

(No Model.)

J. WALKER.  
VEHICLE AXLE.

No. 598,586.

Patented Feb. 8, 1898.

Fig. 2.

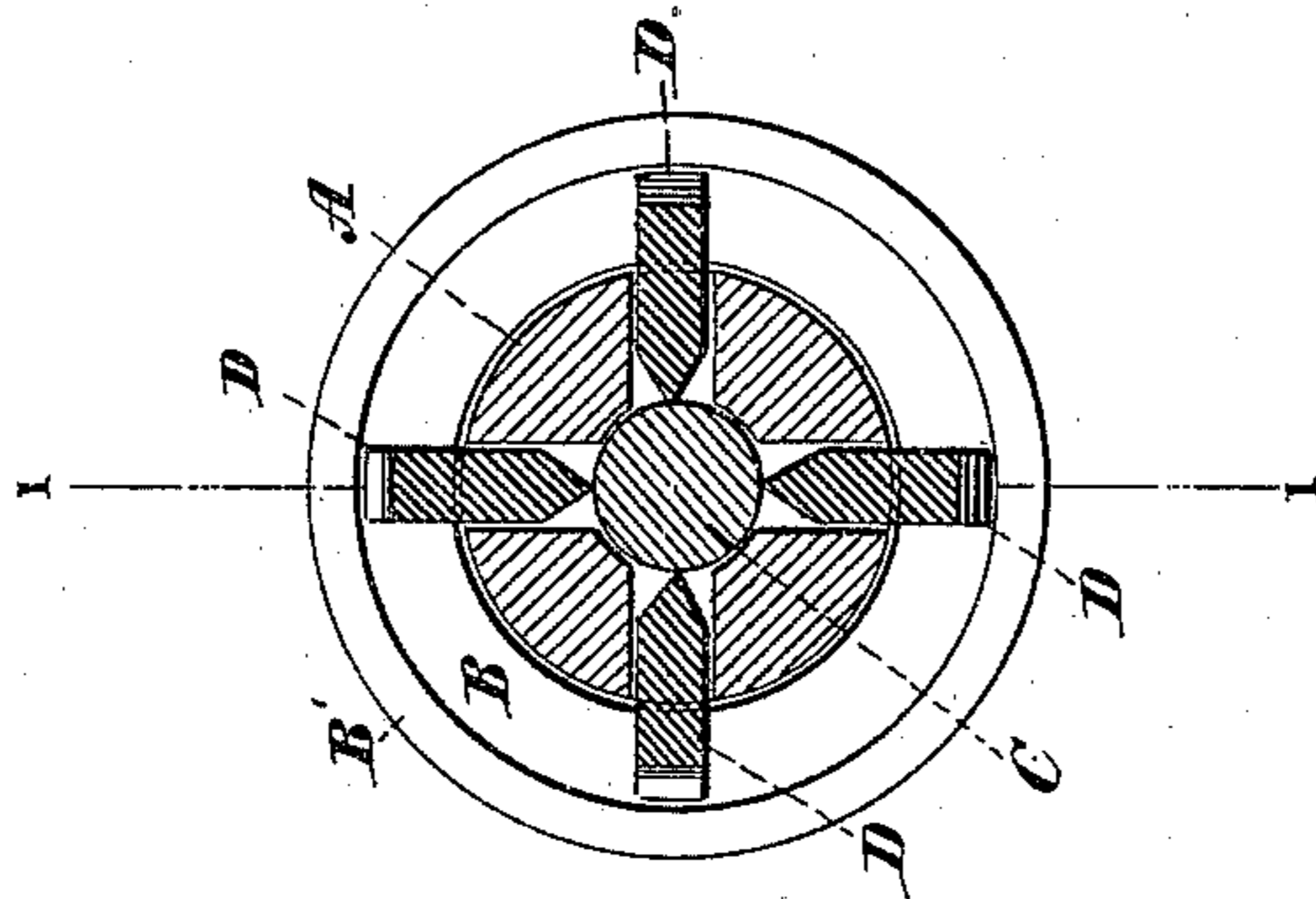
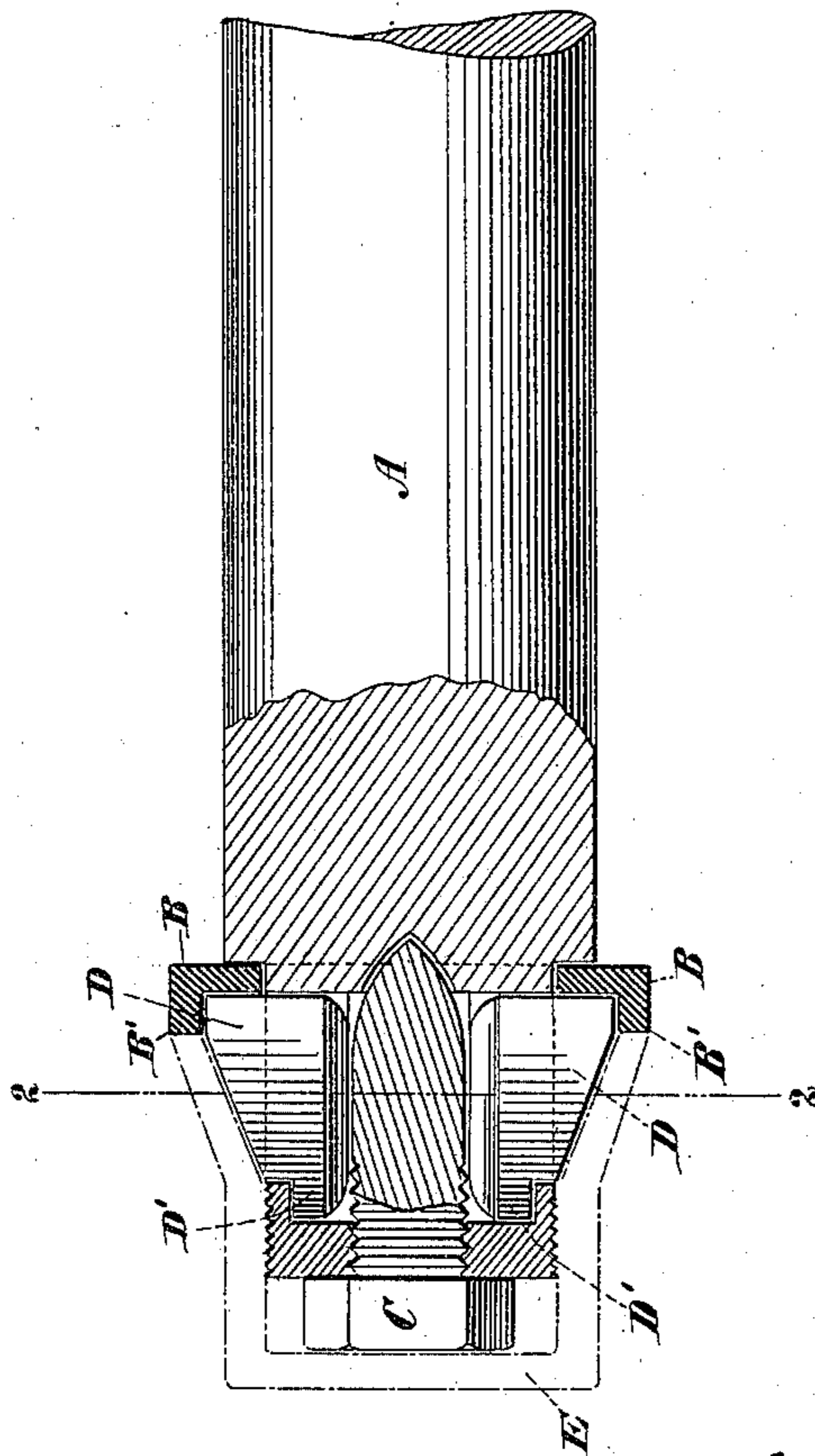


