

No. 613,283.

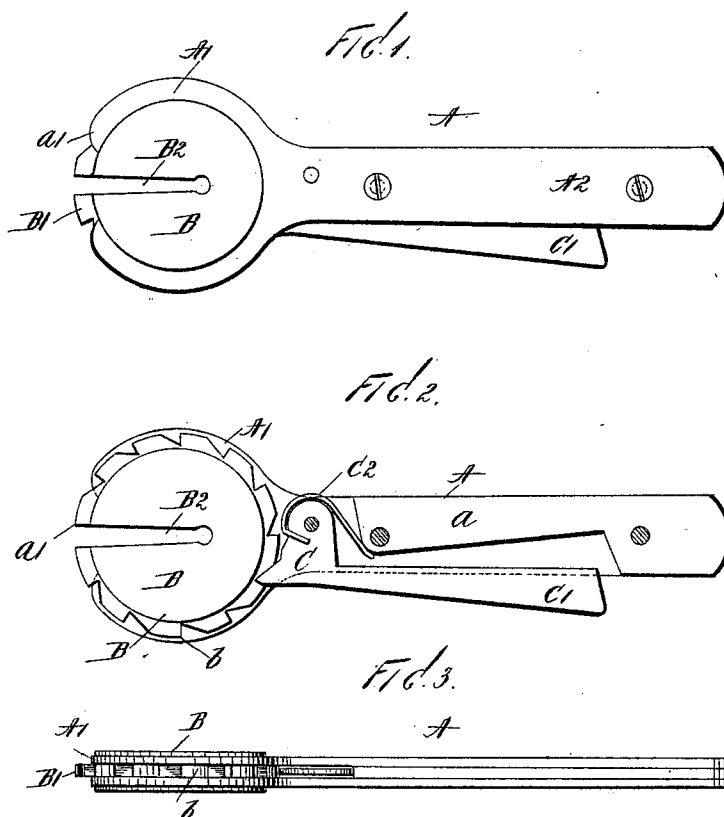
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W. F. KRAHE.

SPOKE GRIP.

(Application filed Feb. 18, 1898.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

WALTER FRANK KRAHE, OF NEW YORK, N. Y.

SPOKE-GRIP.

SPECIFICATION forming part of Letters Patent No. 613,283, dated November 1, 1898.

Application filed February 18, 1898. Serial No. 670,790. (No model.)

To all whom it may concern:

Be it known that I, WALTER FRANK KRAHE, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Spoke-Grips, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to spoke grips or wrenches for tightening or manipulating the spokes of a bicycle-wheel; and the object is to provide a ratchet spoke-grip that is particularly adapted for use in connection with bicycle-wheels, in which the operating-space is limited, and which will be simple in construction, effective in operation, and which can be operated in a very limited space.

The invention consists of a spoke-wrench constructed substantially as hereinafter described, and defined in the claims.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same letters of reference in each of the views, and in which—

Figure 1 represents a side view of the improved spoke-grip. Fig. 2 is a similar view, the upper plate being removed to show the construction; and Fig. 3 is an edge view.

Referring to the drawings, A represents the handle portion of the spoke grip or wrench, which is provided at one end with a circular head A', in which is formed a circular opening adapted to receive a wrench-head B, and the handle A is provided at one side with a longitudinal raised portion *a*. A cover-plate A², similar in form to the handle A and forming part thereof, is secured to the raised portion *a* of said handle by screws or bolts or in any desired manner, and the said cover-plate is provided at one end with a circular head A², similar in form to the head A' of the handle A. Between the head of the cover-plate and the head A' of the handle A is an open space, which is filled by the wrench-head B, and the cover-plate A² forms part of the handle, and the head of the cover-plate, together with the head A' of the part A of the handle, forms the head of the handle.

The wrench-head B is provided with a flange B' around the perimeter thereof, which is of less thickness than the head of which it forms a part, and said flange is provided with ratchet-teeth *b*.

By reason of the above-described construction the wrench-head B fills the circular opening in the head of the handle, and the flange B', which is provided with ratchet-teeth *b*, is also inclosed by the separate parts of the circular head of the handle.

