(No Model.)

S. DAY.

HUB ATTACHING DEVICE.

No. 597,315. Patented Jan. 11, 1898.

Fig. 1

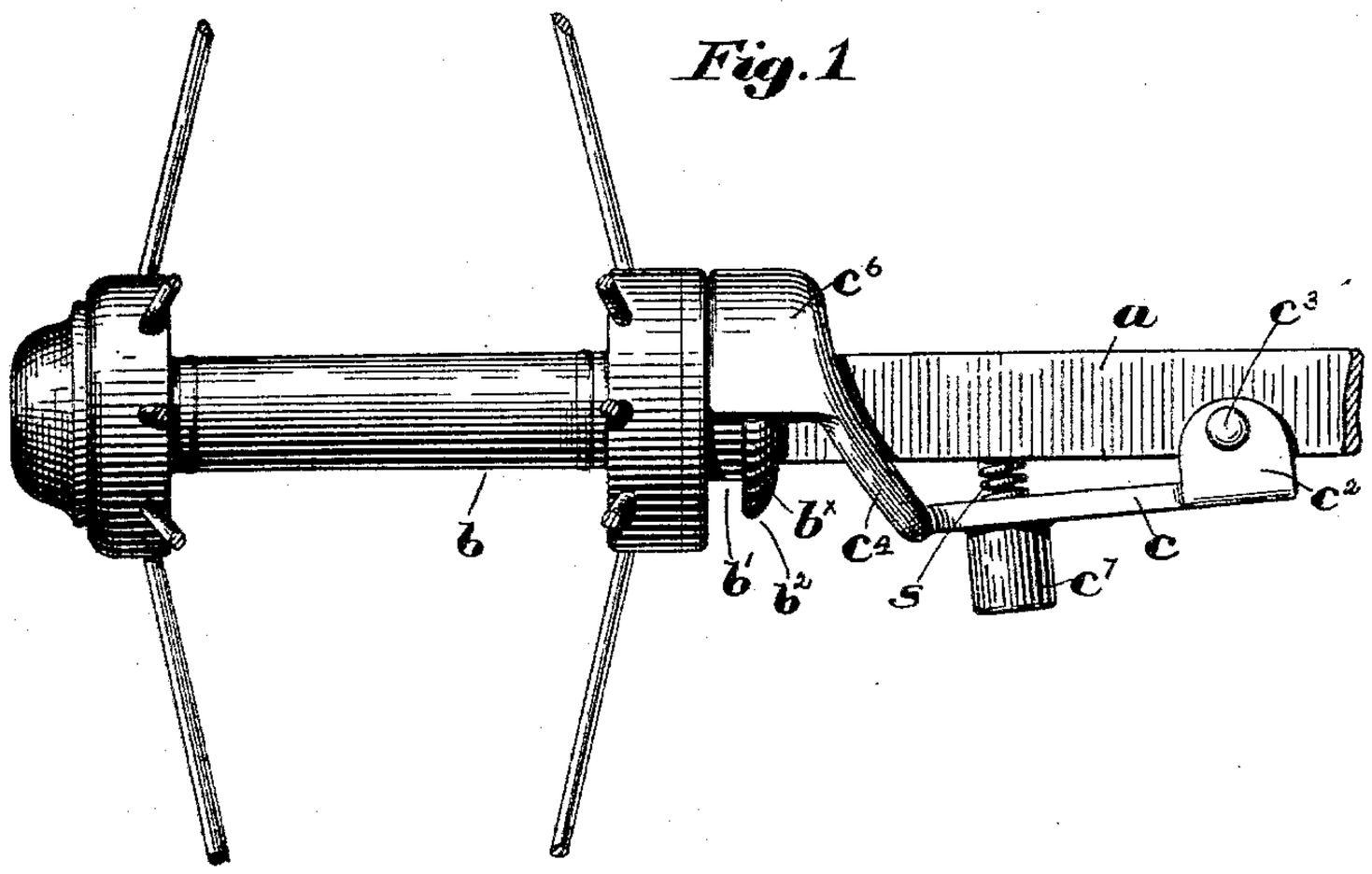


Fig. 2.

