

No. 780,211.

PATENTED JAN. 17, 1905.

A. C. MASSEY.
AXLE FOR RAILWAY OR OTHER VEHICLES.
APPLICATION FILED SEPT. 2, 1902.

Fig: 1

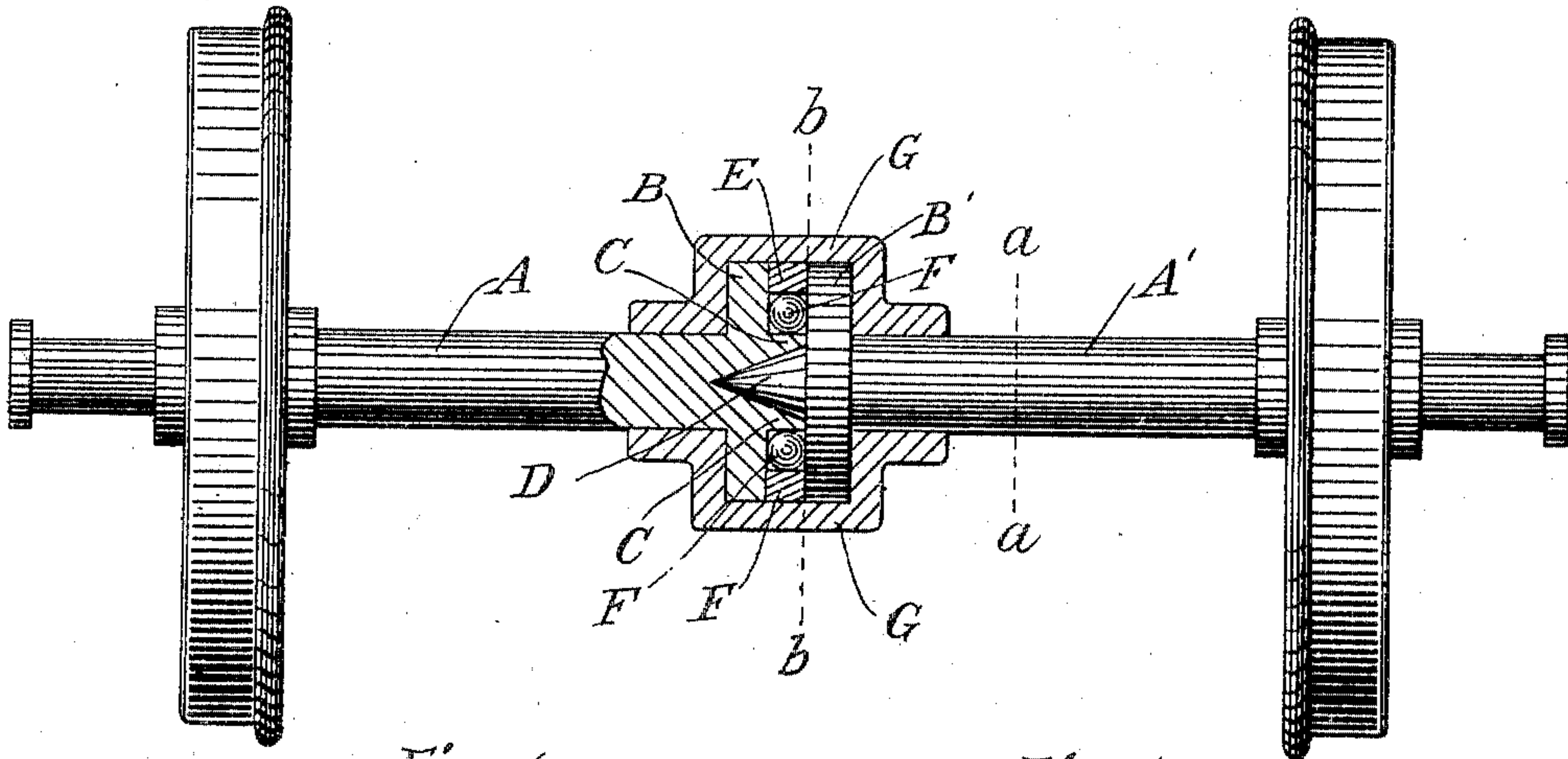


