No. 777,243. PATENTED DEC. 13, 1904.

C. P. CLARK.

AXLE.

APPLICATION FILED AUG. 3, 1904.

NO MODEL.

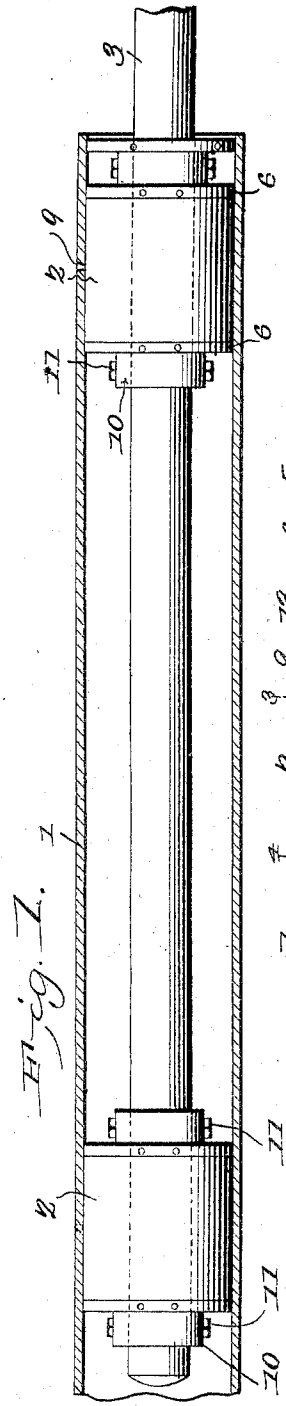


Fig. 1.

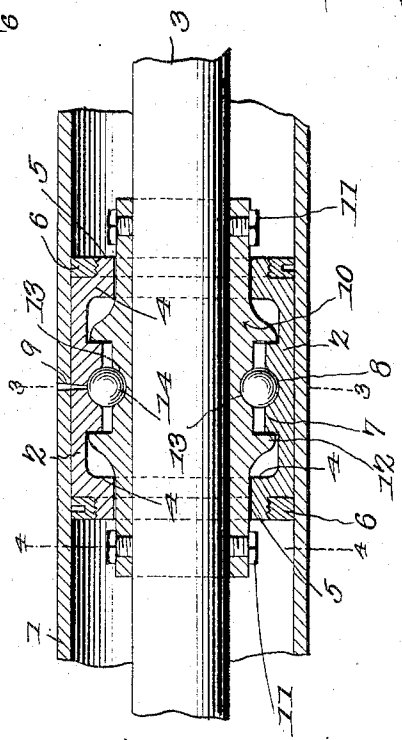


Fig. 2.

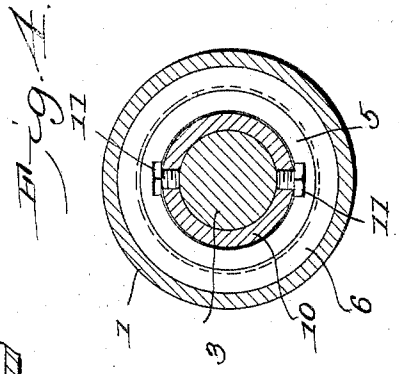


Fig. 4.

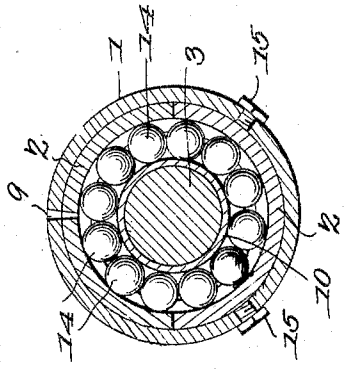


Fig. 3.

Witnesses

E. G. Stewart

Jno. E. Parker

Chancy P. Clark, Inventor,

by C. A. Snow & Co.

Attorneys

No. 777,243. Patented December 13, 1904.

UNITED STATES PATENT OFFICE.

CHANCY PHILIP CLARK, OF CHATTANOOGA, TENNESSEE.

AXLE.

SPECIFICATION forming part of Letters Patent No. 777,243, dated December 13, 1904.

Application filed August 3, 1904. Serial No. 219,344. (No model.)