The circular head A' of the wrench, of which the circular head of the cover-plate forms a part, is divided at its outer side, or on the side opposite the handle, to form a slot or opening *a'*, the edges of which are curved, so as to prevent any obstacle to the application of the wrench to a spoke. The wrench-head B is provided with a radial slot B², which tapers slightly toward its inner end and terminates at a point near the center of the wrench-head or slightly beyond the same. The inner end of the slot B² is formed of a width sufficient to bind tightly upon a spoke, while the wider outer portion of the slot facilitates the application of the wrench to the spoke, and in the normal position of said wrench-head the slot B² coincides with the opening *a'* in the head of the handle.

At a convenient point in the handle of the wrench adjacent to the head thereof is pivoted a pawl C, which is provided with a shoulder or projection, through which the pivot-pin passes, and the said pawl and the handle thereof are arranged beneath the cover-plate A² of the handle and project slightly from the side of the handle in position to be conveniently operated. A suitable spring C² is mounted in the handle and incloses the shoulder or projection of the pawl through which the pivot-pin passes, and one end thereof bears upon the body portion of the handle and the other is secured to said shoulder or projection of the pawl, and said spring operates to throw the handle C' of the pawl C outwardly and to throw said pawl into engagement with the ratchet-teeth.

The wrench-head B is free to rotate within the head of the handle in either direction when the pawl C is not in engagement therewith, and when the device is to be used to tighten a spoke the wrench-head is turned in

position to bring the slot B² into alinement with the opening a' in the head of the handle. The spoke is then caused to enter the slot B², the inner contracted edges of which tightly
 5 bind upon said spoke and prevent it from slipping. The wrench is then operated in the well-known manner of ratchet-wrenches until the spoke is sufficiently tightened, and the arrangement of the spokes renders it possible
 10 to give only a very limited swing or movement to the device or spoke-grip as the latter is operated, and as the spoke is turned while being tightened the wrench-head rotates with the same in the head of the handle, so that
 15 it is not necessary to release the wrench-head from the spoke at every movement or turn of the wrench-head, and thus the mutilation of the spoke is prevented. When the spoke is sufficiently tightened, the pawl C is released
 20 from the ratchet-teeth and the wrench is pulled forcibly away from the spoke, the wrench-head B revolving in the head of the handle until the slot B comes into alinement with the opening a' in the head of the handle,
 25 when the spoke will slip out of the wrench-head.

The construction and arrangement of the parts above described permits the wrench to be used in a space so restricted that the handle can swing only through the space occupied by one ratchet-tooth at a time.

My improved wrench or spoke-grip is simple in construction and operation and well adapted to accomplish the result for which it is intended, and it will be apparent that changes
 35 in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

40 Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A spoke-grip comprising a handle having a circular head said head being composed of two similar circular parts in each of which is
 45 formed a circular opening, said circular parts of the head being open at the side opposite the handle and a circular wrench-head mounted in the circular opening in the head of the handle and provided with an annular flange
 50 having ratchet-teeth said handle being also provided with a longitudinal opening in which is pivoted a spring-operated pawl which is adapted to engage the said ratchet-teeth said
 55 pawl being provided with a longitudinally-projecting handle and said wrench-head being provided with a radial slot or opening, substantially as shown and described.

2. A spoke grip or wrench comprising a handle having a circular head said handle and
 60 said head being composed of two separate parts bolted together and said handle being provided with a longitudinal slot or opening and said head being provided with a circular
 65 central opening in which is mounted a circular wrench-head having an annular flange provided with ratchet-teeth a spring-operated pawl pivoted in the handle and adapted to operate in connection with said ratchet-teeth
 70 said pawl being also provided with a handle said ratchet-head being also provided with a radial slot or opening and the head of the handle in which the wrench-head is mounted being also provided at the side opposite the
 75 handle with a transverse slot or opening, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 17th day of February, 1898.

WALTER FRANK KRAHE.

Witnesses:

L. M. MULLER,
 M. A. KNOWLES.