A. W. ANTHOINE.

Vehicle-Hub Wrench.

No. 206,293. Patented July 23, 1878.

Fig. 1.

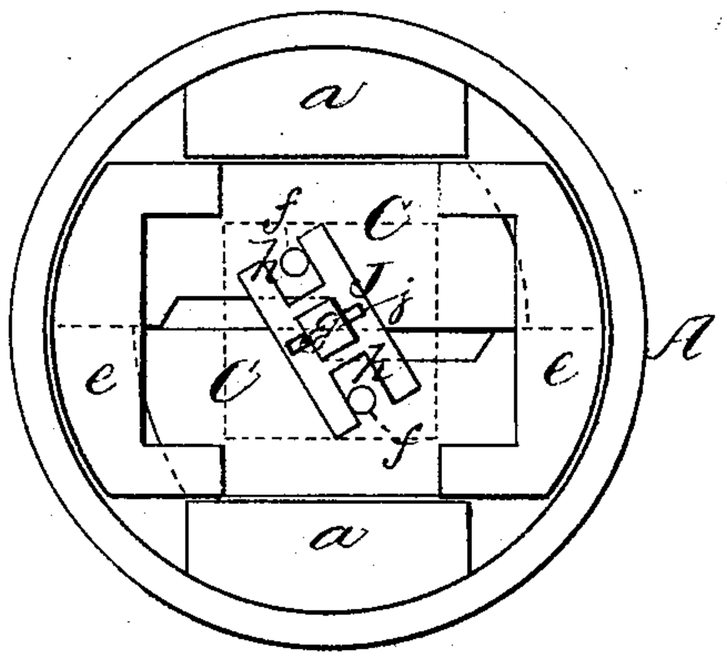


Fig. 2.

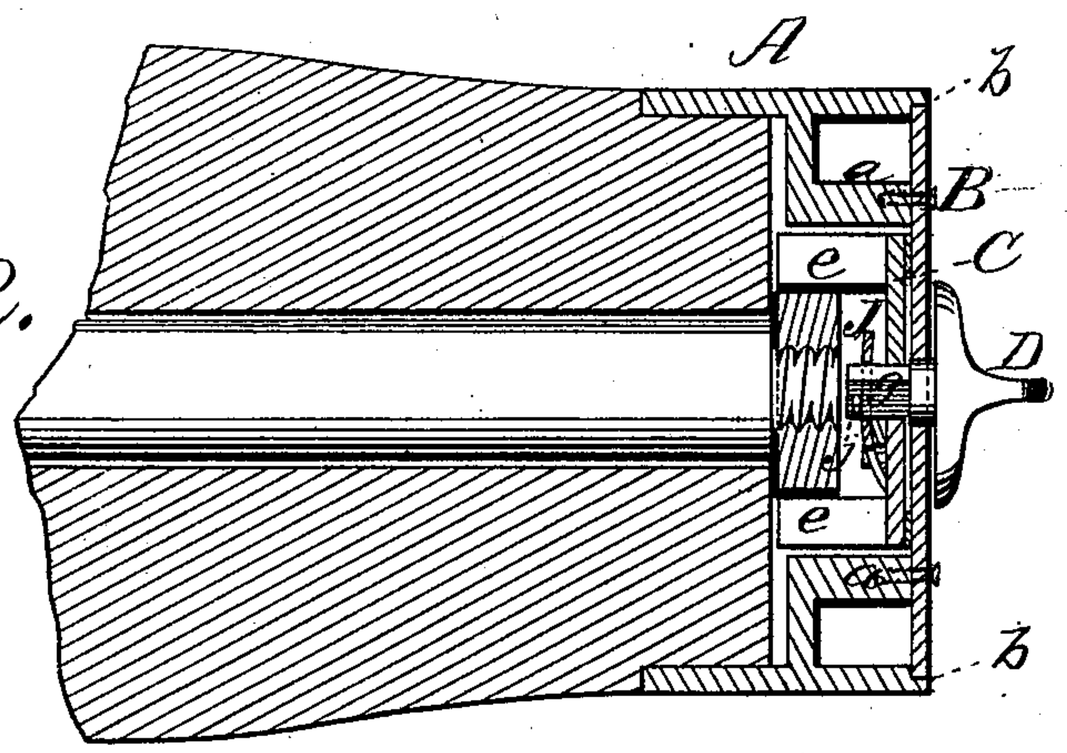


Fig. 3.

