

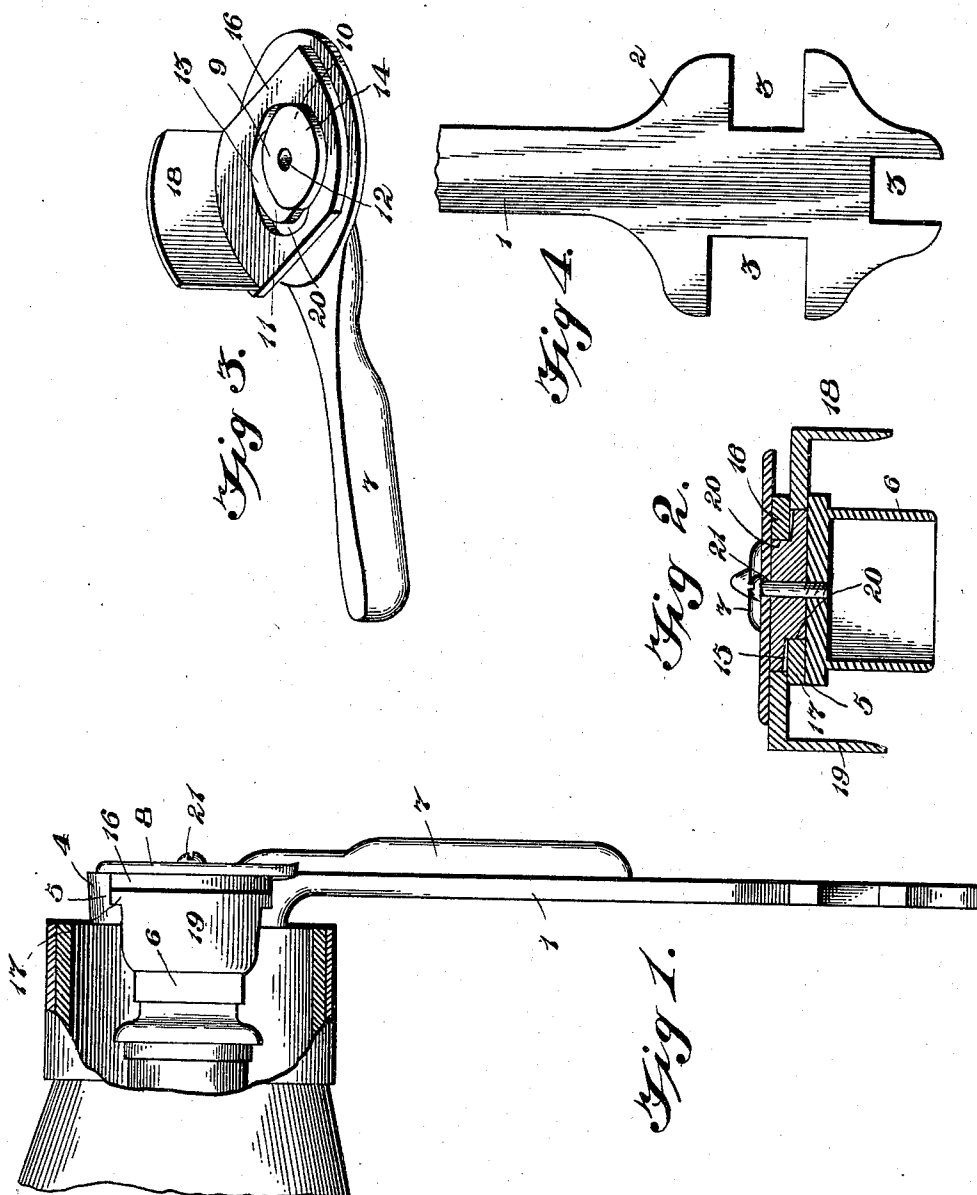
No. 643,140.

J. H. & C. C. KING.
WRENCH.

Patented Feb. 13, 1900.

(Application filed Dec. 8, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN H. KING AND CHARLES C. KING, OF MONTPELIER, INDIANA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 643,140, dated February 13, 1900.

Application filed December 8, 1899. Serial No. 739,703. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. KING and CHARLES C. KING, citizens of the United States, residing at Montpelier, in the county of Blackford and State of Indiana, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to vehicle-wrenches, and particularly to that class known as "hub-wrenches," which are employed to remove or replace an axle-nut by revolving the wheel; and the object of the same is to provide a simple and effective device of this character having positively-operating clamping means in connection therewith to fit within the hub-band without slipping or injuring the hub and whereby the removal and application of the nut can be more quickly accomplished.

