

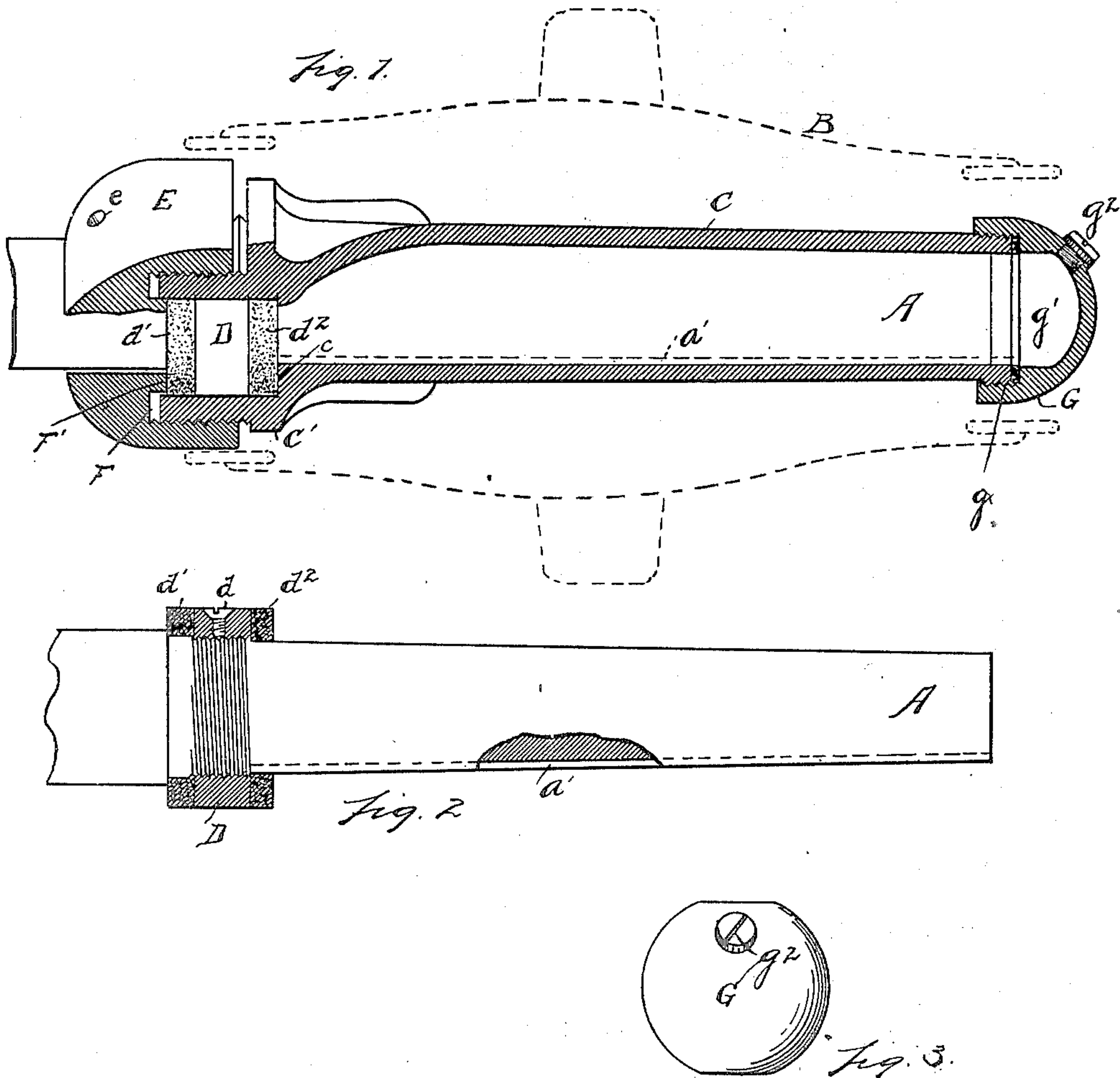
No. 660,074.

Patented Oct. 16, 1900.

C. H. FULLER.
CARRIAGE AXLE.

(Application filed Jan. 8, 1900.)

(No Model.)



WITNESSES
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UNITED STATES PATENT OFFICE.

CHARLES H. FULLER, OF OXFORD, MICHIGAN.

CARRIAGE-AXLE.

SPECIFICATION forming part of Letters Patent No. 660,074, dated October 16, 1900.

Application filed January 8, 1900. Serial No. 685. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. FULLER, a citizen of the United States, residing at Oxford, county of Oakland, State of Michigan, have invented a certain new and useful Improvement in Carriage-Axles; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in carriage-axles, and especially to a method of retaining the wheel thereon and lubricating the bearings; and it consists in the combination hereinafter described and claimed.

In the drawings, Figure 1 is an elevation, partly in section, of my improvement. Figs. 2 and 3 are detail views of various parts.

In the drawings, A represents the axle, B the hub, and C the box, which is held within the hub B in the usual manner. The inside of this box is fashioned differently from that ordinarily constructed, as will be hereinafter described.