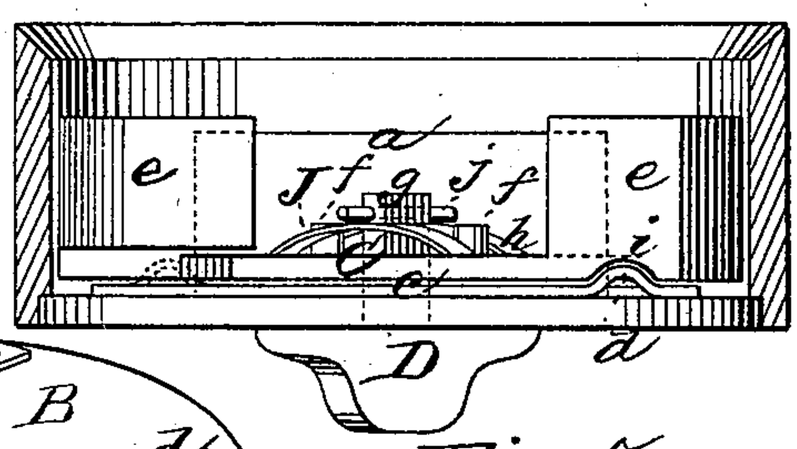


Fig. 4

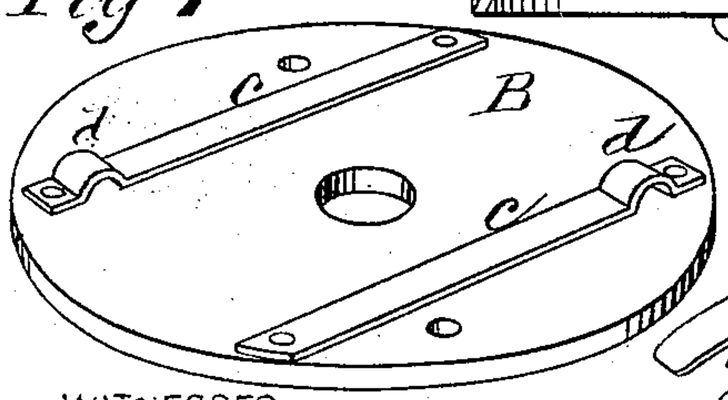
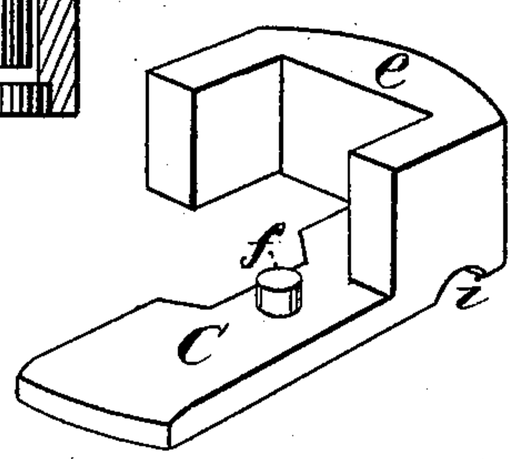


Fig. 5.

Fig. 6.



WITNESSES

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ALFRED W. ANTHOINE, OF MINOT, MAINE.

IMPROVEMENT IN VEHICLE-HUB WRENCHES.

Specification forming part of Letters Patent No. **206,293,** dated July 23, 1878; application filed June 22, 1878.

