

(Model.)

E. W. HEMANS & E. C. THAYER.

VEHICLE WRENCH.

No. 393,903.

Patented Dec. 4, 1888.

Fig. 1.

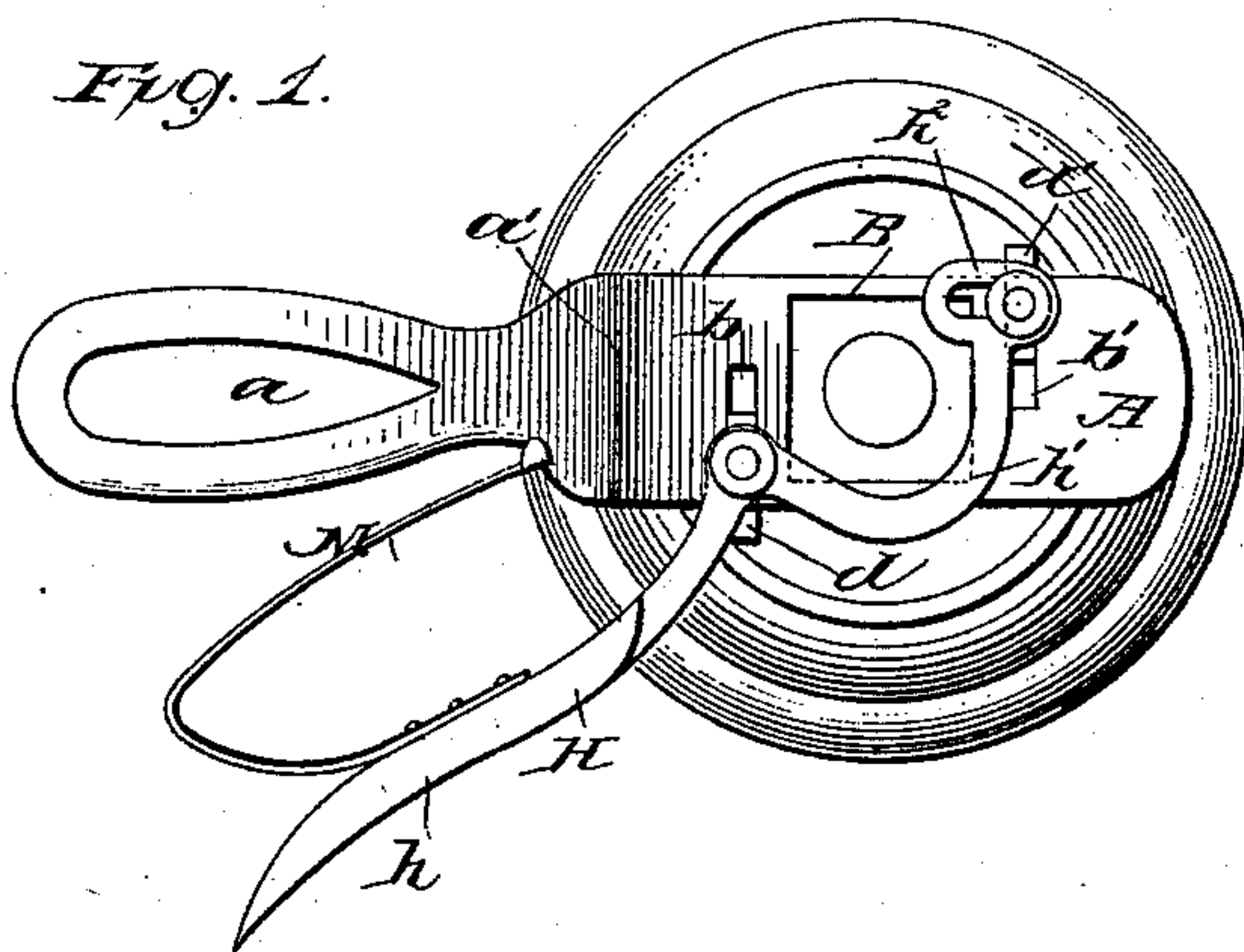
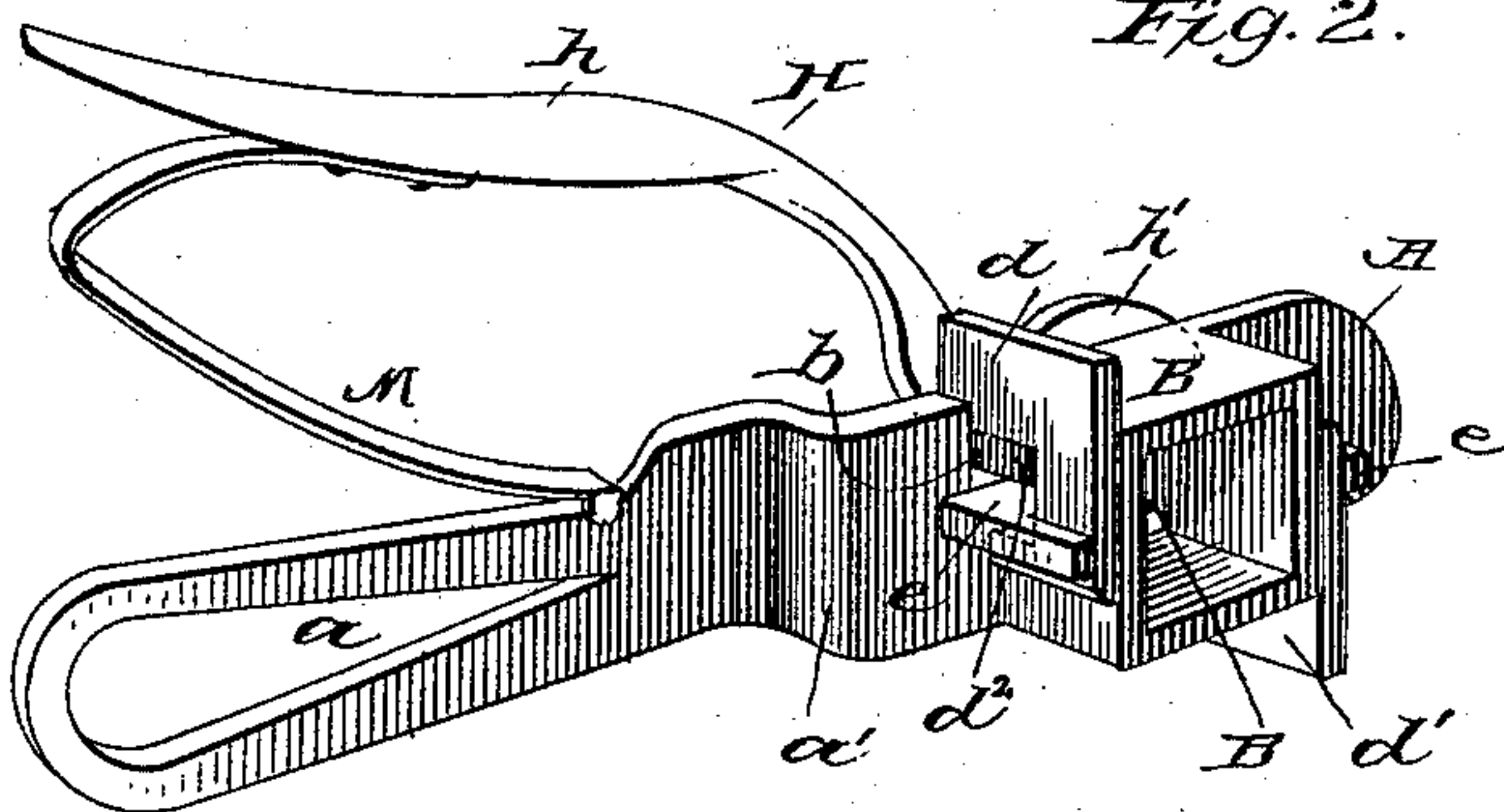


