(No Model.)

G. H. EATON.

AXLE NUT.

No. 346,469. Patented Aug. 3, 1886.

Fig. 1.

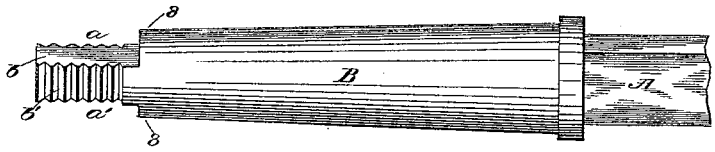


Fig. 2.

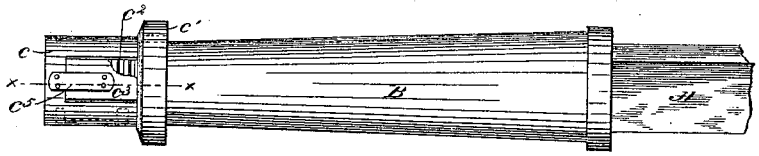


Fig. 3.

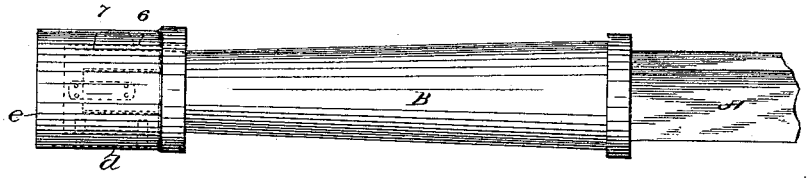


Fig. 4.

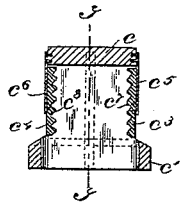


Fig. 6

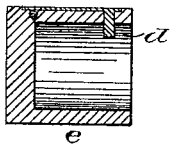
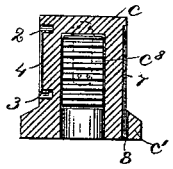


Fig. 5.



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AXLE-NUT.

SPECIFICATION forming part of Letters Patent No. 346,469, dated August 3, 1886.

Application filed April 5, 1886. Serial No. 197,843. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. EATON, of North Middleborough, county of Plymouth, and State of Massachusetts, have invented an Improvement in Axle-Nuts, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide a carriage-axle with an improved lock-nut or fastening which may be readily removed when desired to remove the wheel without the aid of a wrench, and which may be readily applied to firmly secure the wheel in position, and yet positively prevent its being accidentally withdrawn.

In accordance with this invention, the end of the axle arm or spindle is slabbed off or cut away upon each side to present a tongue, the opposite sides of which are scored. A cap having a suitable flange, against which the hub of the wheel, or it may be the bushing, may bear, is placed over the tongue, the opposite sides of the said cap being cut out or recessed to receive two spring-controlled dogs, scored upon their under sides, which engage the scored sides of the tongue. Another cap, or it may be a cylinder, is placed over the cap containing the dogs, to firmly hold the said dogs in engagement with the scored sides of the tongue. A suitable locking device, in this instance consisting of a spring-latch, is attached to the external cap, which, by engaging with the internal cap, prevents the said external cap from being withdrawn unless positively released.

Figure 1 shows in elevation an axle arm or spindle constructed in accordance with this invention, the nut being removed; Fig. 2, a similar view with the internal cap applied; Fig. 3, a similar view with the external cap applied; Fig. 4, a vertical section of the internal cap, taken on the dotted line $x\,x$, Fig. 2; Fig. 5, a vertical section of the internal cap, taken on the dotted line $y\,y$, Fig. 4; and Fig. 6, a section of the external cap.

