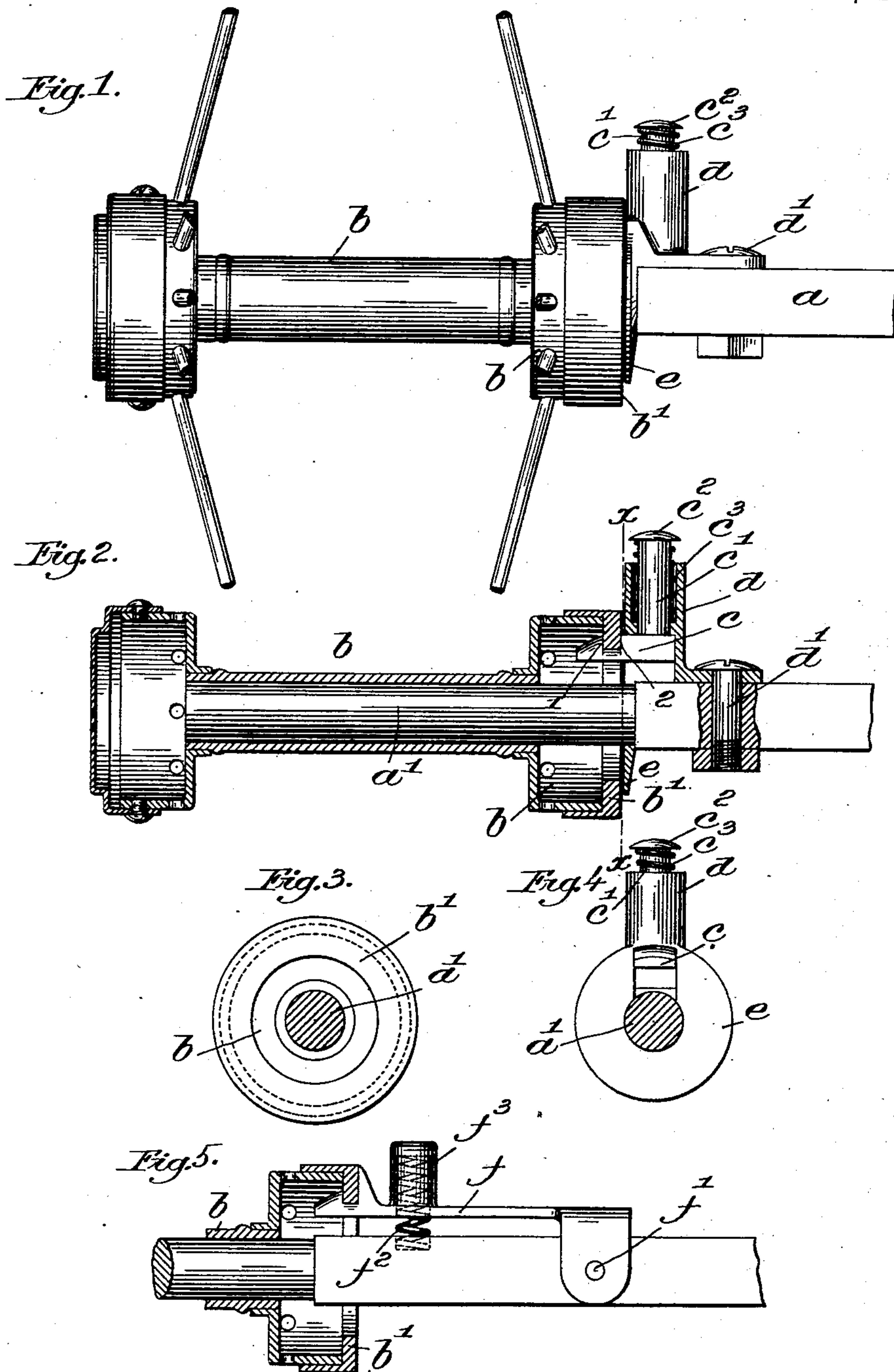


(No Model.)

S. DAY.  
HUB ATTACHING DEVICE.

No. 568,894.

Patented Oct. 6, 1896.



Witnesses.  
Fred S. Grumbaf.  
Thomas J. Drummond.

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# UNITED STATES PATENT OFFICE.

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## HUB-ATTACHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 568,894, dated October 6, 1896.

Application filed January 13, 1896. Serial No. 575,259. (No model.)

*To all whom it may concern:*

Be it known that I, STILLMAN DAY, of Leominster, county of Worcester, State of Massachusetts, have invented an Improvement in Hub-Attaching Devices for Vehicles, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention has for its object to provide a novel device for attaching wheel-hubs to the axles of vehicles which shall dispense with the use of the usual threaded nut at the outer end of the axle.