With these and other objects and advantages in view the invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a portion of a hub broken away and showing the improved wrench applied thereto. Fig. 2 is a transverse vertical section through the head portion of the improved wrench. Fig. 3 is a detail perspective view of the lever and cams or eccentrics carried thereby and one of the clamping-jaws. Fig. 4 is a top plan view of a portion of the free end of the handle of the wrench to illustrate the provision of nut-recesses therein.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a handle, which may be of any suitable dimension and has its free end 2 widened and formed with a series of nut sockets or recesses 3 of different dimensions to make the device capable of use in removing or replacing nuts in an ordinary manner, and particularly those on different parts of the running-gear of a vehicle or wagon. The opposite extremity of the handle 1 is formed with a head 4, which is transversely recessed, as at 5, and is provided with a nut-socket 6, which may be of any desirable contour to fit either a square, hexagonal, or other nut.

A lever 7 is arranged in operable relation

with the parts of the wrench as thus far described, and has a supporting-disk 8 with a cam or eccentric 9 on the inner face thereof, said cam or eccentric being composed of two disks 10 and 11, eccentrically overlapped and secured with an opening 12 through both, which is disposed centrally in the disk 8. The cam may be and in practice preferably will be formed of one piece of material; but under either arrangement opposite circular extensions 13 and 14 are formed, the extension 14 being beyond the plane of the extension 13, so as to form an overhanging seat 15, as shown by Fig. 2. The inner face of the disk 8 is smooth, and movable thereover are the shanks 16 and 17 of a pair of jaws 18 and 19, both jaws being in the form of flanges of concavo-convex contour and each shank having therein an elliptical opening 20. The shank 16 rests over the shank 17, and the jaw 19 is consequently made longer than the jaw 18, so as to produce a uniformity in the construction, and when the parts are assembled they are held in operable relation by a pivot-screw 21, which extends through the disk 8 and has its screw-threaded end located in the head 4. The recess 5 is deep enough to receive both shanks 16 and 17, and the cam 9 is of a thickness equal to the depth of said recess. Therefore when the disk 8 is applied, as shown in Fig. 1, it fits firmly against the outer portion of the head 4 and is of a dimension large enough to fully cover the cam and shield a greater portion of the shanks of the jaws.

In operation the socket 6 is fitted over the nut to be removed, and the jaws 18 and 19 are clamped firmly against the inner surface of the hub-band by turning the lever 7 across the plane of the handle 1 in a direction to cause the shanks 16 and 17 to be shifted outwardly and which will result from the elliptical openings 20 changing position relatively to the cam when the said lever is operated, and by rotating the wheel through the medium of the handle 1 the nut can be easily removed or similarly replaced, and after the completion of either operation the jaws can be released from the hub-band by operating the lever 7 in a reverse direction and simultaneously drawing the jaws 18 and 19 inwardly toward the head 4. Through the me-

dium of the jaws 18 and 19 a very forceful holding contact can be established with the hub-band, and during the rotating operation of the wheel the said jaws will not loosen or slip and the operation of removing or replacing a nut can be effectually accomplished.

The several parts of the device are strong and durable, as well as simple and cheap in the cost of manufacture, and in their association but one holding device is employed, as it will be observed that the screw or pivot 21 is the only securing part.

Changes in the form, proportions, and minor details may be resorted to without in the least departing from the principle or sacrificing any of the advantages of the invention.

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

1. In a wrench of the character set forth, the combination of a handle having a head provided with a nut-socket and a transversely-extending recess, a pair of jaws having shanks movably mounted in the said recess and provided with openings, and a disk applied to the head over the recess and shanks and having a cam on its inner face engaging the openings in the shanks.

2. In a wrench of the character set forth, the combination of a handle having a head, concavo-convex jaws provided with shanks movably mounted in the said head and hav-

ing elliptical openings therein, and a disk secured to the head and having a cam on its inner face fitted within the openings of the jaws, the said disk being rotatable and operating to extend or withdraw the jaws.

3. In a wrench of the character set forth, the combination of a handle having a head, oppositely-disposed jaws having shanks slidably mounted in the said head, and a rotatable disk applied over a portion of the head and the shanks and having a fixed cam movable in portions of the said shanks.

4. In a wrench of the character set forth, the combination of a handle having a head, oppositely-disposed jaws having shanks in planes at right angles thereto and slidably mounted in the said head, the said shanks having elliptical openings therein, a rotatable disk applied over a portion of the head and the shanks and having a fixed cam with opposite extensions engaging the openings in the shanks, and a pivot-pin inserted through the center of the disk and secured in the head.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JOHN H. KING.

CHARLES C. KING.

Witnesses:

GRANT N. HENDERSON,
JOHN T. CLOUD.