(No Model.) 2 Sheets—Sheet 1.

P. KENNEDY.

BEARING SLEEVE FOR CAR AXLES.

No. 594,746. Patented Nov. 30, 1897.

FIG: 1.

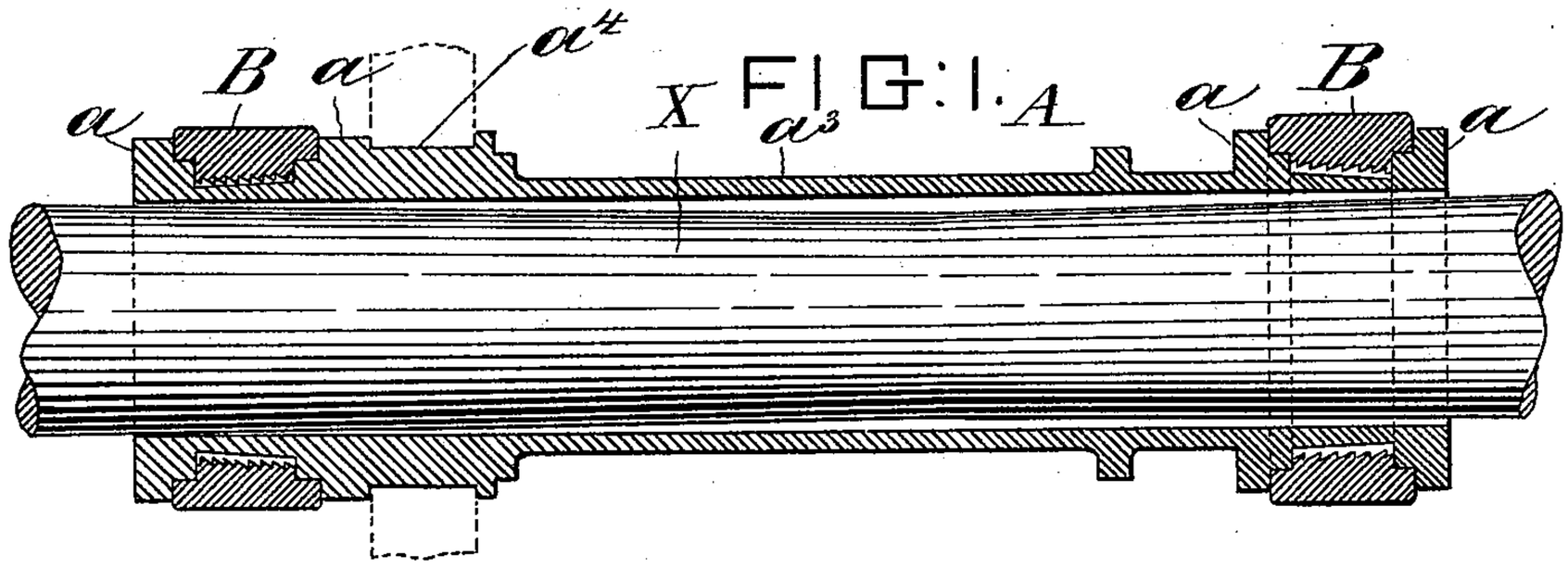


FIG: 2.

