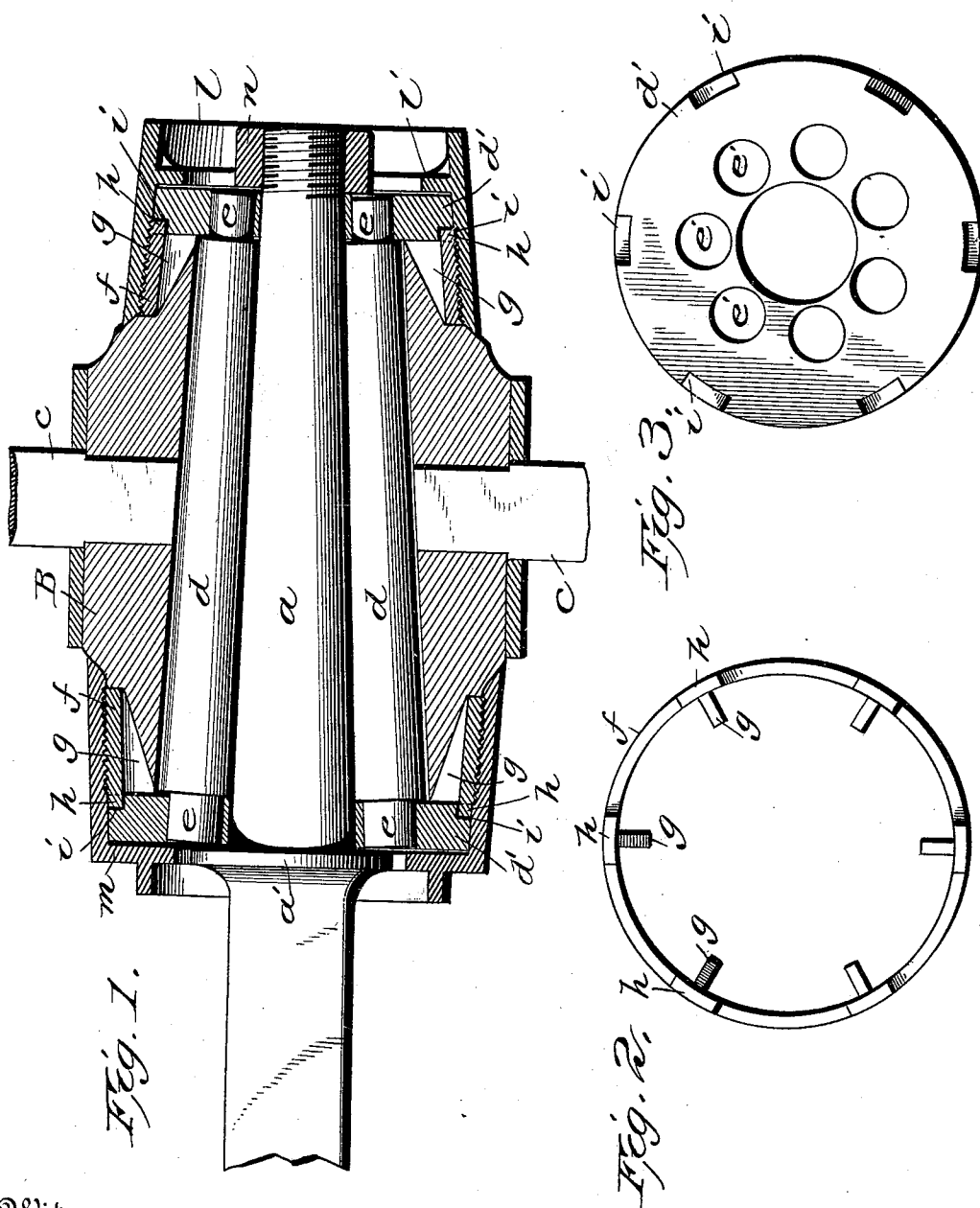


(No Model.)

T. C. VAN WYCK.  
AXLE BOX.

No. 520,907.

Patented June 5, 1894.



Witnesses  
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# UNITED STATES PATENT OFFICE.

TIMOTHY C. VAN WYCK, OF BROOKLYN, NEW YORK.

## AXLE-BOX.

SPECIFICATION forming part of Letters Patent No. 520,907, dated June 5, 1894.

Application filed September 15, 1893. Serial No. 485,594. (No model.)