The end of the axle at A is plain and without any means for attaching a nut, as is usual in such devices. Just beyond the inner portion of the bearing is fastened a screw-collar D by any convenient mode of fastening to the axle. In the drawings it is shown as being screwed onto the axle. It is essential, however, that it shall be rigid and so attached that it cannot be readily turned. Hence at D d , I have shown a set-screw whereby it can be prevented from turning upon the threads formed upon the axle and yet will permit its ready removal. Upon each side of the collar D are washers d' d^2 , preferably of leather.

Referring to the box C, its inner end is fashioned as is shown in Fig. 1, having an enlargement C' cut out to inclose the collar D and the washers d' d^2 , sufficient play being left to permit of the box readily turning without binding upon the edge of the collars or washers. The inner side of the enlargement C' of the box at c forms a shoulder which comes up against the washer d^2 , forming an end or thrust bearing. The enlargement C' of the box extends beyond the washer d' , and its outside is threaded, as shown in Fig. 1.

Immediately inside of the collar D and washers the axle A is turned and is adapted to receive (before the collar D is in place) a rotating internally-threaded collar E. The internal threads of this collar being adapted to engage with the threads upon the inner end of the box C, engagement therewith is compelled by rotating the collar E in the proper direction, which can be done by means of a properly-formed tool engaging in holes e its periphery. In the collar E and behind the threaded portion is cut an annular groove F, so that there is an annular raised portion F', which is adapted to come against the washer d' when the collar E is in place and attached to the enlargement C' of the box C. It will be observed then that the collar D with the washers d' d^2 are, when the collar E is in place, adjustably held between the box C of the enlargement C' of the box and the internal annular projection F' of the collar E, and as the collar D is firmly fastened to the axle it follows that the wheel carried by the hub and box is held in place upon the axle so long as the collar E remains attached to the box C in the manner described. In order to remove the wheel, all that is necessary is to unscrew the collar E from its connection with the box C, when the wheel can be removed as in ordinary cases.

The outer end of the box C is threaded and adapted to receive a hollow cap G, which can be screwed thereon by means of internal threads cut in an annular rabbet g in the cap. The hollow g' of this cap forms an oil-chamber, and access is had thereto by means of a plug-screw g^2 , which is intended to fit oil-tight in the cap. A longitudinal groove a' (shown in Fig. 2) is cut along the under side of the axle A. This groove communicates with the hollow G' of the cap, so that when oil is introduced in the cap it has access to the groove. In order that the cap when properly adjusted may hold more oil than it otherwise would, I have located the screw-plug g^2 upon one side of its center, and when it is uppermost, as is shown in Fig. 1, it is obvious it will hold oil up to the opening formed by the withdrawal of the screw-plug. If the screw-plug were centered on an axial line with the axle, it would not hold oil quite up to the center. By this means I am en-

abled to furnish oil enough for the bearing to run a long time without reoiling. It is obvious that this means of oiling could not be used with the ordinary form of axle and wheel where the wheel is held upon the axle by means of a nut upon the extremity of the axle.

The mode of operation is apparent from the description.

10 It is obvious that certain details could be changed without departing from the spirit of my invention. It is also obvious that the bearings can be oiled by removing the screw-collar D and that by the heating of the wheel or bearing from any cause the oil can expand 15 in the space in the cap, thus preventing an overflow. It is also obvious that in case the axle should become heated it can expand longitudinally without binding and "setting" the wheel.

20 What I claim is—

1. In an axle-bearing, the combination of an axle, a hub carrying a box, said box being provided with external screw-threads at 25 its inner end, a collar D, securely attached to the axle at the inner end of the bearing, a shoulder c, upon the inner wall of the box adapted to lie against the outer side of said collar, or the washer thereon, said box extending over said collar, and a retaining-collar having internal screw-threads adapted 30 to engage with the screw-threads upon the inner end of the box, said retaining-collar being provided with an annular groove F,

and an annular projection F', said groove 35 being adapted to permit the entrance thereinto of the inner end of the box, and said projection being adapted to extend within said box and lie against the inner side of the collar D, or the washer thereon, substantially as described. 40

2. In an axle-bearing, the combination of an axle, a hub carrying a box, said box being provided with external screw-threads at its inner end, a removable collar D; 45 securely attached to the axle at the inner end of the bearing, a shoulder c, upon the inner wall of the box adapted to lie against the outer side of said collar, or the washer thereon, said box extending over said collar, and 50 a retaining-collar, E, having internal screw-threads adapted to engage with the screw-threads upon the inner end of the box, said retaining-collar being provided with an annular groove F, and an annular projection 55 F', said groove being adapted to permit the entrance thereto of the inner end of the box, and said projection being adapted to extend within said box and lie against the inner side of the collar D, or the washer thereon, substantially as described. 60

In testimony whereof I sign this specification in the presence of two witnesses.

CHARLES H. FULLER.

Witnesses:

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