To all whom it may concern:

Be it known that I, CHANCY PHILIP CLARK, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and useful Axle, of which the following is a specification.

This invention relates to improvements in wheel-axles, and has for its principal object to provide a novel form of wheel-axle in which the wheels may be rigidly secured to the axle, the latter being mounted for revoluble movement within a suitable support.

A further object of the invention is to provide a device of this character which will permit of the ready assembling of the parts and their ready disconnection for inspection or repairs.

A still further object of the invention is to provide improved bearings in which provision is made for the retention of a comparatively large quantity of lubricating material, so that frequent renewal of the supply will not be necessary.

With these and other objects in view, as will more fully hereinafter appear, the invention consists of the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of a portion of a wheel-axle and its supporting device constructed in accordance with the invention. Fig. 2 is an enlarged sectional view of one of the ball-bearings. Fig. 3 is a transverse sectional elevation of the same on the line 3 3 of Fig. 2. Fig. 4 is a similar view on the line 4 4 of Fig. 2.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The working parts are arranged within a casing 1, that preferably is in the form of a metallic tube rigidly secured to a suitable portion of the vehicle and extending preferably for the full width thereof.

Within the casing 1 are arranged two sets of sleeves 2, each set forming a part of bearings for the support of an axle member 3, which projects beyond the end of the casing and is adapted to receive a wheel of any desired character.

Each of the sleeves 2 is formed of two semicylindrical members, the division-line between them being in the horizontal plane of the axis, as indicated in Fig. 3, and at the ends of each sleeve are inwardly-projecting flanges 4, and from these extend annular end flanges 5, provided with screw-threads for the reception of ring-nuts 6, by means of which the end members of the sleeve may be secured together. At the longitudinal center of the sleeve is an annular rib 7, grooved to form a ball-race 8, and at a point in alinement with the ball-race is drilled an opening 9, through which lubricating material may be introduced.

On the axle or shaft is placed a collar 10, that is confined in place by set-screws or bolts 11, and at points intermediate of the length of the collar are two spaced annular flanges 12, the space between them being of a width slightly greater than the width of the rib 7, and midway of the width of the space is an annular groove 13, forming a ball-race, the two ball-races receiving an annular row of antifriction-balls 14. The outer walls of the flanges 12 are arranged on curved lines, as shown, in order to facilitate the flow of oil up over them and to the ball-containing space.

In some cases the parts of the sleeve are first placed on and secured to the shaft, and afterward the two members of each collar are placed in position and united by ring-nuts 6. The parts may then be forced inward bodily until the openings formed in the casing and sleeve for the introduction of lubricant are in alinement, after which locking-screws 15 may be passed through openings formed in the casing to engage with and hold the sleeve from turning.

The arrangement is such that the outer sleeve 2 will hold a very large quantity of lubricating material. When the vehicle is at

rest, this lubricating material will accumulate in the lower half of the sleeve, but will not overflow, and as soon as the axle or shaft commences to rotate the lubricating material will be turned around with it and all parts of the ball-race will be thoroughly lubricated without any danger of the leakage of oil at the hubs of the vehicle-wheels.

Having thus described the invention, what is claimed is—

1. The combination with a casing open at one end, of an axle, a pair of collars rigidly secured thereto, sectional ball-bearing sleeves surrounding the collars, antifriction-balls disposed between the collars and sleeves, means independent of the casing for securing the sections of the sleeves to each other, the two sets of sleeves and their bearing-balls being bodily removable with the axles and collars through the end opening of the casing, and means for securing the sleeves to said casing.

2. The combination with a casing, of a revoluble member, a ball-bearing sleeve secured thereto, a sectional ball-bearing sleeve surrounding the first, and each of the sections having a threaded flange, ring-nuts adapted to the threaded flanges and serving to confine the sections in place, and means for securing the outer sleeve to said casing.

3. The combination with a casing, of a revoluble member, a ball-bearing sleeve secured thereto, a sectional ball-bearing sleeve having reduced end portions forming threaded flanges, ring-nuts adapted to the threaded flanges and serving as a means for confining the sections in place, there being interengaging flanges carried by both sleeves for preventing independent longitudinal movement of either.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHANCY PHILIP CLARK.

Witnesses:
W. W. RUTLEDGE,
J. W. HIXON.