No. 846,908. PATENTED MAR. 12, 1907.

T. COOPER.

ROLLER BEARING.

APPLICATION FILED MAY 1, 1906.

Fig. 2

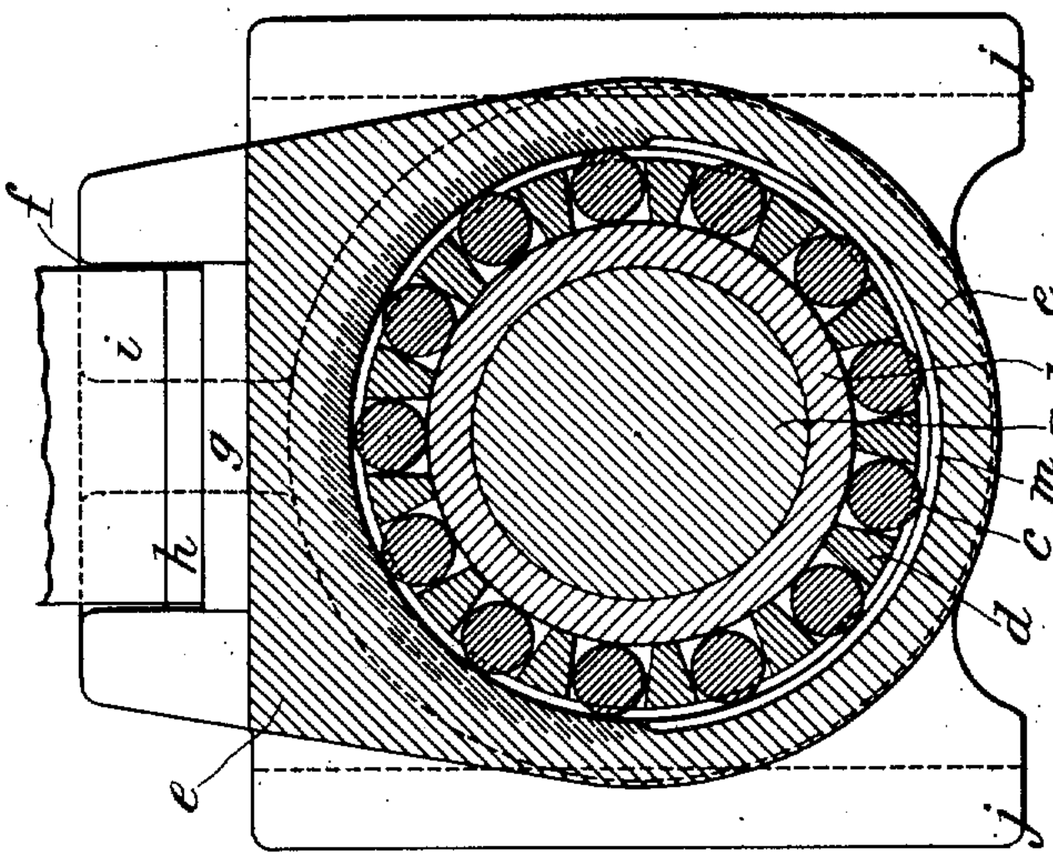
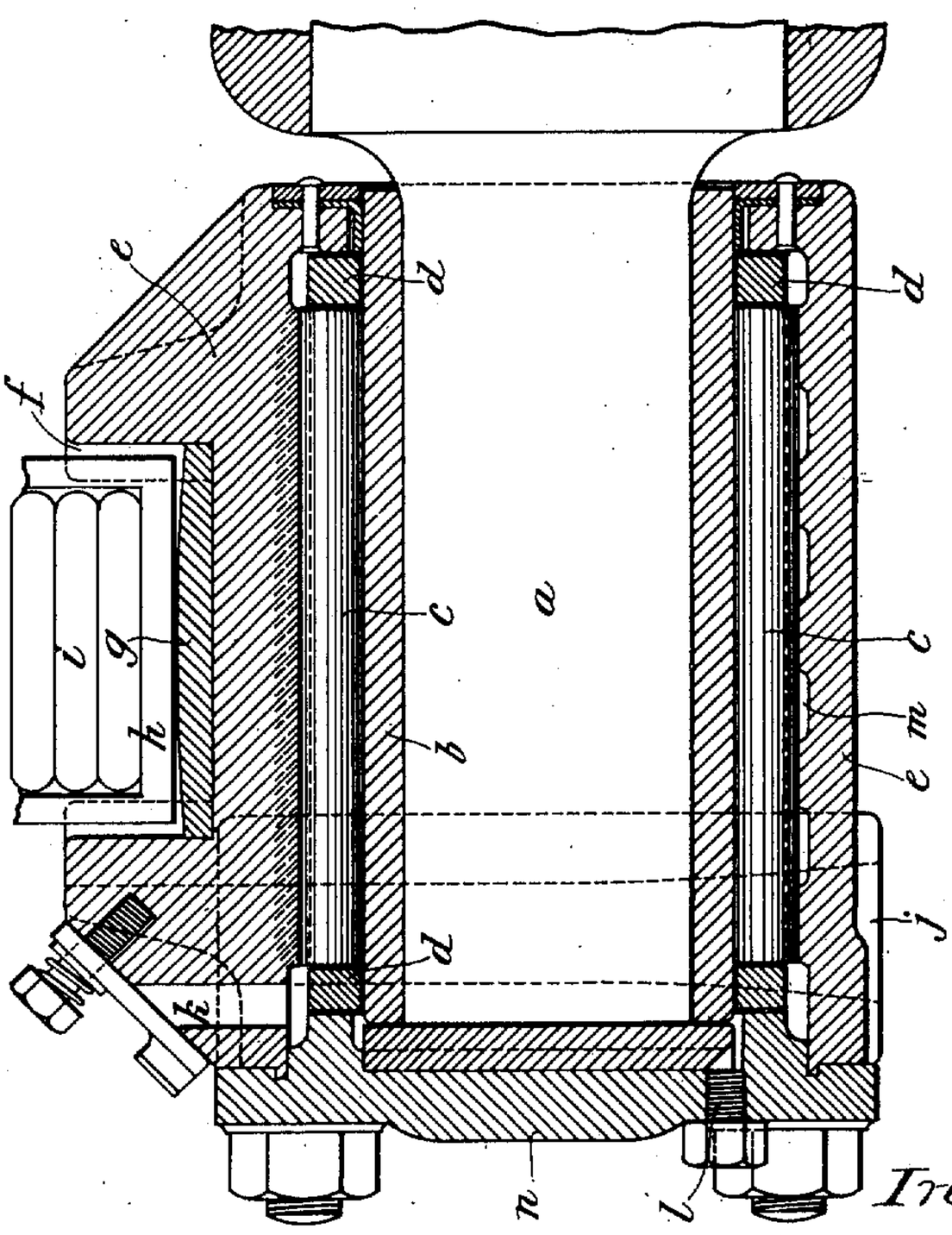


