

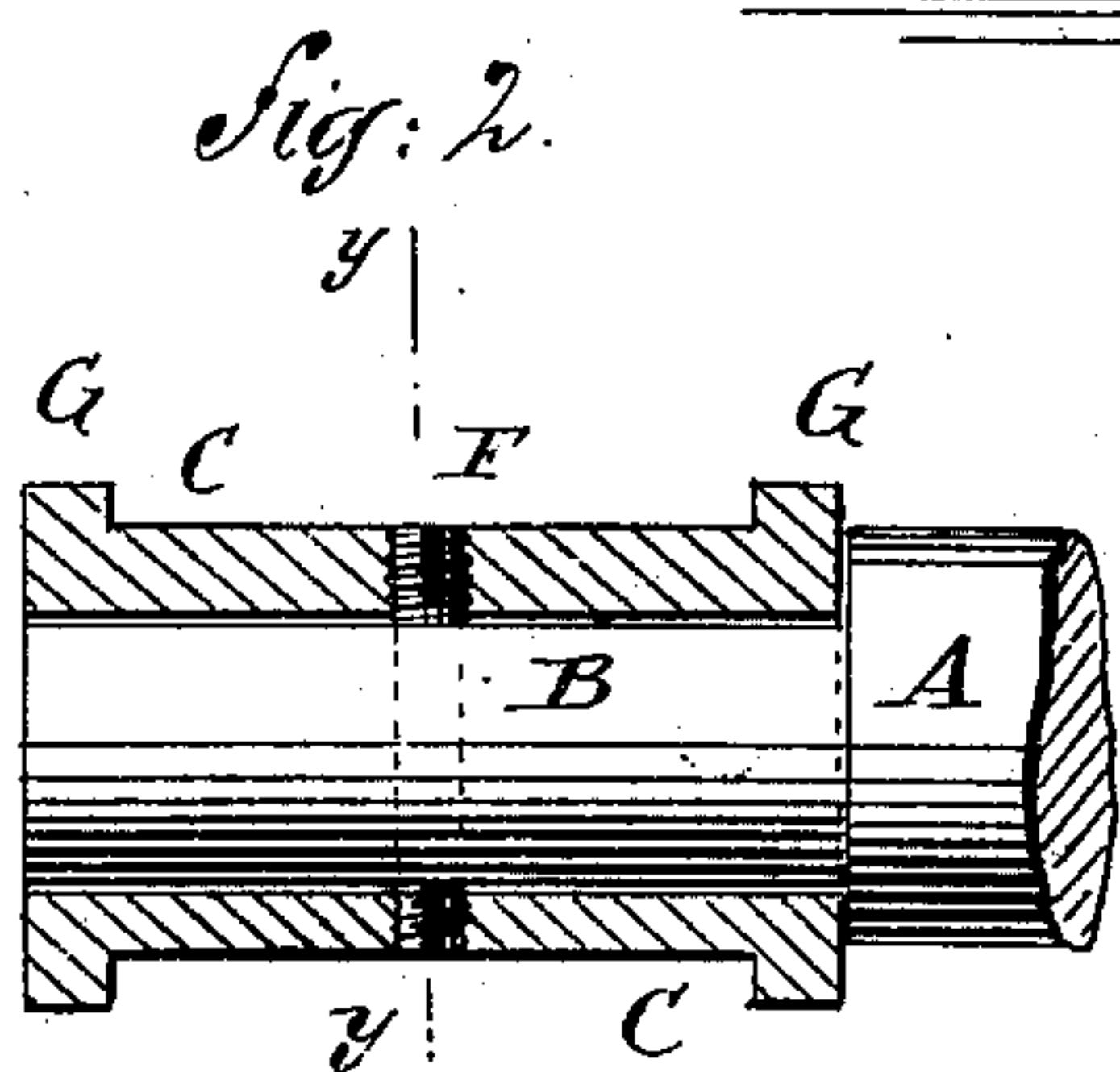