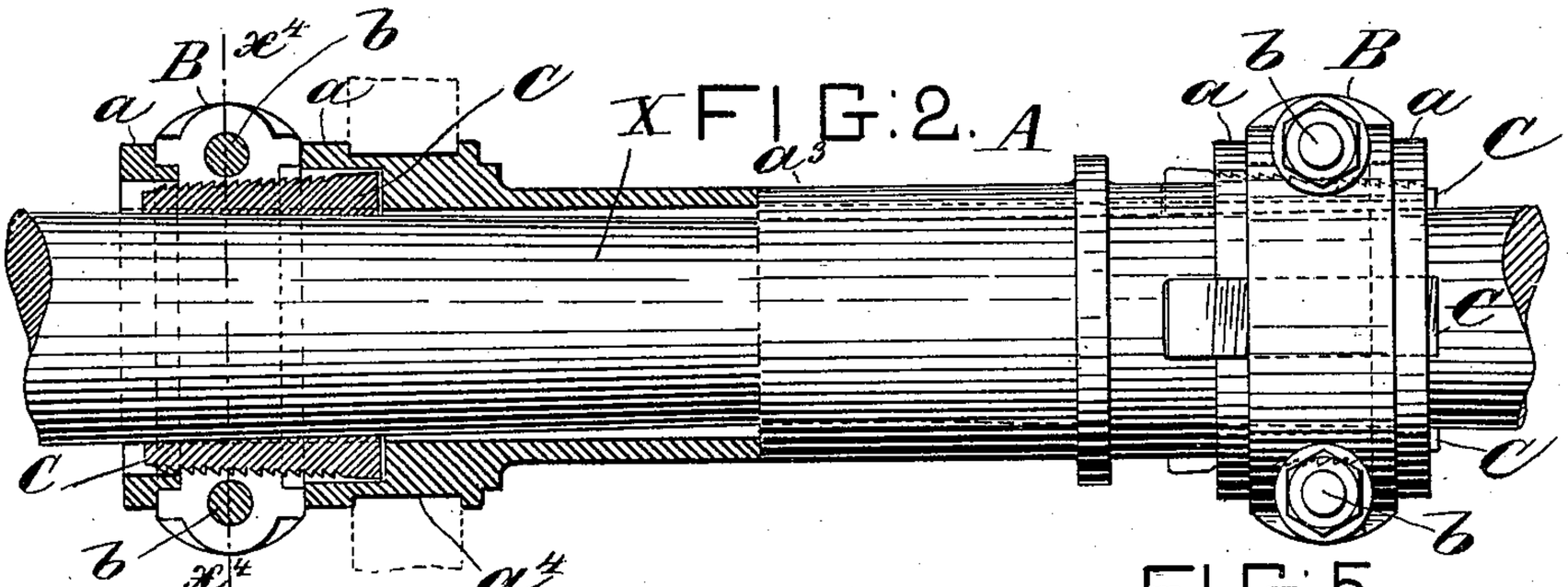


FIG: 3.

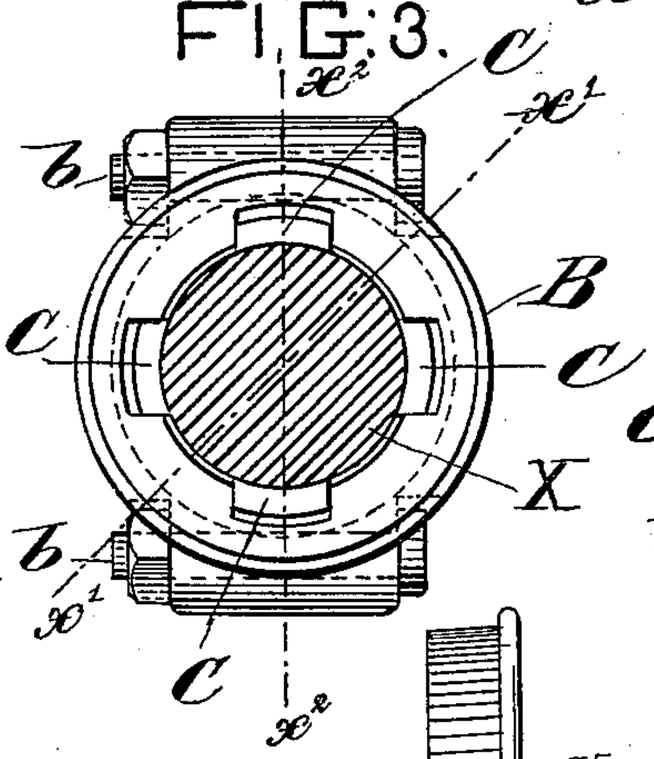


FIG: 4.