Fig. 1.



WITNESSES:

*Gustave Dietrich.*  
*John Kehlmeier.*

INVENTOR

*James Walker*

BY

*Reinhardt*

ATTORNEY.

# UNITED STATES PATENT OFFICE.

JAMES WALKER, OF NEW YORK, N. Y.

## VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 598,586, dated February 8, 1898.

Application filed October 27, 1897. Serial No. 656,481. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES WALKER, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Axles, of which the following is a full, clear, and exact description.

My invention relates to new and useful improvements in axles for wagons and the like; and it consists in the novel construction and arrangement of the parts thereof hereinafter fully set forth.

The main object of my invention is to provide, in connection with an axle, a suitable means at its free end whereby the wheel or pulley carried thereon may be securely held against accidental detachment. This means, as hereinafter described, may be easily and quickly operated and possesses the combined features of being simple, inexpensive, and effective.

Referring to the drawings, Figure 1 is a side elevation of one end of an axle, shown partly in longitudinal section on the plane of the line 1 1, Fig. 2, the wheel-retaining means being also shown partly in section. Fig. 2 is a section on the plane of the line 2 2, Fig. 1.

The means commonly employed to prevent a wheel from slipping off the end of an axle is an ordinary nut screwed into place and having a flange which bears against the hub of the wheel to hold it in place. Practice has demonstrated that this form of retaining means is not as effective as is desired, as the nut frequently jars loose and allows the wheel to fall off. It is to remedy this serious defect that my invention is chiefly designed.

Referring to the drawings, A is one end of an axle, upon which the hub of a wheel (not shown) may freely rotate. The outer extremity of said axle is preferably somewhat reduced in diameter, as shown.

B is a ring of a suitable size to be freely slipped onto the reduced end of said axle, the external diameter of said ring being sufficiently great to cause the ring to stand into the path and against the hub of the wheel commonly employed. The outer periphery of the ring B carries a laterally-projecting annular flange B' for the purpose hereinafter described. In the outer extremity of the axle A is provided a central longitudinal bore, into

which a plug C may be inserted. This plug may be provided with a suitable head, and its opposite end should be by preference tapered, as shown. If desirable, screw-threads may be formed upon a portion of the plug C, whereby it may take into a correspondingly-threaded portion of the axle A to prevent accidental displacement.

D D are locking-keys moving inwardly and outwardly through openings in the side of the axle near its end. These keys are so placed with respect to the plug C that when the latter is in the position indicated in the drawings the keys are separated and project into a position in front of the ring B, as shown, preventing its removal. When it is desired to remove said ring B, the plug C is removed and the locking-keys D moved inwardly until they are sheathed within the end of said axle.

To permit the locking-keys to move inwardly as far as possible, their inner edges are beveled, as shown in Fig. 2, so that when the plug is removed and the keys moved inwardly they will meet at an approximately central point. The flange B', previously referred to, stands over the inner ends of the keys D, thus preventing, when the parts are assembled, the accidental detachment of the inner ends of said keys. To prevent the accidental detachment of the outer ends of the keys D, I form shoulders D', which project into undercut recesses formed inside and near the extremity of the axle, as shown. Thus by means of the flange B' and the undercut recesses referred to the keys cannot be taken out or accidentally displaced when the parts are assembled. When the plug C and the ring B have been removed, then the locking-keys may be readily removed for the purpose of cleaning or otherwise.

E is an ornamental cap which may be provided, if desirable, to cover that portion of the axle and locking apparatus outside of the ring B. Any suitable number of locking-keys may be provided.

In carrying out my invention certain changes in the several details of construction may be desirable, and I therefore do not intend to limit myself to the specific construction and arrangement of the parts herein shown and described, but hold myself at liberty to make such alterations and changes as

are fairly within the spirit and scope of my invention.

While my invention has been described in connection with an axle for a wagon and the like, it is manifest that it may be used in connection with ordinary shafts, &c., for carrying pulleys, loose pinions, and the like.

What I claim is—

1. A locking means for use in connection with axles and the like, comprising keys loosely carried in the openings in said shaft and a longitudinally-removable plug between said keys.

2. A locking means for axles and the like, comprising a retaining-ring, locking-keys loosely held in place in said shaft and outside of said ring and a longitudinally-removable plug between said keys.

3. A locking means for axles and the like, comprising a shaft recessed as described at its outer end, a ring carried thereon, a later-

ally-directed flange carried by said ring, locking-keys outside of said ring and moving in the recesses in said axle, and a longitudinally-removable plug bearing against the inner edges of said locking-keys.

4. A locking means for axles and the like, comprising a shaft recessed as described at its outer end, a ring carried thereon, a laterally-directed flange carried by said ring, locking-keys outside of said ring and moving in the recesses in said axle, and a screw-threaded longitudinally-removable plug bearing against the inner edges of said locking-keys.

Signed at New York, in the county of New York and State of New York, this 21st day of October, 1897.

JAMES WALKER.

Witnesses:

R. C. MITCHELL,  
B. E. BAKER.