Fig. 2.



WITNESSES:

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VEHICLE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 393,903, dated December 4, 1888.

Application filed February 11, 1888. Serial No. 263,716. (Model.)

To all whom it may concern:

Be it known that we, EGBERT W. HEMANS and EUGENE C. THAYER, both of Aurelius, in the county of Ingham and State of Michigan, have invented a new and Improved Vehicle-Wrench, of which the following is a full, clear, and exact description.

Our invention relates to an improved vehicle-wrench, and has for its object to provide a means whereby the axle-nut may be removed or replaced by the motion of the wheel, and whereby, when the wheel is removed from the axle, the nut will remain in the hub in position for replacement.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a front elevation of the wrench in position for use, and Fig. 2 is a perspective view of the same.

In carrying out the invention the body A of the wrench is provided with a handle, *a*, preferably offset from the outer face, as illustrated at *a'* in Fig. 2.

In the body, which is of a width slightly greater than the width of the nut to be removed, a rectangular or polygonal aperture, B, is cut, and from the under side of the body a continuous and integral flange, B', is projected, surrounding the aforesaid aperture, and conforming to the contour thereof, as best shown in Fig. 2. In opposite edges of the body transverse slots *b* and *b'* are produced, which slots are in alignment with opposing outer faces of the flange B'.

Within the respective slots *b* and *b'*, and in contact with the flange B', dogs *d* and *d'* are held to slide, which dogs are preferably of a length equal to the width of the body, and of a width to project through the slots flush with the outer face and slide flush with the base of the flange. The movement of the dogs in either direction is controlled by angular stops *e*, secured to the flange, one member of which stops, through the medium of a recess, *d*², produced in the dogs, is in contact with their

outer face, serving as a lateral guide. The stops are preferably located at the inner extremities of the slots *b b'*. The recess *d*² in the dogs serves also to permit one section to slide in the slots and the other upon the body.

An angle-lever, H, is provided, consisting of a member, *h*, shaped to be grasped by the hand, and a curved member, *h'*, having a slotted head, *h*², integral with and at right angles to the extremity.

At the intersection of the members *h* and *h'*, upon the outer face of the body, the lever H is pivoted to the dog *d*, and connected at the extremity of the curved member with the opposite dog, *d'*, by a pin projected from the latter passing through the slot in the head of the former, as illustrated in Fig. 1. The member *h* of the lever, extending parallel with one edge of the handle, has secured to its inner face one end of a spring, M, the other end of which bears against a shoulder produced in the contiguous edge of the aforesaid handle. By reason of this spring and the lever the dogs *d* and *d'* are normally held to project outward from the wrench-body.

In operation the handle of the wrench and member *h* of the lever are grasped with the hand and drawn toward each other, compressing the spring, which action also slides back the dogs flush with the edges of the body. The flange B' is now inserted over the nut and the handle and lever released, whereupon the spring, acting through the lever, forces the dogs again outward, they coming in contact, respectively, with opposite points of the hub-band, as illustrated in Fig. 1. This having been accomplished, by turning the wheel the nut is unscrewed, and when the wheel is removed from the axle the nut remaining in the hub held by the wrench is not liable to be lost, and is retained in position for immediate replacement.

It matters not if the nut is not in the center of the hub, as the dogs will accommodate themselves to the band automatically. By use of such a wrench a wheel may be removed in a short space of time without soiling the hands.

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

1. The combination, with the body provided

with an aperture near the outer end, and a flange integral with the body surrounding the aperture, of dogs sliding in opposing edges of the body, and a spring-actuated lever pivoted
5 to said dogs, as and for the purpose specified.

2. The combination, with the body provided with a handle and an aperture near the outer end, and a flange integral with the body surrounding said aperture, of dogs sliding in opposite edges of the body in contact with the
10 flange, and a spring-actuated angle-lever pivoted to said dogs, substantially as and for the purpose herein specified.

3. The combination, with the body provided
15 with a handle and an aperture near the outer end, and a flange integral with the body surrounding said aperture, of dogs sliding in opposite edges of the body in contact with the

flange, a spring-actuated angle-lever pivoted to said dogs, and means, substantially as described, for limiting the movement of said
20 dogs, essentially as set forth.

4. A vehicle-wrench comprising a nut-socket having flat outer sides, dogs sliding in opposite directions on opposite sides of the
25 nut-socket beyond diagonally-opposite corners thereof at right angles to the length of the bore, and a spring-pressed lever fulcrumed on the sliding dog and having a slot-and-pin connection with the other, substantially as set
30 forth.

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Witnesses:

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JOHN BISHOP.