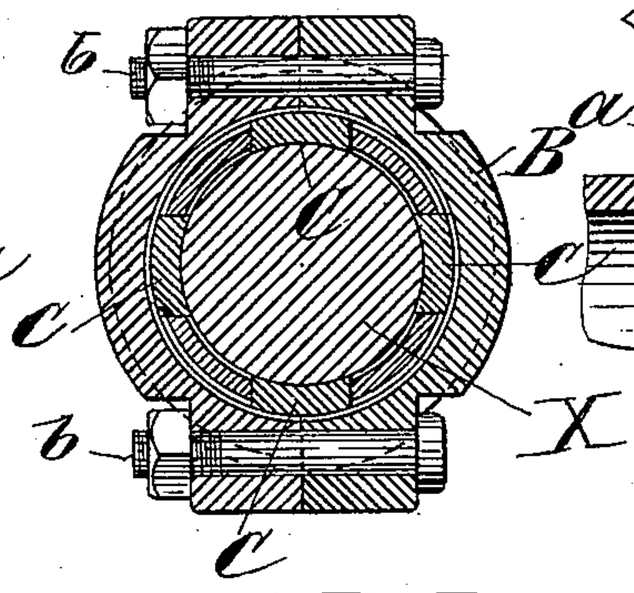


FIG: 5.

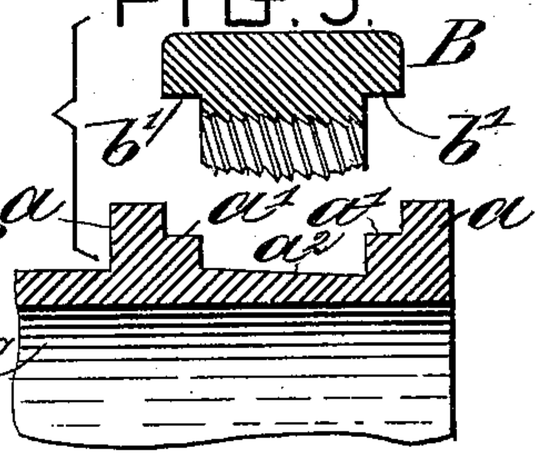
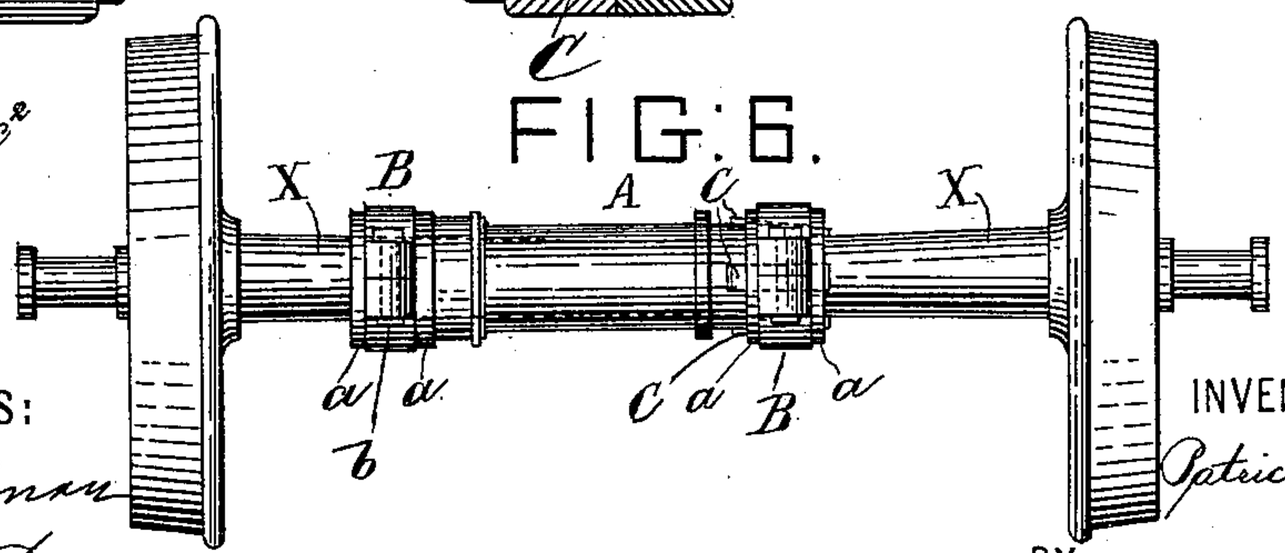


FIG: 6.