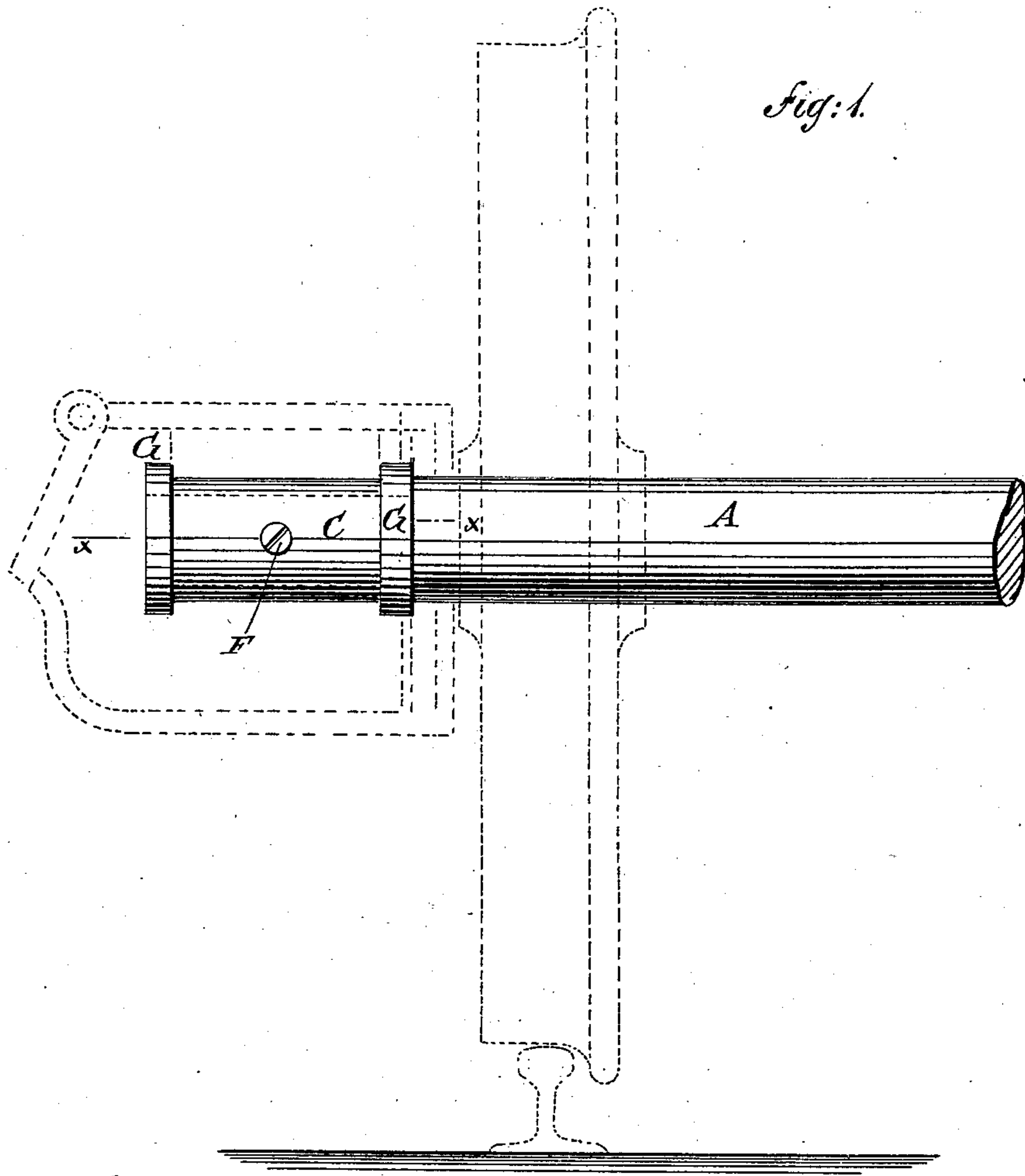
(No Model.)

