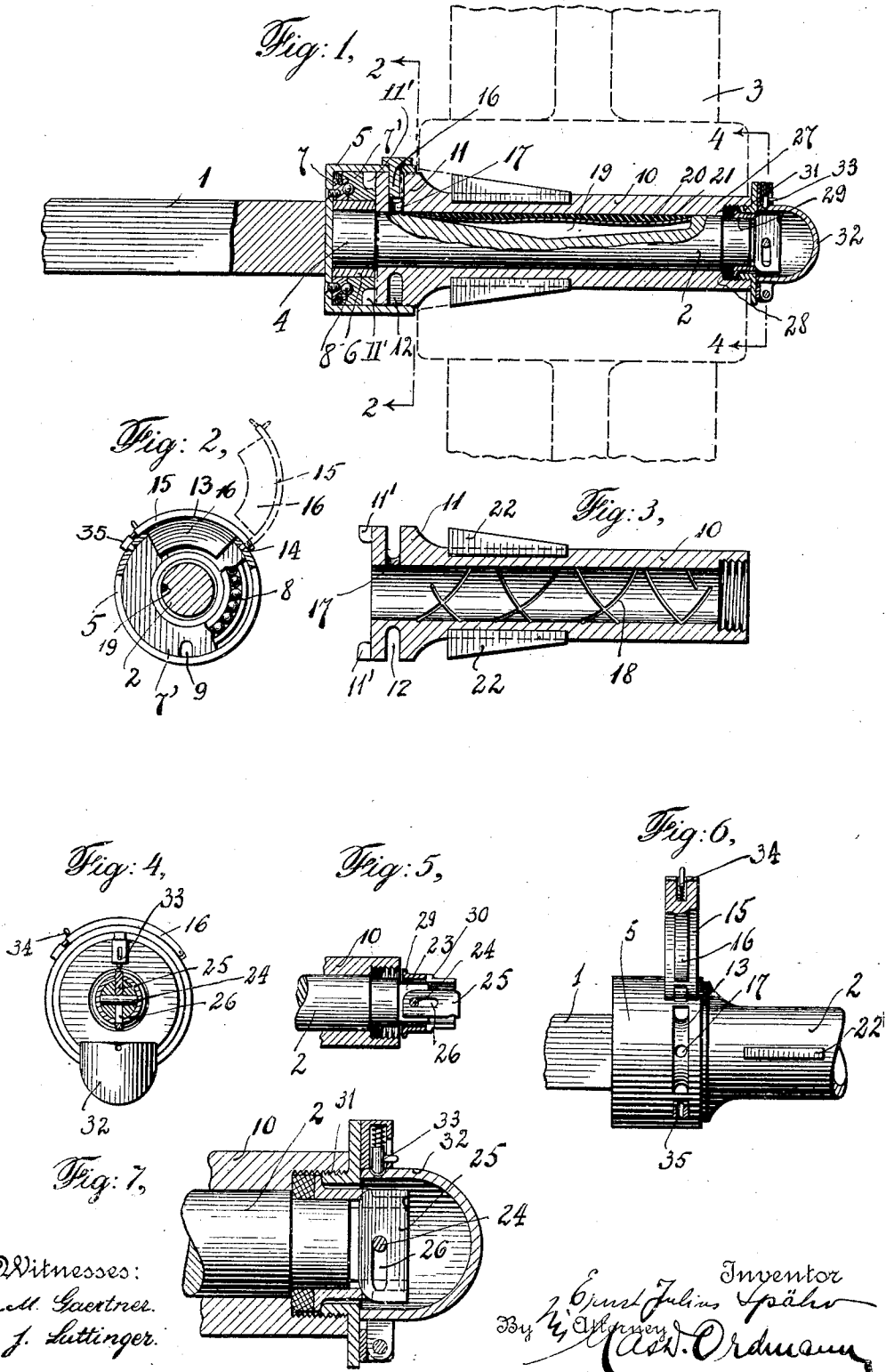


E. J. SPÄHR.
 MEANS FOR ATTACHING AXLE BOXES.
 APPLICATION FILED NOV. 2, 1908.

941,822.

Patented Nov. 30, 1909.



UNITED STATES PATENT OFFICE.

ERNST JULIUS SPÄHR, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO OTTO SEMLER
AND EMIL BOHRMANN, OF NEW YORK, N. Y.

MEANS FOR ATTACHING AXLE-BOXES.

941,822.

Specification of Letters Patent.

Patented Nov. 30, 1909.

Application filed November 2, 1908. Serial No. 460,730.

To all whom it may concern:

Be it known that I, ERNST JULIUS SPÄHR, a subject of the Emperor of Germany, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Means for Attaching Axle-Boxes, of which the following is a specification.

The present invention relates to axle boxes and particularly to means for attaching said axle boxes to the journal of an axle.