Fig: 4

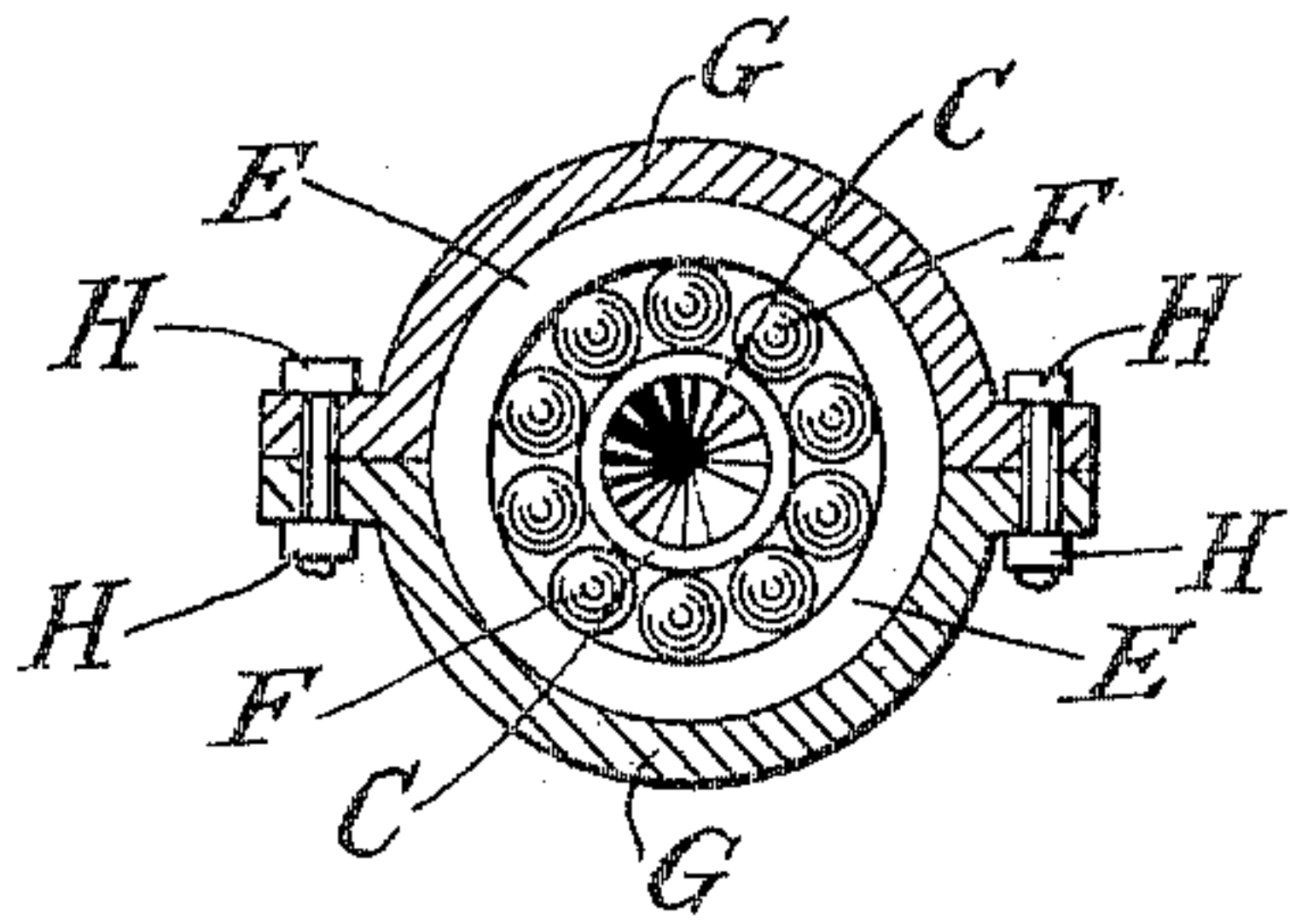


Fig: 3