WITNESSES:

F. H. Hyman

Peter A. Rosa

INVENTOR

Patrick Kennedy

BY

Henry Connett

ATTORNEY

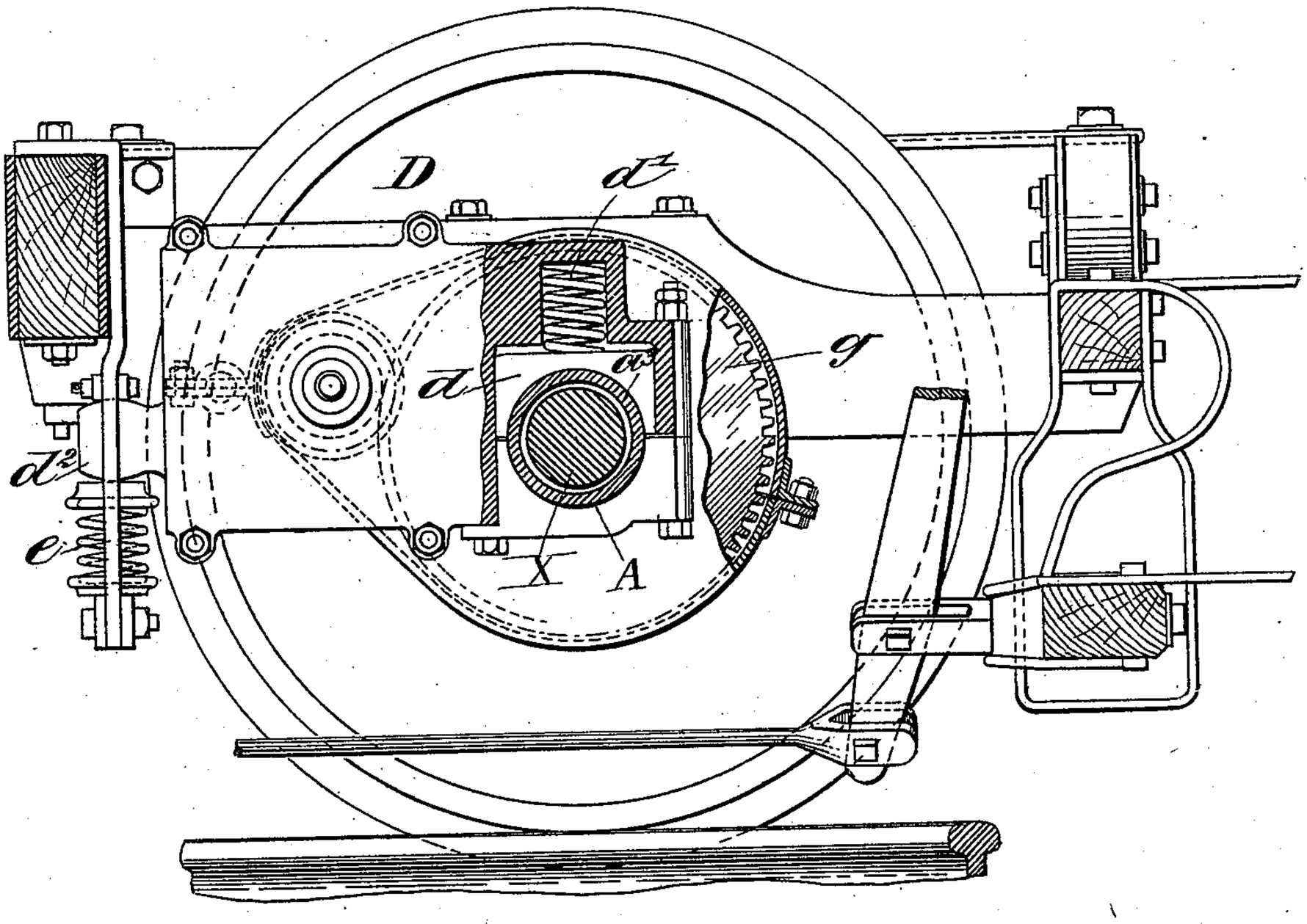
(No Model.) 2 Sheets—Sheet 2.