The object of my invention is to provide a construction that will allow of the axle box being securely attached to the journal of an axle and capable of being readily removed therefrom.

In order to make my invention clear the same is illustrated in the accompanying drawing in which similar reference characters denote corresponding parts and in which—

Figure 1 is a longitudinal section of the axle box as attached to the journal of the axle; Fig. 2 is a cross section on line 2—2 of Fig. 1; Fig. 3 is a longitudinal section of the axle box removed from the journal; Fig. 4 is a cross section on line 4—4 of Fig. 1; Fig. 5 shows the free end of the journal with the safety lock thereon; Fig. 6 shows a plan view of the inner end of the journal carrying the lubricating chamber, and Fig. 7 shows a longitudinal section of the outer end of the axle box and of the journal in enlarged scale.

In the drawing, 1 is the axle of a carriage, motor or railroad car and 2 the journal part thereof adapted to carry the wheel 3 marked by dotted lines (Fig. 1). Rigidly mounted on the axle 1 and surrounding the enlarged inner end 4 of the journal 2 is a cylindrical cup or box 5 which is open at one side and which serves as a lubricating chamber.

Stationarily secured upon the inner end 4 of the journal is a bushing 6, upon which are loosely mounted disks 7, 7' containing a ball bearing 8 between themselves. The inner disk 7 is rigidly secured to the inner wall of the box 5, while the outer disk 7' is capable of revolving and is suitably guided to constantly remain in contact with the ball bearing 8. The latter disk 7' is provided on its face surface with notches 9. The cup is extended laterally beyond the disk 7' and adapted to receive the inner end of the axle

box which consists of a sleeve 10, the inner end 11 of which is enlarged to closely fit in the cup 5. This enlarged end 11 is provided with an annular groove 12 and at its rear surface with noses 11', 11' (Fig. 3) which are adapted to engage the notches 9 in the inner rotary disk 7' of the ball bearing.

The box 5 is provided on its circumference with an opening 13 and has hinged to it at 14 a lid 15 for the said opening. Projecting from said lid is a catch 16 that upon the closure of the former will engage the annular groove 12 of the axle box and secure the latter upon the journal.

In the bottom of the annular groove perforations 17 are provided, through which the lubricating medium will be allowed to pass to the bearing surfaces of the axle box and axle. To facilitate the uniform distribution of the lubricating medium the bearing surface of the axle box has channels or grooves 18 and the axle a longitudinal groove 19, in which a plate spring 20 and a strip 21 of rubber are contained. The spring and rubber will during the revolution of the axle box cause the lubricating medium accumulated in the groove 19 to be pressed outward to come between the bearing surfaces.

The axle box is provided with wedge-shaped keys 22 for keying the hub of the wheel 3 to the axle box.

In addition to the above-named lock formed by the catch 16 and groove 12 another safety lock is provided in the end of the journal 2. The reduced portion of the outer end of the journal is provided with a central longitudinal slot 23 and a cross pin 24. A bar 25 provided with a longitudinal recess 26 is slidably and rotatively engaged around said pin in such a manner that when in operation the bar, upon being turned crosswise to the axis of the journal, will lock the axle box upon the journal and prevent its removal when the catch 16 by the lifting of the lid 15 is disengaged from the annular groove 12 of the axle box. To this end the outer end of the axle box is formed inside with a shoulder 27 and is adapted to receive a washer 28 fitting around the reduced end of the journal. The bushing 29 is provided with longitudinal recesses that, when in proper position, register with the slot 23 in the journal. It will be seen that in the position shown in Fig. 7 the

locking bar 25 extending crosswise to the axis of the journal will project through the recesses 23 and 30 of the journal and the bushing, and thereby lock the axle box upon the journal. Removably secured in the open end of the box and inclosing the lock in the free end of the journal is a cup which consists of a cylindrical portion 31 adapted to screw into the axle box, and a cup-shaped lid 32 hinged thereto and to be locked by a spring lock 33. Access to the safety lock 25 can be had by merely swinging open the lid 32.

The lid 15 may be provided with a spring catch 34 to engage an eye 35 on the cup 5 so as to lock the lid in closed position.

What I claim and desire to secure by Letters Patent is:

The combination with an axle, of a cup secured thereto and provided with an open-

ing in one of its walls, a bearing member rotatively secured in said cup and formed with spaced recesses, an axle box rotatively mounted on said axle and provided with an annular groove near its inner end and extending into said cup, projections on said axle box adapted to project into the spaced recesses to couple the bearing member and the axle box together, and a hinged locking member having a portion arranged to project through the opening of the cup into the annular recess of the axle box to prevent axial movement of the latter.

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

ERNST JULIUS SPÄHR.

Witnesses:

OTTO SEMLER,
EMIL BOHRMANN.