*To all whom it may concern:*

Be it known that I, TIMOTHY C. VAN WYCK, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Axle-Boxes; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has particular reference to those axle boxes wherein a series of friction rollers are arranged to embrace the axle and form a bearing therefor; and the improvement is particularly adapted for use in connection with the wheels of carriages, wagons, &c., although it could obviously be used with all vehicles.

The object of my invention is to produce an axle box which will be more durable and inexpensive and which may be permanently secured to the hub of the wheel, thereby making the bearing a part of the wheel and allowing them both to be jointly removed from the axle.

Referring to the accompanying drawings for a detailed description of the invention: Figure 1 represents a longitudinal section thereof; Fig. 2, a perspective view of a detail; and Fig. 3, a side elevation of one of the plates for holding the rollers in place.

The reference letter *a* indicates the axle of the vehicle to which my invention is applied, and it is provided with the usual shoulder or flange *a'* whereby the wheel is prevented from moving inwardly.

*b* indicates the hub of the wheel and *c* the spokes. The bore of the hub is formed much larger than the size of the axle *a* would require and the space is filled by the anti-friction rollers *d*. These rollers are arranged parallel with each other and longitudinally with the axle, they being held in place by means of the circular bearing plates *d'*. The plates *d'* are two in number and are arranged at each end of the hub, so that the reduced ends *e*, of the rollers *d*, will be in position to fit into the corresponding openings *e'* of the

plates. By this means the rollers are securely held in place and allowed a free rotary movement, which is occasioned by the revolution of the wheel around the axle.

Means are provided whereby the plates *d'* are prevented from turning independently of the hub and these consist of the annular bands *f*, secured one at each end of the hub, and directly inside of the plates *d'*. These bands are each provided with the inwardly extending radial arms or studs *g*, which fit into corresponding recesses in the body of the hubs, the arms being shaped triangular by preference, though this may be varied at will. Formed on the outer edge of the bands *f*, and at points equi-distant from each other, are the laterally projecting lugs or studs *h*, which are adapted to fit into the corresponding recesses *i* in the periphery of the plates *d'*. By this construction it will be apparent that owing to the rigidity of the bands *f*, occasioned by the arms *g*, the plates *d'* will be incapable of movement independent of the wheel, because of its rigid connection with the bands *f*. The plates *d'* are prevented from displacement on a line parallel with the axle by means of the caps *l* and *m*, adapted to fit over the outer and inner ends respectively of the hub. The construction of these caps is varied slightly to adapt them to the difference in their position. Thus the cap *l* is simply an internally threaded band or sleeve adapted to be screwed over the outer band *f*, which band is threaded to admit such an operation, and the cap *l* is provided near its outer end with an integral flange *l'* extending inwardly therefrom and adapted to engage the outer side of the plate *d'* thereby confining it in place. The cap *m* is similar to the cap *l*, with the exception of the flange for retaining the plate *d'*. This flange in the cap *m* is practically a bend in the outer end of the sleeve and it projects inwardly from the main portion of the sleeve so as to bind against the outer side of the plate and confine it in place.

From the above description it will be seen that an effective roller bearing is provided and that owing to its peculiar construction the wheel and rollers may be removed from the axle as a unit, thereby making the device durable and easy to manipulate. The wheel is secured in place by means of the nut

n which may be of any preferred construction.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A roller bearing for axles comprising the combination of the hub, a series of rollers arranged therein so as to form the bearing for the axle, a plate at each end of the rollers and forming a bearing therefor, a rigid band at each end of the hub, and adjacent to each plate, and each provided with an arm or stud arranged to lock with the plate adjacent thereto, whereby the plates are prevented from revolving independent of the hub, and retaining caps for the plates, and adapted to fit the ends of the hub, substantially as described.

2. A roller bearing for axles comprising the combination of the hub, a series of rollers ar-

ranged therein so as to form a bearing for the axle, a plate at each end of the rollers and forming bearings therefor, a band adjacent to each of the plates and provided with studs or arms projecting inwardly and into the body of the hub, whereby the bands are made rigid on the hub, the bands each having a second stud or arm projecting therefrom and engaging with the plates, thus holding the plates incapable of independent rotary motion, and caps for retaining the plates and adapted to fit over the hub, substantially as described.

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

TIMOTHY C. VAN WYCK.

Witnesses:

WILLIAM H. PEARSON,  
A. W. BLAZO.