No. 671,869. Patented Apr. 9, 1901.

R. D. SEIBERT.

MEANS FOR SECURING VEHICLE WHEELS TO AXLE ARMS.

(Application filed Sept. 29, 1900.)

(No Model.)

FIG. 1.

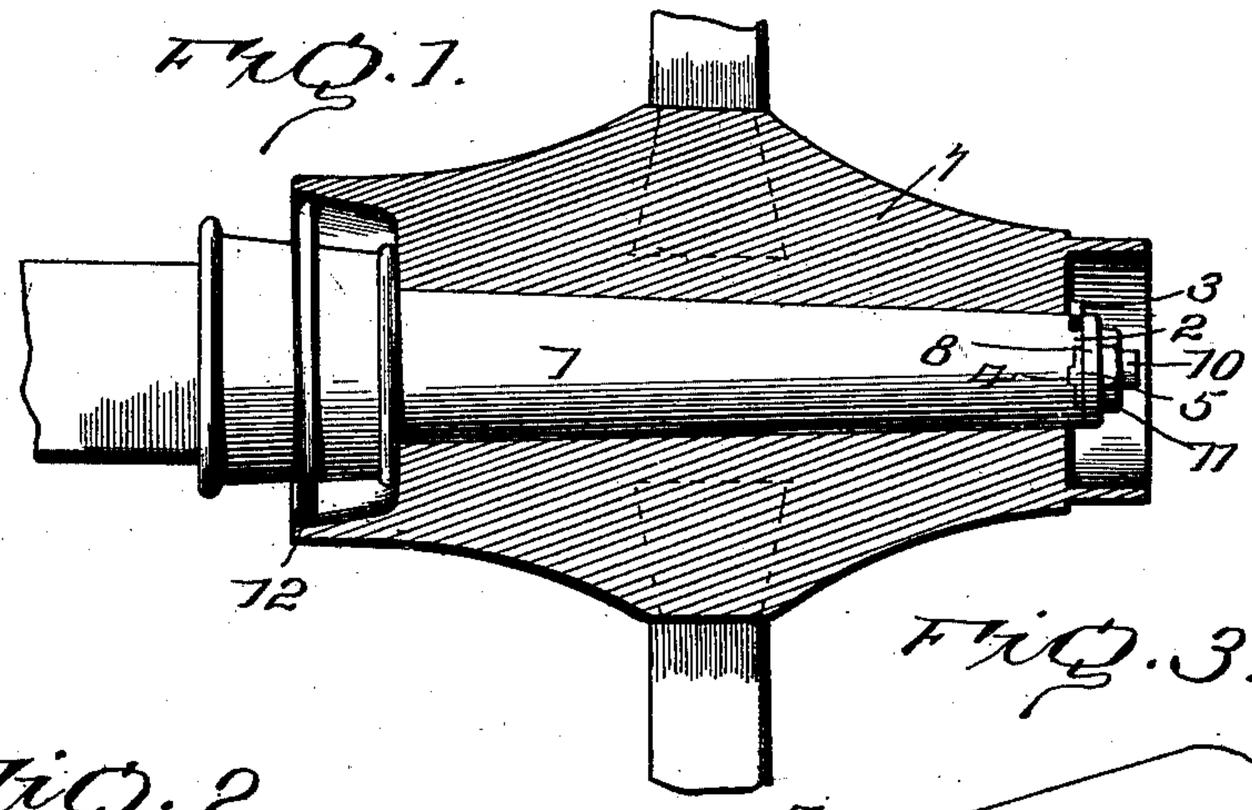


FIG. 3.

FIG. 2.