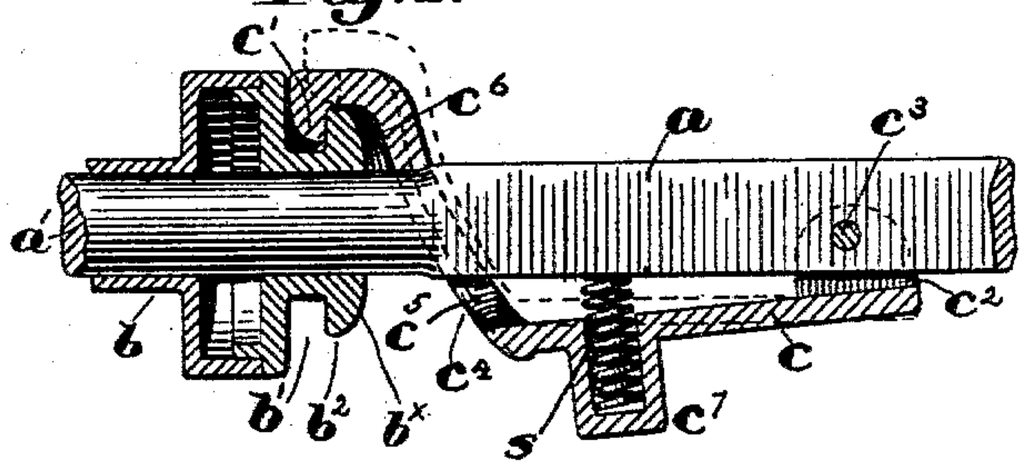


Fig. 4.

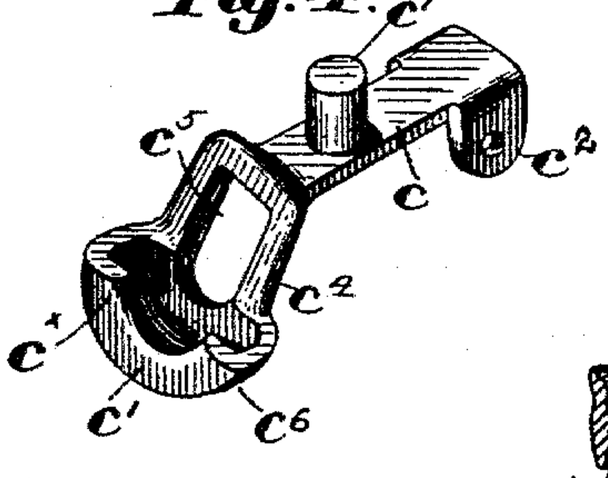
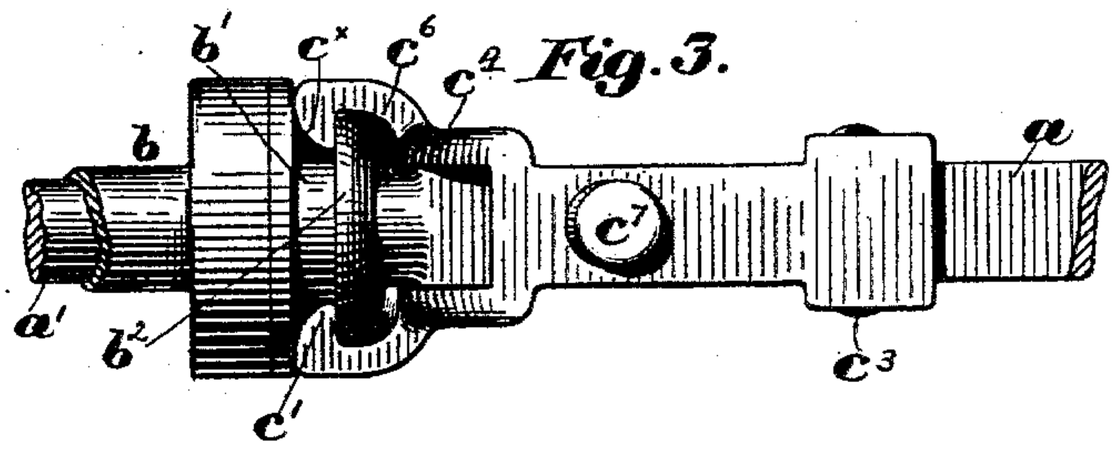


Fig. 3.



Witnesses:
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Attys.

UNITED STATES PATENT OFFICE.

STILLMAN DAY, OF LEOMINSTER, MASSACHUSETTS, ASSIGNOR TO THE F. A. WHITNEY CARRIAGE COMPANY, OF SAME PLACE.

HUB-ATTACHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 597,315, dated January 11, 1898.

Application filed September 24, 1897. Serial No. 652,798. (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, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to means for attaching wheel-hubs to the axles of vehicles without the use of the usual threaded nut at the outer end of the axle; and it has for its particular object the improvement of the device forming the subject-matter of United States Patent No. 568,894, granted to me October 6, 1896. In said patent the hub is shown as provided with an inturned annular lip adapted to be engaged by a spring-controlled catch permanently secured to the axle, the points of attachment of said catch and engagement with the lip of the hub being located on the same side of the longitudinal center of the axle. With this construction it has been found that sometimes a sudden heavy strain put upon the wheel will cause the catch to be disengaged from the holding-lip of the hub, detaching the latter from the axle; and in my present invention I have devised means whereby the greater the outward pull on the hub the more firmly will the locking device retain it in place on the axle.