To all whom it may concern:

Be it known that I, ALFRED W. ANTHOINE, of Minot, in the county of Androscoggin and State of Maine, have invented a new and valuable Improvement in Vehicle-Hub Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of my invention with jaws open. Fig. 2 is a longitudinal section of a hub, showing my wrench applied. Fig. 3 is a transverse section of the wrench, and Figs. 4, 5, and 6 are detail views.

This invention has relation to improvements in means for unscrewing the retainer-nut from the end of an axle-arm for the purpose of removing the wheel.

The object of the invention is to devise means for removing the nut, without using a hand-wrench, by simply turning the wheel over.

The nature of the invention consists in combining with said nut jaws arranged in the outer hub-band, and adapted to simultaneously engage the said nut and to be disengaged from the same, whereby, in the first instance, the reversal of the wheel unscrews the nut, and in the second instance the wheel may be turned over either in a forward or backward movement of the vehicle without affecting the said nut, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates the outer hub-band of a vehicle-wheel having upon its interior face the opposite offsets *a*, the adjacent edges of which are plain parallel surfaces. The outer edge of this band has an inside rabbet, *b*, in which is received a metallic face-plate, B, secured to the offsets *a* by suitable means. On the inside of the face-plate are secured parallel metallic plates *c*, terminating at opposite ends in a catch, *d*, the object of which will hereinafter appear.

C C represent metallic slides arranged side by side in the hub-band, and provided at opposite ends each with a wrench-jaw, *e*. The slides have upon their under sides, at their outer ends, a notch, *i*, and are provided upon their inner faces with projecting studs *f*. They are also cut away at their adjacent edges so as to form an oblong opening through which projects the square tang *g* of a turn-button, D, having its bearings in the face-plate and projecting through the same. Upon the end of this tang is passed an arched steel pressure-plate, J, the notched ends *h* of which engage the pins *f*, and, when secured in position by means of a pin, *j*, bear forcibly upon the slides C C. This head or plate J has a square opening through it, that snugly receives the tang *g* of the turn-button, and is consequently incapable of rotating independently thereof. If, now, the turn-button be actuated in one direction, the jaws *e* will approach each other and clasp the nut between them. Consequently by reversing the wheel the nut will be unscrewed and the wheel may be drawn off of the thimble or axle-arm. By reversing the movement of the said button the jaws will recede from each other and the notches *i* will be sprung over the catches *d*, owing to the yielding and reaction of the arched spring-plate J, thus preventing them from again engaging the nut until the first movement of the button is repeated. When thus engaged the vehicle may go ahead, back, or turn corners without danger of unscrewing the nut.

It will be observed, reference being had to Fig. 1, that when the jaws are separated to allow the wheel unimpeded rotation the contiguous edges of the jaws are sufficiently far apart to avoid the angles of the nut. It will also be seen that the offsets *a* serve as guides to the jaws, and the spring-pressure plate has the double function of a lever and a spring.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a wheel, of adjustable inside slide-jaws arranged within the outer portion of the hub, and adapted to be engaged with or disengaged from the spindle-nut, substantially as specified.

2. The slides C C, having the wrench-jaws *e* arranged entirely within the outer end of the hub, in combination with a turn-button or lever device extending through the outer plate of said hub, and adapted to throw the slides

apart for disengagement and to draw them together for engagement with the spindle-nut, substantially as specified.

3. A wheel having wrench-jaws *e* arranged within the outer hub-band and adapted to be simultaneously engaged with or disengaged from the spindle-nut, and a yielding catch, also within said hub-band, engaging said jaws and holding them off the nut when disengaged therefrom, substantially as specified.

4. In a hub, the combination, with the outer band A and face-plate B, of the jaw-slides C C, having studs *f* and notches *i*, the catches *d*, the lever or turn-button D, and the spring-pressure plate J, having notched ends, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ALFRED W. ANTHOINE.

Witnesses:
CHARLES E. STEVENS,
CHAS. O. COLE.