially as described.

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

CHARLES S. LELAND. [L. S.]

Witnesses:

A. C. FERNALD,
C. S. FERNALD.