The axle-bar A and axle arm or spindle B are of any usual or suitable construction, and may be provided with any well-known shoulders or collars. The outer end of the axle arm or spindle B is slabbed off or cut away upon opposite sides, as at $a\,a'$, Fig. 1, to thus present a tongue, b, the opposite edges of which are scored or serrated, as at b', to form threads. A cap, c, which for convenience may be herein styled the "internal" cap, is placed over or upon and so as to conceal the tongue b, the said cap being provided with a suitable flange, c', which, terminating near the shoulders S of the axle-arm B, serves as a bearing or collar, against which the usual box (not shown) in the hub of the wheel may bear, to prevent the removal of the wheel from the arm B. The internal cap, c, is cut through at opposite sides, as at c^2, to form rectangular spaces or recesses for the reception of two serrated dogs, c^3 c^4, normally held in position by flat springs c^5 c^6, riveted to them at one end and the outside of the internal cap, c. The serrations or scores at the under side of each dog c^3 c^4, as at c^7 c^8, correspond with the scored sides of the tongue b, to thus engage with each other. An external cap, e, or it may be a cylinder, (see Fig. 3,) is made to surround and to conceal the internal cap, c, one end of the said external cap abutting against the flange or collar c'. The external cap is of sufficient diameter to fit snugly upon the internal cap, and when applied the dogs c^3 c^4 are positively engaged with the scored sides of the tongue b, and prevented from rising or from in any way being disengaged therefrom, except by first removing the cap e.

A suitable locking device is provided, by which the external cap, e, is held in position and its rotation prevented, the locking device in this instance consisting of a spring tongue or detent, d, (see dotted lines, Figs. 3 and 6,) attached to the outside of the said cap e, its engaging end passing through a hole in said cap and entering one or the other hole 2 3, bored in the exterior of the internal cap, c, a small channel, 4, being cut in the said cap c, between the two holes 2 3, that the engaging end of the locking device may be more readily passed from one to the other. When the external cap, e, is in the position, Fig. 3, to lock the dogs or engaging devices c^3 c^4, the engaging end of the spring-latch will enter the hole 3; but the said cap e may be removed so far as to permit the latch d to enter the hole 2, or it may be entirely removed. The external cap, e, is also provided with a hole, t, (see dot-

ted lines, Fig. 3,) in which oil may be placed, it following in the channel 7, cut in the internal cap, and thence through the hole 8, (see Fig. 5,) bored through the flange c'.

It is obvious that the dogs or engaging devices c^3 c^4 may be somewhat modified, and so, also, the locking device d, without departing from the spirit of this invention, the essential feature being that the engaging devices be such as may be pressed into engagement with the scored or serrated tongue b by the cap or cylinder e, and the locking devices be such as to prevent the cap e from becoming loosened or rattling off.

It will be seen from the foregoing that a positively-locked axle-nut is provided which may be readily removed without the aid of a wrench—as, for instance, when desired to remove a wheel—and when locked in position a firm bearing and support is presented for a wearing-face to the hub of the wheel.

I am aware that a cap having dogs connected therewith has been applied to the end of an axle-arm, the said dogs entering a suitable groove therein, and a ring has been employed to hold the dogs in engagement, and such construction I do not herein claim.

I claim—

1. The axle-arm B, having the tongue b, scored or serrated as described, the cap placed upon said tongue and its connected engaging devices, substantially as described, to engage the scored portions of the tongue, combined with the cap e, having a closed end to inclose the cap c and its engaging devices, to thereby prevent dust, &c., from coming in contact with the engaging devices, and also to lock the said engaging devices in position, substantially as described.

2. The axle-arm B, having the tongue b, scored as described, and cap c, carrying engaging devices, substantially as described, for engaging the scored portions of the tongue, and having the flange c', combined with the cap or cylinder e and locking devices, substantially as described, carried by it for locking the cap e upon the cap c, all as set forth.

3. The axle-arm B, the tongue b, scored as described, and the channeled cap c, carrying dogs c^3 c^4, which engage with the scored portions of the tongue, and having the flange c', bored as at 8, combined with the cap e, having the hole 6, to receive oil, all as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. H. EATON.

Witnesses:
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F. CUTTER.