Figure 1, in side elevation with the wheel broken away, represents an axle and a wheel-hub secured thereon by an attaching device embodying my invention. Fig. 2 is a vertical longitudinal section thereof, only a portion of the hub being shown. Fig. 3 is an under side view of the parts shown in Fig. 2, and Fig. 4 is a perspective view of the locking-bar detached.

Referring to Figs. 1 to 3, a is a part of a vehicle-axle provided with the usual spindle a', on which the wheel-hub b is rotatably mounted.

The wheel-hub herein shown is a metallic hub of well-known construction, though my invention is equally adapted to wooden hubs, in either case the hub being provided at its inner end preferably with an annular recess or groove b', leaving an outturned flange b^2, preferably rounded or convexed on its external face, as at $b^\times$. This recess b' is adapted to be entered by a curved inturned lip c', formed on the outer end of a locking-bar c. I have herein shown the locking-bar as provided at its inner end with ears c^2, which straddle the axle a and are pivoted thereto at c^3, the outer end of said bar being upturned at c^4 and slotted at c^5 to permit the passage of the axle therethrough. The extremity of said upturned portion c^4 is shaped to form a curved cup-like extension c^6, the inturned lip c' forming the outer wall thereof. As will be obvious from Figs. 1 and 2, the said lip is adapted to enter the annular recess b' of the hub and engage the flange b^2, the latter entering the extension c^6, the lip and flange cooperating to prevent withdrawal of the hub from the axle.

The bar c is provided with an outwardly-extended socket c^7, in which a spiral spring s is seated, said spring bearing on the axle to normally maintain the locking-bar in operative position with the lip c' in yielding engagement with the hub-flange b^2. The outer face $c^\times$ of the lip c' is preferably convexed, as shown, to facilitate the movement thereof over the convex face of the flange b^2 and into the recess b'. When in locking position, the lip is held between the two walls of the recess, and thus acts not only to prevent outward longitudinal movement of the hub, but also to act as a stop-surface against inward movement of the hub.

The points of attachment of the locking-bar to the axle and engagement of the lip c' and flange b^2, respectively, are located at opposite sides of the longitudinal center of the axle, so that outward pull of the hub, acting on the lip c', tends to draw the latter more tightly toward the center of the axle and thus effectually prevents accidental disengagement of the locking device.

I have shown the locking-bar in releasing position by dotted lines, Fig. 2, to permit removal of the hub by compression of the spring s.

The cup-like extension c^6 projects over the upper portion of and serves to form a dust-guard for the inner end of the hub.

The lip c' is semicircular or slightly less than semicircular in extent, as may be found most convenient, and it presents an extended

and very strong engaging surface with the hub.

My invention is not restricted to the precise construction and arrangement herein shown, as the same may be modified or rearranged without departing from the spirit and scope of my invention, the gist of which consists in so mounting the locking member on the axle as to bring its point of attachment thereto and the point of engagement with the hub on opposite sides of the center of the axle.

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

1. In a hub-attaching device, the combination with a hub provided with an annular holding portion, of a coöperating locking member yieldingly mounted on one side of the axle and adapted to engage the hub on the opposite side of the longitudinal center of the axle, substantially as described.

2. In a hub-attaching device, the combination with the hub having an annular flange, of the axle having a yieldingly-mounted locking-bar permanently secured thereto, provided at its outer end with an inturned lip to engage the said flange at the side of the axle opposite to the point of attachment of said bar, and thereby prevent withdrawal of the hub, substantially as described.

3. In a hub-attaching device, the combination with an annularly-recessed hub, of the axle having a yieldingly-mounted locking-bar permanently secured thereto, provided at its outer end with an inturned lip to enter the said recess at the side of the axle opposite to the point of attachment of said bar, to thereby firmly hold the hub against longitudinal movement in either direction, substantially as described.

4. In a hub-attaching device, the combination with a hub having a retaining portion, of the axle having a rigid locking-bar permanently secured thereto, adapted to engage the retaining portion of and maintain the hub on the axle, the point of attachment of said bar and the portion thereof engaging the hub being located at opposite sides of the longitudinal axis of the axle, and means to normally retain the locking-bar in yielding engagement with the hub, substantially as described.

5. In a hub-attaching device, the combination with an annularly-recessed hub, of the axle, a rigid locking-bar pivotally mounted thereon and having a bent slotted end through which the axle is extended, an inturned curved lip on the end of said slotted portion, to enter the annular recess and retain the hub from longitudinal movement, and a spring to normally retain said lip yieldingly in the recess, substantially as described.

6. In a hub-attaching device, the combination with the hub having an annular flange, of the axle having a yieldingly-mounted locking-bar permanently secured thereto, provided at its outer end with a cup-like extension having an inturned lip, said extension partially surrounding and the lip engaging the flange, to retain the hub on the axle, outward pull on the bar tending to force the lip into closer engagement with the flange, substantially as described.

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

STILLMAN DAY.

Witnesses:
CHAS. S. HOUGHTON,
WM. H. CROPPER.