P. KENNEDY.

BEARING SLEEVE FOR CAR AXLES.

No. 594,746. Patented Nov. 30, 1897.

FIG: 7.



WITNESSES:

L. W. Kinnan

Peter A. Ross

INVENTOR

Patrick Kennedy

BY

Henry Connett

ATTORNEY

UNITED STATES PATENT OFFICE.

PATRICK KENNEDY, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE AMERICAN RAILWAY ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

BEARING-SLEEVE FOR CAR-AXLES.

SPECIFICATION forming part of Letters Patent No. 594,746, dated November 30, 1897.

Application filed April 26, 1897. Serial No. 633,873. (No model.)

To all whom it may concern:

Be it known that I, PATRICK KENNEDY, 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 Bearing-Sleeves for Car-Axles, of which the following is a specification.

This invention relates to the class of sectional bearing-sleeves for car-axles such as are commonly employed at the present time for supporting dynamos situated under cars and driven from the axles thereof.

It is a well-known fact that car-axles are made to taper from each wheel thereon to a point at or near the middle of the axle and that they are frequently, if not invariably, more or less irregular in their taper and contour. Moreover, those in control of railways object to having the axles of the cars dressed or cut in any way to fit them to receive and form supports for gearing and electrical apparatus. Hence when a car is to be fitted up with a generator to be driven from the axle it is desirable to provide bearings which may be fitted to the car-axle at any point in its length without cutting or dressing the axle; and this invention provides a simple bearing-sleeve adapted to such requirements.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a longitudinal axial section of the sleeve, taken in substantially the plane indicated by line x' in Fig. 3. Fig. 2 is in part an elevation of the sleeve and in part a longitudinal axial section thereof, taken along the point between the sleeve-sections, as indicated by line x^2 in Fig. 3. Fig. 3 is an end view showing the axle in cross-section. Fig. 4 is a transverse section of the sleeve and axle on line x^4 in Fig. 2. Fig. 5 shows fragmentary sectional views of the screw-ring and sleeve, and Fig. 6 is a view on a smaller scale, showing the sleeve mounted on a car-axle. Fig. 7 is a sectional elevation showing the application of the bearing-sleeve in practice, forming a support for a dynamo.

Let X represent the axle of a car on which is mounted the sectional body A of the bearing-sleeve embodying the present invention. This body is composed of two like sections or halves separated by a longitudinal division. The body A is cylindrical and hollow, forming a tube which is somewhat larger, interiorly, than the axle X, so as to fit rather loosely about the same. At each of its ends the sectional body A has formed on it a pair of collars $a\,a$, which form collar-bearings to receive between them a sectional screw-ring B. This ring, like the body of the bearing, is composed of two like semicircular halves provided with flanges and secured, when in place, by screws or bolts b, which pass through the said flanges.

It will be noted, especially by reference to Fig. 5, that the ring B is rabbeted or cut back on each face to form bearing-surfaces b', which when the ring is in place find bearings on circumferential seats a', formed by rabbets in the collars a. The object of this will appear when it is also noted that the ring B is turned or bored out tapering and has internal screw-threads. As the surfaces b' supply a bearing for the ring the screw-threads are held out of contact with the surface of the body A at a^2, Fig. 5, between the collars a. The clearance between the screw-threads on the ring B and the sleeve is seen in Fig. 1.

When the sleeve is in place on the axle, the rings B are in place on the body and the bolts b tightened up. The screw-threads in the ring engage corresponding screw-threads on the backs of a series of tapered jaws C, which occupy guide slits or ways formed in the end of the sleeve. There should be at least three of these jaws C, equally spaced, at each end of the sleeve, but there may be more, and as the body A is in halves four jaws, as herein shown, are preferred, situated with reference to the longitudinal line of division of the body, as clearly shown in Figs. 2, 3, and 4.