Fig. 1



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UNITED STATES PATENT OFFICE.

THOMAS COOPER, OF KINGS LYNN, ENGLAND.

ROLLER-BEARING.

No. 846,908. Specification of Letters Patent. Patented March 12, 1907.

Application filed May 1, 1906. Serial No. 314,616.

To all whom it may concern:

Be it known that I, THOMAS COOPER, engineer, a subject of the King of Great Britain, and a resident of The Elms, Kings Lynn, in the county of Norfolk, England, have invented new and useful Improvements Relating to Roller-Bearings, of which the following is a specification.

The object of the present invention is to improve, with the view to economy, the construction and arrangement of roller-bearings for railway and other heavy vehicles. In such bearings there is a tendency for the rollers to wear unevenly unless provision is made for assuring their rotation against a sufficiently-hard surface on a practically horizontal axis. This is effected according to a British Patent granted to me, No. 14,820, July 20, 1901, by incasing the rollers and their cage in a properly-tempered sleeve, which is formed externally with regard to its inclosing box in such a manner that there is a rocking or swiveling action between the two, so that the oscillations of the body of the vehicle are neutralized in the bearing and do not reach the rollers in sufficient force to turn or press the latter out of their proper even contact with the axle. The construction of the sleeve and the case-hardening of the wearing parts to make them sufficiently durable to withstand the stress put upon them cannot be done inexpensively.

My object now is to make a cheaper construction of bearing without the sacrifice of efficiency.

According to the present invention I effect this end as follows: To obtain freedom for oscillation, I interpose between the outside of the axle-box, which supports the load, and the spring or other part of the vehicle which rests thereon, a curved or arched seating formed separate from the box or in one therewith, if preferred. The box itself I make of cast-iron chilled at the crown inside where the greatest weight is upon the rollers.

In the accompanying drawing I have shown a construction of roller-bearing embodying my improvements, Figures 1 and 2 being longitudinal and cross-sections, respectively.

a is the axle, preferably incased in a hard ground-steel sleeve *b*.

c are the rollers mounted in a cage *d*, inclosing the casing forming the journal and sleeve.

e is the axle-box, made of cast-iron partly chilled internally to give a hardened wearing-surface for the rollers where the pressure of the weight of the vehicle mostly greatly falls. The hardened portion of the axle-box is indicated by shading in the drawing.

In the socket *f* on the top of the box *e* is a plate *g*, having an arched upper surface in the direction of the length of the axle. Located in the socket is a spring-holder, the bottom of which is flat, said bottom resting upon the arched or convex upper surface of the plate *g*, this spring-holder carrying the vehicle-spring *i*. The construction is such that a rocking movement is permitted between the bottom of the spring-holder and the plate *g* laterally, and the oscillations of the vehicle-body are therefore not transmitted to the rollers. The sides of the casting *e* are recessed at *j* to fit the ordinary horn plates.

k is an oiling-hole provided with a cover, and *l* is an oil-outlet near the lower part of the bearing.

m are circumferential oil-channels in the bottom of the casting *e*. The outer end of the box *e* is closed by a plate *n*, fixed by bolts and nuts.

What I claim, and desire to secure by Letters Patent of the United States, is—

A journal-box comprising a casing a portion of which is chilled interiorly, a cage provided with a series of rollers in the casing, said casing having in its top a socket, a plate having a convex upper surface in said socket, and a spring-holder having a flat base coacting with the convex surface of the plate, whereby the oscillations of the vehicle-body are not transmitted to the rollers.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS COOPER.

Witnesses:

H. D. JAMESON,

ALFRED V. BISHOP.