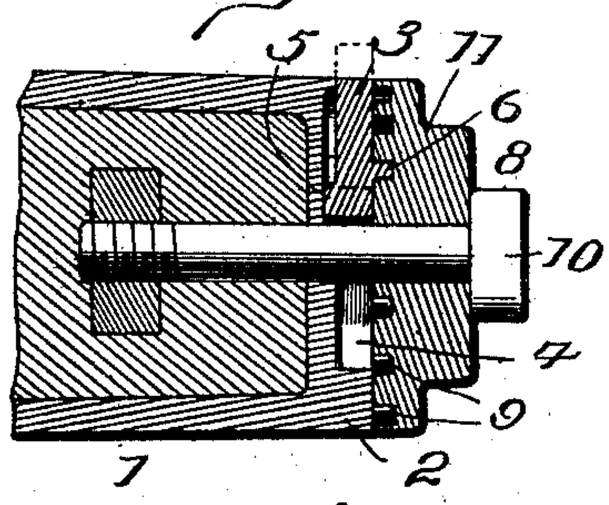


FIG. 4.

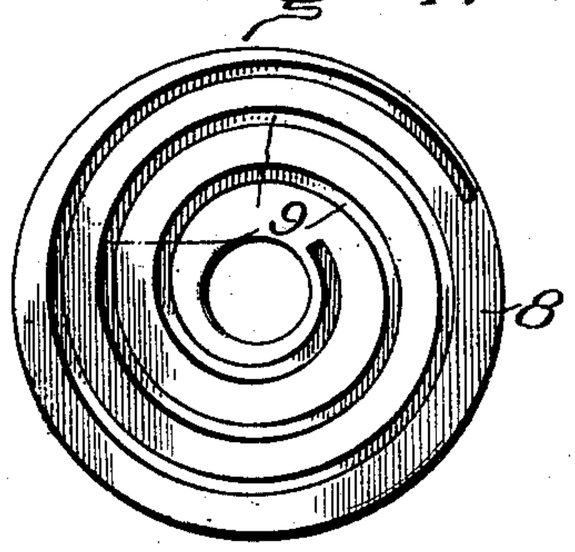


FIG. 5.

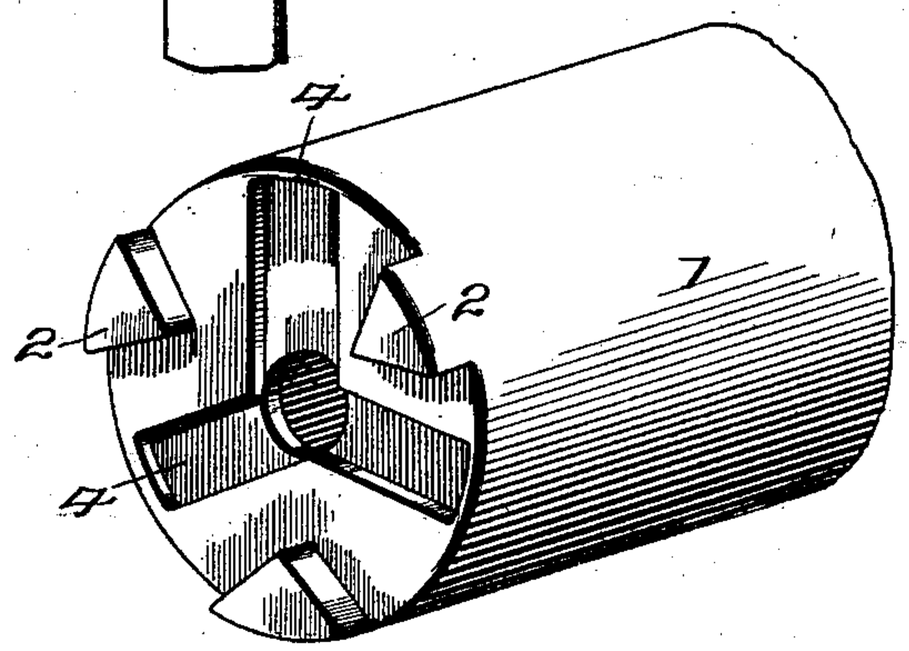
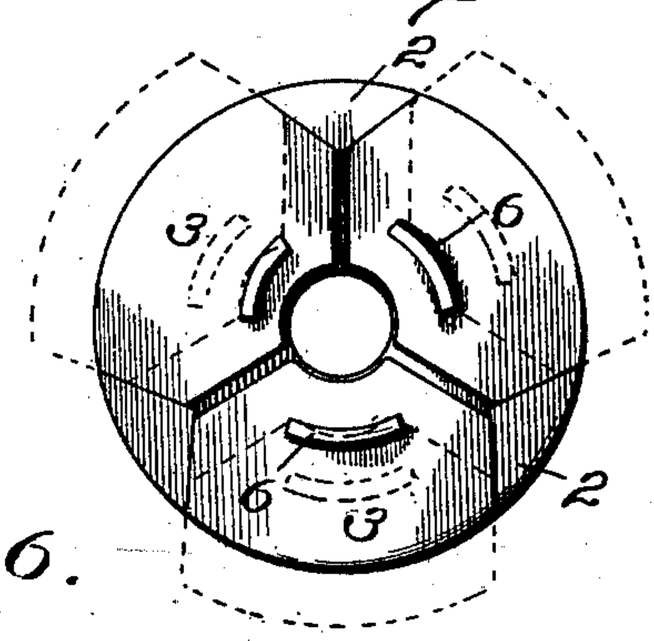