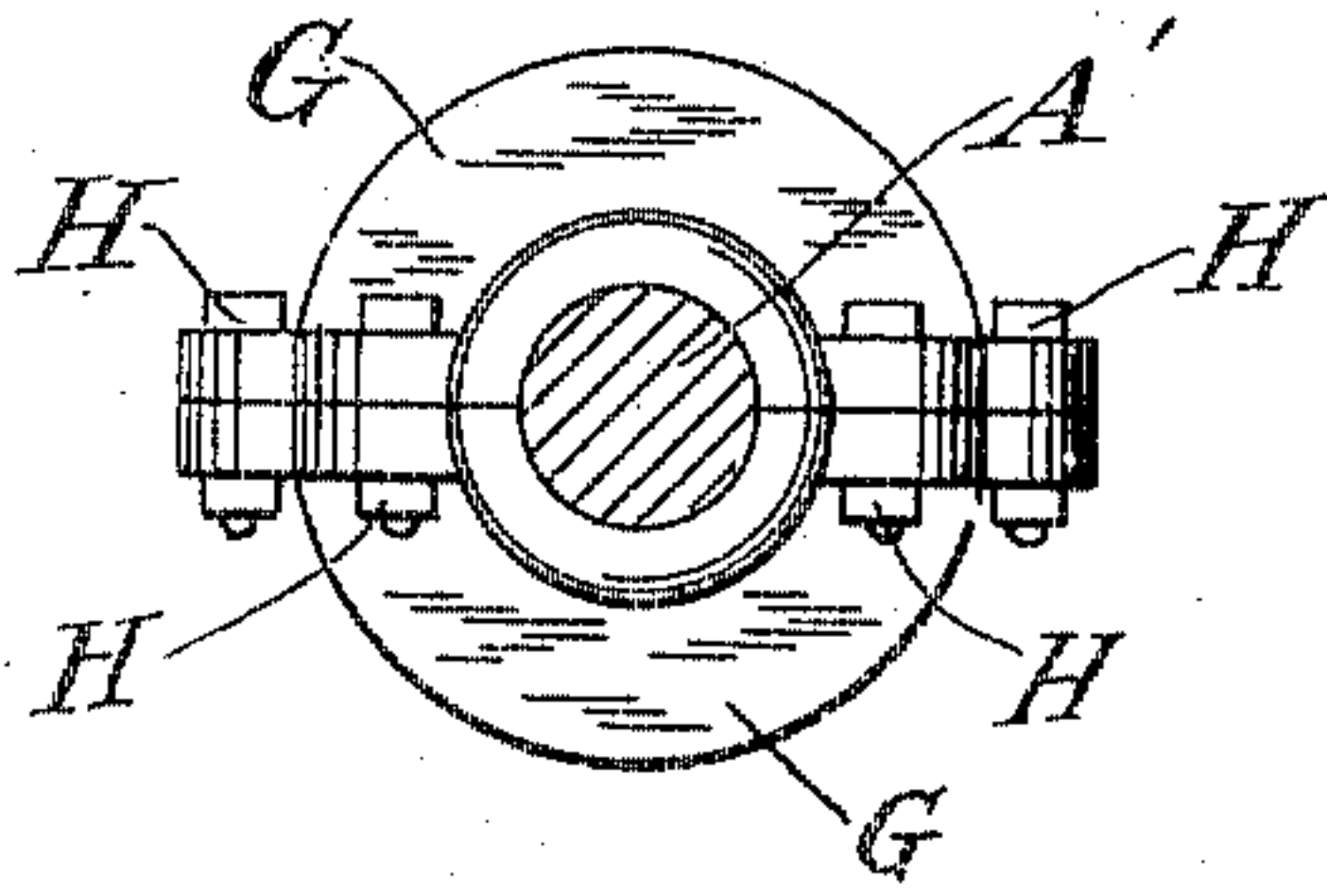
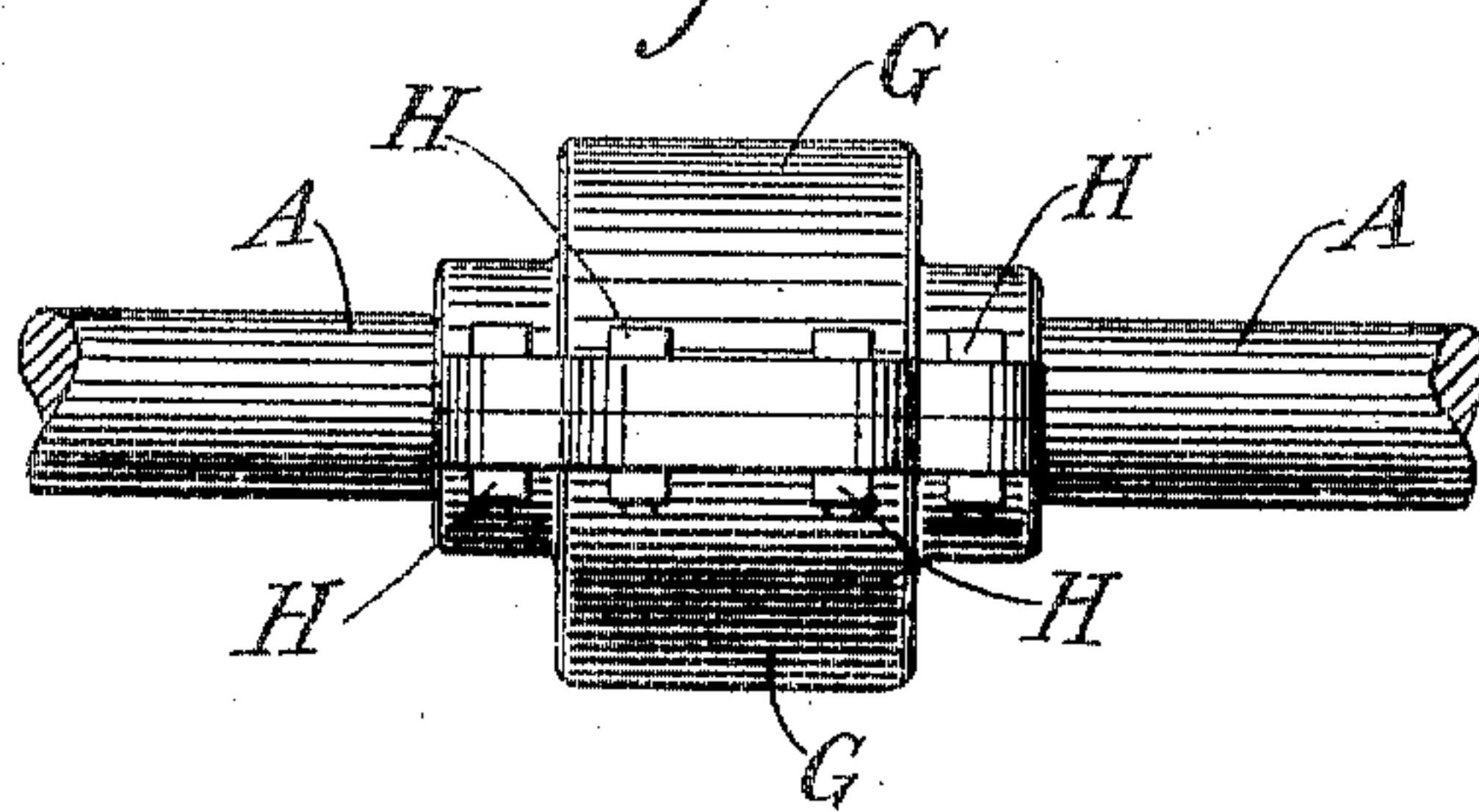


