

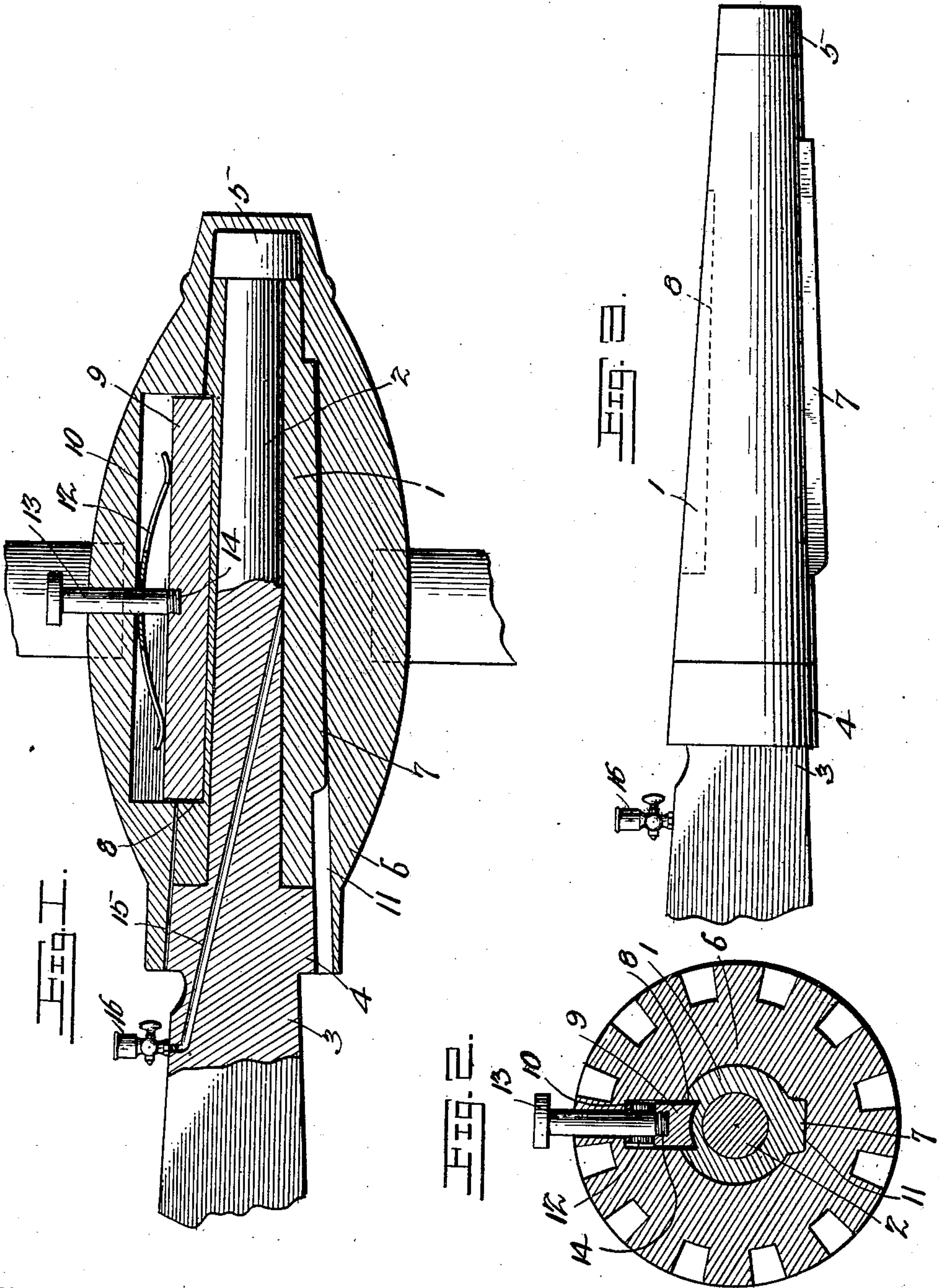
No. 689,308.

C. D. HEVENOR.
HUB.

Patented Dec. 17, 1901.

(Application filed July 31, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES DAVID HEVENOR, OF SALAMANCA, NEW YORK.

HUB.

SPECIFICATION forming part of Letters Patent No. 689,308, dated December 17, 1901.

Application filed July 31, 1901. Serial No. 70,410. (No model.)

To all whom it may concern:

Be it known that I, CHARLES DAVID HEVENOR, a citizen of the United States, residing at Salamanca, in the county of Cattaraugus and State of New York, have invented a new and useful Hub, of which the following is a specification.

The invention relates to improvements in hubs.

10 The object of the present invention is to improve the construction of hubs, more especially the means for attaching the same to an axle, and to dispense with nuts and washers, and to provide a simple, inexpensive, and efficient construction of great strength and durability designed for use on wagons, carriages, and analogous vehicles and adapted to enable oil to be employed for lubricating the same.

20 A further object of the invention is to provide a device of this character which will afford a dust-proof bearing and which will enable a wheel to be readily removed when desired without the use of a wrench or similar tool.

25 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

30 In the drawings, Figure 1 is a longitudinal sectional view of a hub and one end of an axle constructed in accordance with this invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a side elevation of one end of the axle, illustrating the arrangement of the sleeve which constitutes the axle-box and which is detachably interlocked with the hub.