FIG. 6.



Witnesses
Jno. Imirie
Walter A. Williams.

Inventor
R. D. Seibert.

By R. H. & R. B. Lacey. Attorney

UNITED STATES PATENT OFFICE.

ROBERT D. SEIBERT, OF MILLVILLE, PENNSYLVANIA.

MEANS FOR SECURING VEHICLE-WHEELS TO AXLE-ARMS.

SPECIFICATION forming part of Letters Patent No. 671,869, dated April 9, 1901.

Application filed September 29, 1900. Serial No. 31,569. (No model.)

To all whom it may concern:

Be it known that I, ROBERT D. SEIBERT, a citizen of the United States, residing at Millville, in the county of Columbia and State of Pennsylvania, have invented certain new and useful Improvements in Means for Securing Vehicle-Wheels to Axle-Arms; and I do hereby 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 appertains to make and use the same.

This invention relates to means for securing vehicle-wheels to axle-arms in such a manner as to prevent their casual displacement and yet admit of their ready removal for lubrication without necessitating taking off the axle-nut, as commonly required.

The invention consists of radially-movable keepers fitted to the outer end of the axle-arm and adapted to be projected beyond the sides of said arm to hold the wheel in place and to be drawn inward, so as to clear the said sides and admit of the removal of the wheel for any desired purpose. A scroll-plate coöperates with the keepers to effect a radial or outward movement thereof.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an axle-arm embodying the invention, the hub portion of the wheel mounted thereon being in section. Fig. 2 is a detail section of the outer end portion of the axle-arm on a larger scale, the dotted lines showing the keepers projected. Fig. 3 is a perspective view of the outer end of the axle-arm, the keepers, scroll-plate, and bolt being removed. Fig. 4 is a view of the inner side of the scroll-plate. Fig. 5 is an obverse, end, and reverse view of a keeper. Fig. 6 is an end view of the axle-arm with the keepers in place.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The axle-arm 1 may be of metal or wood, and in the latter event it is protected by a skein in the usual manner to sustain the wear and the strain and load. A series of guide-lugs 2 are provided at the outer extremity of the axle-arm and are spaced circumferentially to receive between them keepers 3 of segment form. Radial grooves or seats 4 are provided in the outer end of the axle-arm intermediate of the guide-lugs 2 to receive lugs 5 at the rear side of the keepers 3 and which supplement the action of the lugs 2 in directing the keepers in their radial sliding movements. The guide grooves or seats 4 are closed at their outer ends to limit the outward movement of the keepers 3 and prevent their radial displacement. In the present instance the axle-arm is of wood and protected by a skein which is provided at its outer end with the lugs 2 and radial guide-grooves 4. The keepers 3 are of segment form and fit snugly between adjacent guide-lugs 2 and are provided upon their rear sides with lugs 5 to enter the grooves or seats 4 and assist materially in guiding the keepers in their radial movements and to prevent displacement by coming in contact with the outer end walls of the said seats 4. Cogs 6 project from the outer faces of the keepers 3 adjacent to their inner edges and are positioned so as to form segments of a spiral when the keepers are in position, as shown most clearly in Fig. 6. The keepers correspond in thickness to the depth of the lugs 2, so as to move freely in the space formed between the outer end of the axle-arm and the inner face of the scroll-plate. In their normal position the outer edges of the keepers clear the sides of the arm, so as to permit the vehicle-wheel to be placed in position or to be removed, and when projected the outer edge portions of the keepers stand beyond the sides of the axle-arm and overlap the outer end of the hub 7 of the vehicle-wheel and retain the latter in place on the axle-arm.