The jaws C are tapered on their inner faces to fit the taper of the axle X, so as to bear on it evenly, and tapered exteriorly to correspond with the taper of the inner face of the ring B. These jaws may be formed by turning up a tubular piece of metal of the proper length, cutting a screw-thread on its outer face, and then slitting it longitudinally into pieces of the proper width.

In assembling the parts and fitting them to the axle X the sections of the body A are first placed so as to embrace the axle, with

the jaws C in place in their respective slits or guideways, the sections of the rings B then placed with the screw-threads therein properly engaging the screw-threads on the jaws, and the bolts *b* inserted and screwed up moderately tight. The collared rings B are now rotated in the proper direction to drive the jaws C outward over the surface of the axle. The effect of this is to cause the jaws to clamp forcibly upon the axle and center of the body of the bearing-sleeve with respect to the axle. The nuts on the bolts *b* may now be set up forcibly to clamp all the parts fast.

On the body A bearings may be formed to suit the purposes for which the sleeve is intended—for example, a long bearing a^3 to support the frame of a dynamo and a bearing a^4 to receive a split gear-wheel. (Indicated by dotted lines in Figs. 1 and 2.) In Fig. 7 a dynamo is shown mounted on the axle. In this view D represents the dynamo as a whole. Its frame embraces the bearing a^3 and has a cap *d*, which rests on the bearing, and a spring *d'*, interposed between the frame and said cap. The other end of the frame has a lug d^2, which is supported in a stirrup *e* on the truck-frame of the car and has a cushioned bearing in the stirrup. The armature of the dynamo is driven from a gear-wheel *g*, mounted on the bearing a^4 of the sleeve.

It is not essential to the invention that the screw-threaded interior of the ring B shall be tapered and the outer screw-threaded faces of the jaws C be tapered to fit the ring, although this construction is preferred. The bevel of the inner faces of the jaws to fit the taper of the axle will usually suffice to make all tight.

While the sleeve-bearing described is especially adapted for use on car-axles, it may, of course, be employed on other similar rotating parts as well for accomplishing the same end. There is no special object in dividing the sleeve and ring into more than two sections, but it will be obvious that they can be in two or more sections.

Having thus described my invention, I claim—

1. A bearing-sleeve for a car-axle or the like, comprising a longitudinally-divided tubular body, having near each end a collar-bearing for a sectional screw-ring and at each end longitudinally-extending guideways to receive tapered jaws, the said screw-rings rotatively mounted in said collar-bearings, and the said jaws, mounted in said guideways and embraced by said rings, said jaws having screw-threads on their outer faces which engage the threads of internal screws in the rings, whereby the rotation of the screw-rings serves to drive the tapered jaws longitudinally of the bearing-sleeve.

2. The combination with a car-axle which tapers, of a bearing-sleeve therefor, said sleeve comprising a tubular body A, divided longitudinally and having three or more slits or guideways in each end, said guideways extending longitudinally of the tubular body, tapered jaws C, which occupy the respective guideways in the body, screw-rings B, which embrace and rotate about the said tube and jaws, and have internal screw-threads which fit and engage similar screw-threads on the backs or outer faces of the jaws, and means for preventing the movement of the said rings longitudinally of the body A.

3. In a bearing-sleeve, the combination with the longitudinally-divided body A, having slits or guideways in its respective ends to receive the jaws C, and collars *a*, in pairs near its ends, of the said jaws, having screw-threads on their backs or outer faces, and the sectional screw-rings B, mounted on said body A between the respective collars *a*, said collars having raised bearing-surfaces *a'*, and said rings having bearing-surfaces *b'* to bear on the surfaces *a'*, and having each an internal screw to fit and engage the screw-threads on the jaws.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

PATRICK KENNEDY.

Witnesses:
PETER A. ROSS,
HENRY CONNETT.