In my invention to be described the moving parts of the device are mounted upon the axle instead of upon the wheel-hub, as heretofore, and by thus mounting the device upon the axle I am enabled to greatly simplify and improve the construction of the device.

In the drawings, Figure 1, in side elevation with the wheel partially broken away, shows an axle and a wheel-hub secured thereon by means of an attaching device embodying my invention; Fig. 2, a vertical longitudinal section of the device shown in Fig. 1, a part of the axle being shown in elevation; Fig. 3, an outer end view of the wheel-hub; Fig. 4, a vertical cross-section on the dotted line  $x x$ , Fig. 2, looking to the right; and Fig. 5, a view illustrating a modified form of my invention.

In the embodiment of my invention illustrated in Figs. 1 to 4, inclusive, to which reference will be had,  $a$  is a part of a carriage-axle provided with a usual arm  $a'$ , on which the wheel-hub  $b$  is mounted to rotate.

The wheel-hub herein shown is a metallic hub of usual construction, but whether of metal or of wood the said hub is, in my invention, provided at one end, herein shown as and preferably the inner end, with an annular or ring-like holding-lip  $b'$ , adapted to be engaged by a spring-controlled catch  $c$ , mounted upon the axle and shown as arranged to rise and fall thereon for engagement with and disengagement from the said lip  $b'$ .

In the construction shown the catch  $c$  is provided with a cylindrical shank  $c'$ , adapted to rise and fall in a suitable socket  $d$ , bolted or otherwise secured at  $d'$  to the axle, said

shank  $c'$  being shown as provided at its upper end with a suitable head  $c^2$ , between which and the bottom of the socket is interposed a spring  $c^3$ , adapted to move the said catch normally into its position, engaging the lip on and maintaining the hub in running position.

The catch  $c$  is formed by a rigid bar notched to receive the lip on the hub and therefore presents two walls or surfaces 1 2, the wall 1 acting to prevent removal of the wheel from the axle, while the wall 2 acts as a stop-surface, against which the lip  $b^2$  travels during rotation of the wheel and which moves the limit of inward movement of the wheel on the axle.

I have shown a dust-guard  $e$  on the axle, and, it may be, forming a part of the socket, casting  $d$ , to close the opening at the inner end of the hub, into which the catch  $c$  enters for engagement with the lip  $b'$ .

For the best results the outer end of the catch  $c$  is beveled, as shown, in order that the wheel-hub may be pushed directly onto the axle without requiring positive movement of the catch by the operator, said catch automatically moving to engage and hold the hub. For disengagement, however, the catch  $c$  must be positively moved from engagement with the whole lip.

In Fig. 5 I have shown a slightly-modified form of my invention, wherein the catch  $f$  is pivoted to the axle  $f'$  and is held in engaging position by a suitable, preferably spiral, spring  $f^2$ , shown as recessed into the axle and seated in an upwardly-extended inverted socket  $f^3$ .

By my invention the number of moving parts and the construction and operation of the same are reduced to the simplest possible condition and operation, much simpler, in fact, than is possible where the parts are mounted upon the hub. I also find that the same may be applied to vehicles with hardly any excess of cost over the usual nut threaded upon the outer end of the axle.

What I claim is—

1. In a hub-attaching device, the combination with an annular inturned lip on the hub, of a rigid bar permanently secured to the axle, notched at its outer end to snugly fit



said lip and thereby constitute an unyielding catch having a retaining-wall on one side and an opposed stop-surface on the other side firmly holding the hub against longitudinal movement in either direction, said bar being rigidly held at its inner end against longitudinal movement, and a spring independent of said bar normally maintaining the same in yielding engagement with said lip, substantially as described.

2. In a hub-attaching device, the combination with an annular inturned lip on the hub, of a socket-piece fixed on and projecting laterally from the axle, a rigid bar, notched at its outer end to snugly fit said lip and thereby constitute an unyielding catch having a retaining-wall on one side and an opposed stop-surface on the other side, firmly holding the hub against longitudinal movement in either direction, said bar being rigidly held at its inner end by said shoulder against longitudinal movement, and having a shank held by and operating in said socket-piece, and a

spring independent of said bar normally holding the same in engagement with said lip, substantially as described.

3. In a hub-attaching device, the combination with an annular inturned lip on the hub, of a socket-piece fixed on the axle, an annular dust-guard secured to the said socket-piece and surrounding the axle closely adjacent said hub, a rigid bar, having a notch at its outer end to engage said lip, and a radially-projecting shank at its inner end held by and operating in said socket-piece, said dust-guard being properly cut away to permit said bar to operate, and a spring normally holding said bar in engagement with said lip, substantially as described.

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

STILLMAN DAY.

Witnesses:

CHARLES A. JOSLIN,  
MARGARET D. MORSE.