The scroll-plate 8 is provided upon its inner face with a scroll 9 to coöperate with the cogs 6 of the keepers, so as to move the latter in or out, according to the direction of rotation of the scroll-plate. The scroll 9 may

be either a spirally-formed rib or groove and receives the cogs 6, which are disposed so as to correspond with the pitch of the scroll and accurately match therewith. The scroll plate is mounted upon a bolt 10, threaded at its inner end into the axle-arm, the head of the bolt overlapping the outer side of the scroll-plate, which is held in place thereby. In order to admit of the ready turning of the scroll-plate, it is provided upon its outer face with a many-sided boss 11, adapted to receive a wrench, spanner, or like tool, by means of which the scroll-plate is turned to effect either an outward or an inward movement of the keepers. When the scroll-plate is turned to the desired position, it is held fast by screwing home the bolt 10, which effects a clamping of the scroll-plate between the head of the said bolt and the outer faces of the guide-lugs 2.

In practice, the parts being assembled substantially as shown in Figs. 1 and 2 and it being required to effect a movement of the keepers, the bolt 10 is loosened sufficiently to admit of the easy turning of the scroll-plate to withdraw or project the keepers, as may be required. If the wheel is to be placed into position or to be removed, the scroll-plate is turned to cause the keepers to move inward and clear the sides against the arm, when the desired result can be accomplished. When the wheel is in position upon the axle-arm, it is retained in place by turning the scroll-plate so as to project the keepers 3 beyond the sides of the axle-arm, as shown by the full lines in Fig. 1 and the dotted lines in Fig. 2, after which a tightening of the bolt 10 effects a clamping of the scroll-plate and fixes the position of the keepers, as will be readily comprehended.

A collar 12 is provided adjacent the shoulder at the inner end of the axle-arm and acts as a shield to prevent sand, mud, and like foreign matter entering the bore of the hub and wearing away the contacting surfaces.

Having thus described the invention, what is claimed as new is—

1. In combination with an axle-arm, outwardly-movable keepers, a scroll-plate coöperating therewith, and a bolt forming a support for the scroll-plate, and clamping means to secure it in an adjusted position, substantially as set forth.

2. In combination with an axle-arm provided at its outer end with radial grooves, keepers having lugs upon their rear sides to fit in the said grooves to direct the keepers in their radial movements, and a scroll-plate cooperating with the said keepers, as and for the purpose set forth.

3. In combination with an axle-arm provided with circumferentially-spaced guide-lugs, and radial grooves intermediate of adjacent lugs, keepers fitted between adjacent lugs and having lugs at their rear sides to enter said guide-grooves, and a scroll-plate moving the keepers in and out, substantially as set forth.

4. In combination with an axle-arm, radially-movable keepers having cogs upon their outer sides disposed to form segments of a spiral thread, and a plate having a scroll matching and coöperating with the cogs of the keepers to move the latter in and out, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT D. SEIBERT. [L. S.]

Witnesses:
W. B. CHRISTIAN,
E. W. PEGG.