40 Like numerals of reference designate corresponding parts in all the figures of the drawings.

45 1 designates a sleeve forming an axle-box and arranged on a spindle 2 of an axle 3 between inner and outer bands 4 and 5, which may be constructed in any suitable manner and which hold the sleeve against longitudinal movement. The bands 4 and 5 may be fixed to the axle in any suitable manner, and they permanently secure the sleeve to the spindle and dispense with the use of washers,

which become soon worn and which when worn cause the wheel to wobble. By obviating the necessity of employing washers the durability of the vehicle is greatly increased. 55

The outer faces of the bands are slightly tapered to fit a removable hub 6, which has its outer end closed and which fits snugly against the inner band or collar 4, whereby a dust-proof bearing is afforded. The sleeve 60

which forms the axle-box is provided at one side with a longitudinal enlargement or key 7, and it has a longitudinal recess 8, located at a diametrically opposite point and adapted to receive a spring-actuated block 65 or bar 9, which is mounted in a recess 10 of the hub. The hub is provided at one side with a longitudinal groove 11 to receive the key or enlargement 7, and the recess 10 is located at a diametrically opposite point. 70

The block or bar fits into the recess 8 of the sleeve and locks the hub on the axle and holds the axle-box rigid with the hub. The key or enlargement also prevents the hub from rotating independently of the sleeve, 75 and it thereby relieves the locking device of strain. The block is held in engagement with the sleeve by a bowed spring 12, interposed between the hub and the block or bar and having its ends engaging the latter and 80

provided with a central opening, through which extends a stem 13, passing through a perforation of the hub and having a threaded inner end 14, which engages a threaded socket of the block or bar. The stem is provided at 85

its outer end with a head, and it is adapted to be drawn outward to withdraw the block or bar from the recess of the sleeve. When the block or bar is withdrawn into the recess of the hub, the latter is adapted to be moved 90

longitudinally and may be readily withdrawn from the axle. The hub is also adapted to be readily replaced, and it is unnecessary to remove the same except for repairs. The axle

is provided with a longitudinal oil-passage 95 arranged at an inclination, and this passage 15, which consists of a bore or opening, extends from a point beyond the inner collar or band at the top of the axle to the bottom of the same at the center of the spindle. An 100 oil-cup 16 is mounted on the axle and is provided with a suitable valve for controlling

the flow of the oil. By this construction the axle may be continuously lubricated or it may be lubricated as desired.

It will be seen that the device is exceedingly simple and inexpensive in construction, that it is adapted to increase the strength and durability of wheels and axles, and that it affords a dust-proof bearing. It will also be apparent that it dispenses with nuts and washers and enables the wheel to be lubricated without removing it from the axle and that while the wheel may be readily removed it need only be removed for repairs.

The hub may be constructed of wood, metal, or any other suitable material, and when constructed of wood its interior will be provided with a suitable metallic lining to receive the rib or flange 7 and the block or bar 9, and I desire it to be understood that these and various other changes within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

1. In a device of the class described, the combination of a spindle, a sleeve forming an axle-box and permanently mounted on the spindle, and a hub detachably interlocked with the sleeve at a point between the ends of the spindle and receiving the sleeve and adapted to be removed without detaching the sleeve, substantially as described.

2. In a device of the class described, the combination of a spindle provided at its ends with suitable stops fixed to it, a sleeve located between the stops and arranged on and extending longitudinally of the spindle and forming an axle-box, said sleeve being adapted to rotate on the spindle, and a hub detachably interlocked with the sleeve and adapted to be removed without detaching the sleeve, substantially as described.

3. In a device of the class described, the combination of a spindle provided at its ends with collars or bands, a sleeve extending longitudinally of and arranged to rotate on the spindle and located between and abutting against the collars or bands, and a hub de-

tachably interlocked with the sleeve and receiving the same and adapted to be removed without detaching the sleeve from the spindle, substantially as described.

4. In a device of the class described, the combination of a spindle, a sleeve forming an axle-box and permanently mounted on the spindle and adapted to rotate, said sleeve being provided with a recess, a hub receiving the sleeve, and a locking device mounted on the hub at a point between the ends of the spindle and engaging the recess of the sleeve and permitting the hub to be removed without detaching the sleeve from the spindle, substantially as described.

5. In a device of the class described, the combination of a spindle, a sleeve extending longitudinally of the spindle and capable of rotation and forming an axle-box, said sleeve being provided at one side with a longitudinal key or enlargement, a hub having a groove receiving the key or enlargement of the sleeve, and a locking device mounted on the hub and engaging the sleeve and permitting the hub to be removed without detaching the sleeve from the spindle, substantially as described.

6. In a device of the class described, the combination of a spindle, a sleeve permanently mounted thereon and forming an axle-box and provided at one side with a key or enlargement and having a recess at the opposite side, a hub provided with a groove to receive the key and having a recess at the opposite side, said hub being closed at the outer end, a block or bar mounted in the recess of the hub and adapted to engage the recess of the sleeve, a stem connected with the block or bar and extending through the hub, and a spring arranged within the recess of the hub and engaging the block or bar, substantially as described.

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

CHAS. DAVID HEVENOR.

Witnesses:

W. H. HAZARD,
F. A. RHODES.