Fig: 2



Witnesses:
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UNITED STATES PATENT OFFICE.

AUGUSTUS CASNOR MASSEY, OF LOS ANGELES, CALIFORNIA.

AXLE FOR RAILWAY OR OTHER VEHICLES.

SPECIFICATION forming part of Letters Patent No. 780,211, dated January 17, 1905.

Application filed September 2, 1902. Serial No. 122,018.

To all whom it may concern:

Be it known that I, AUGUSTUS CASNOR MASSEY, of No. 132 Stimson Block, in the city of Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Axles for Railway or other Vehicles, of which the following is a full, clear, and exact description or specification, reference being had to the annexed drawings, and to the letters marked thereon.

My invention has for its object to enable the wheels of vehicles used on railways and other roadways to be rolled upon a curved track without straining the axles torsionally, and besides constructing the axle in two portions, one fitting into the other at or about the center of the axle, as set forth in the specifications of my two previous Letters Patent, respectively having the numbers and dates as follows: 662,540, November 27, 1900, and 672,949, April 30, 1901. My invention otherwise consists in constructing each half of the axle at or near the center where the halves meet with a space between two flanges, one flange being on each half of the axle and the space thus formed being of sufficient width and depth to receive between the flanges a loose ring whose outer diameter is equal to the diameter of the flanges and whose interior diameter is larger than the diameter of that portion of the axle, which consists of a cylindrical projection extending from the flange of one half of the axle to the flange of the other half of the axle, so that an annular space is formed between the interior of the loose ring and the cylindrical projection on one-half of the axle. In this annular space antifriction balls or rollers are carried, and the whole of these central parts, including the flanges, the loose ring, and the antifriction-rollers, also the adjacent parts of the axles, are carried within a yoke or box which holds the parts together, the entire construction or arrangement being such that the parts are held together antifrictionally, so that they can yield rotatively on the occurrence of any torsional strain produced by any pair of wheels and axle rolling upon a curved track of which

the rail of one track is longer than the rail of the other track.

On the annexed drawings, Figure 1 is an elevation, partly in section, of a pair of wheels and a railway-car axle constructed in accordance with my present invention. Fig. 2 is an elevation of the central part of the axle, showing the exterior of the yoke or box containing and holding in operative relationship the yielding parts thereof. Fig. 3 is a transverse section on the line *a a*, Fig. 1. Fig. 4 is a transverse section on the line *b b*, Fig. 1.

In the drawings each half of the axle is marked A and A', respectively. On the half of the axle marked A there is formed the flange B, and on the other half of the axle marked A' there is formed the flange B'. Projecting from the center of the flange B is the cylindrical portion marked C, Fig. 1, which extends across the space between the flanges B and B', so that the outer end of the cylindrical portion C bears against the central portion of the flange B', and the central part of the axle A' is formed with a conical nose D, projecting from its flange B' into a corresponding conical recess in the cylindrical part C of that half of the axle marked A. As will be seen by reference to the drawings, an annular space is thus provided between the flanges B B', wherein the loose ring E is placed, and in the annular space thus formed between the interior of the loose ring E and the cylindrical projection C the antifriction balls or rollers F are contained. The whole of the central parts of the axle thus constructed are held together by means of the box or yoke G, which is constructed in two halves, as shown in the drawings, the halves constituting the yoke being held together by bolts and nuts H.

In putting the several parts of this device together they are oiled or greased, so as to allow the same to yield rotatively with a minimum friction on the arising of a torsional strain, and any oiling device may be applied to the yoke for passing oil as a lubricant to the interior parts whenever necessary, such lubricating device, however, forming no part of this invention.

I would have it understood that my invention includes such changes and modifications in the shape of the device and its parts as may fall within the terms and scope of the following claims.

Having now described the nature of my said invention and the best system, mode, or manner I am at present acquainted with for carrying the same into practical effect, I desire to observe in conclusion that what I consider to be novel and original and therefore claim as the invention to be secured to me by Letters Patent, is as follows:

1. The axle-joint wherein each half of the axle is constructed at or near its center with a flange of larger diameter than the axle itself, one half of the axle having a cylindrical nose projecting from its center toward the other half of the axle thus forming a space between the flanges, the other half of the axle having a nose projecting into a recess in the central cylindrical projection of the first-named half-axle, the space between the flanges containing a ring whose external diameter is the same as the external diameter of the flange, and having antifriction balls or rollers in the annular

space formed between the interior of said ring and the cylindrical projection, the whole being contained or held in operative relationship within the box or yoke, substantially as hereinbefore described.

2. The combination of the two half-axles, each half-axle having a flange at or near its inner end, the cylindrical central projection on one half-axle, the ring in the space between the flanges, the antifriction balls or rollers in the annular space formed by the interior of the ring and the exterior of the cylindrical projection, the conical nose and recess on each half-axle, respectively, the box or yoke and bolts for holding or containing the whole of the parts in operative relationship, substantially as hereinbefore described.

In testimony whereof I have hereunto set my hand and seal, this 10th day of July, A. D. 1902, in the presence of two subscribing witnesses.

AUGUSTUS CASNOR MASSEY. [L. s.]

Witnesses:

ST. JOHN DAY,
B. M. WILKINS