J. GAMBLLEE & J. F. HARING.

CAR AXLE.

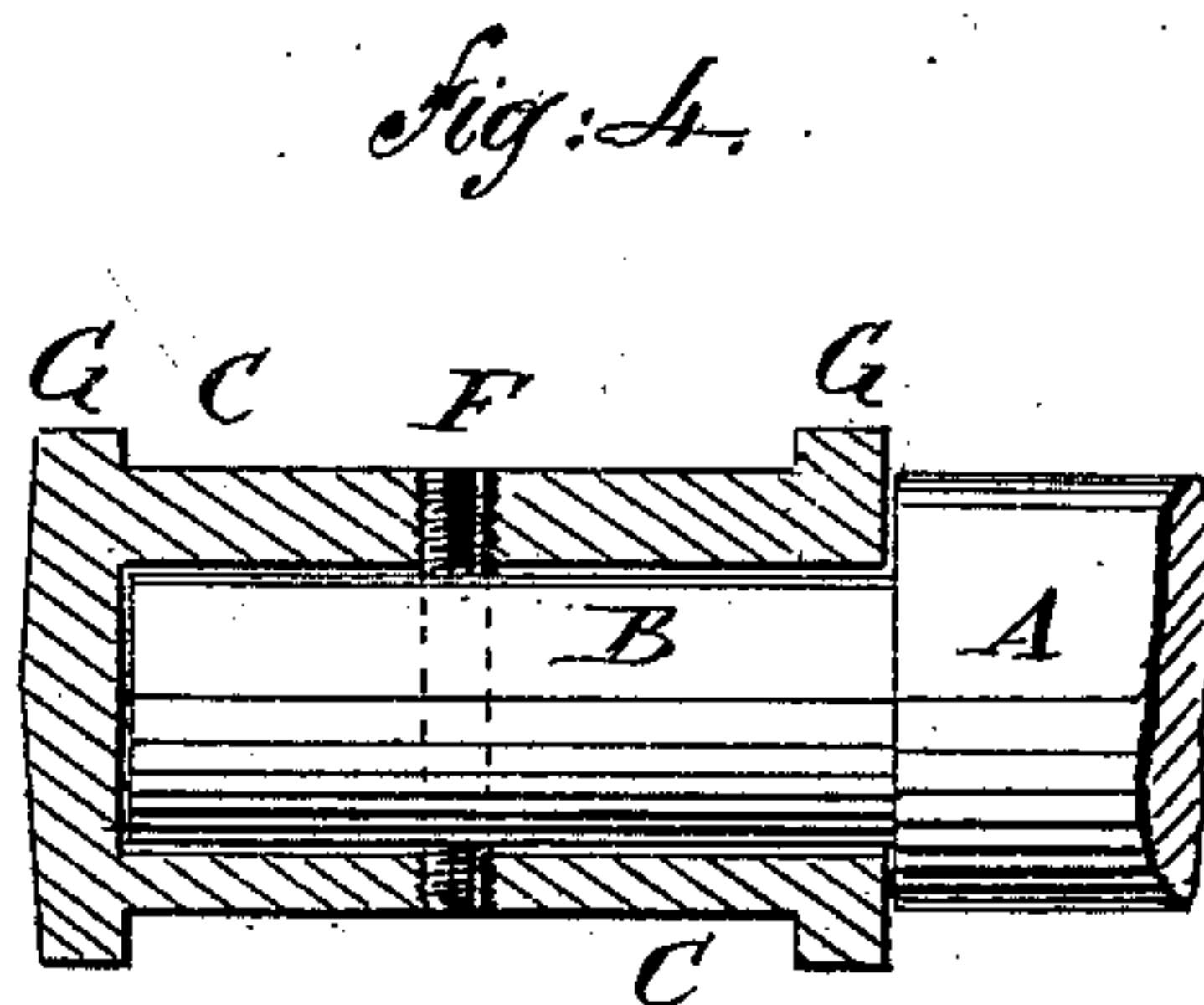
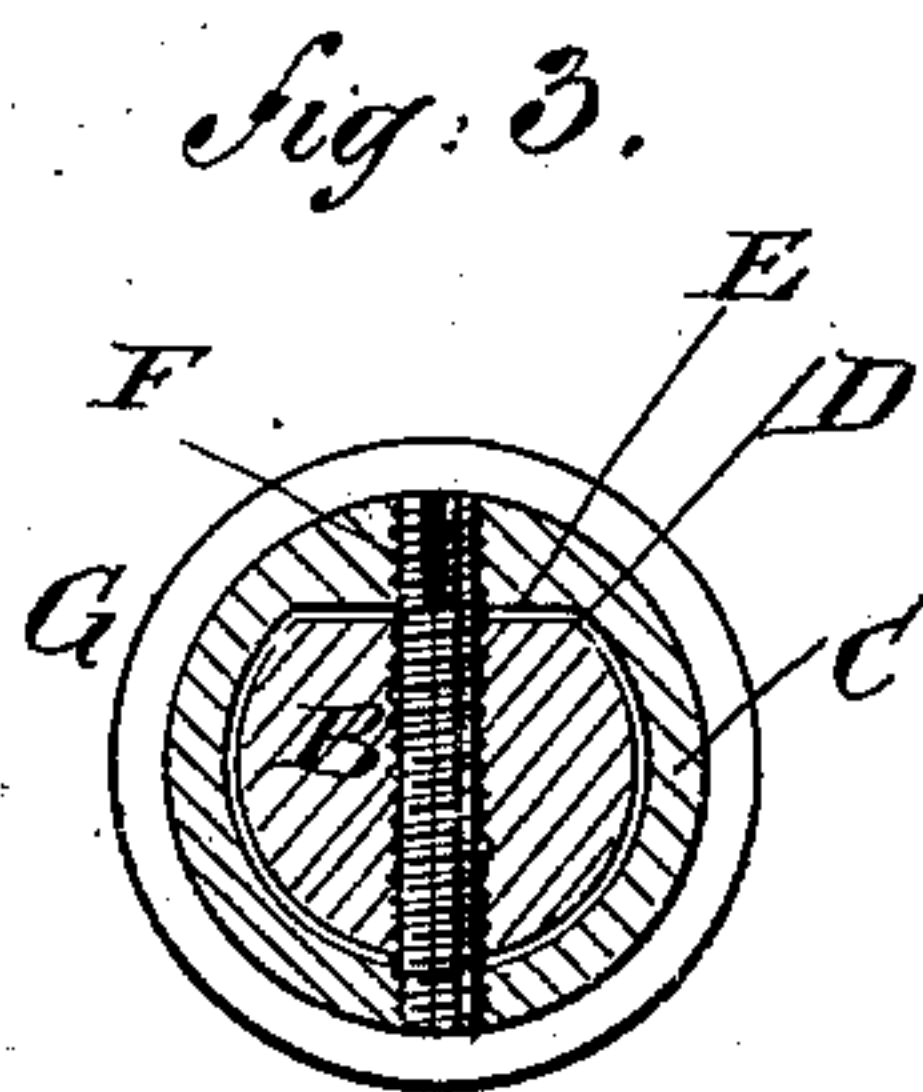
No. 273,506.

Patented Mar. 6, 1883.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JEULEOS GAMBLLEE AND JOHN F. HARING, OF CRESSKILL, ASSIGNORS TO THEMSELVES, AND JOHN H. HUYLER, OF TENAFLY, NEW JERSEY.

CAR-AXLE.

SPECIFICATION forming part of Letters Patent No. 273,506, dated March 6, 1883.

Application filed December 16, 1882. (No model.)

To all whom it may concern:

Be it known that we, JEULEOS GAMBLLEE and JOHN F. HARING, of Cresskill, in the county of Bergen and State of New Jersey, have invented a new and Improved Car-Axle, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of our improvement. Fig. 2 is a sectional side elevation of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a sectional end elevation of the same, taken through the line *y y*, Fig. 2. Fig. 4 is the same section as Fig. 2, but showing a modification.

The object of this invention is to promote the durability of car-axles and facilitate the repairing of such axles when worn.

The invention consists in the combination, with a car-axle having its journals flattened upon one side, of separable bushings having a portion of their inner surfaces correspondingly flattened, whereby the said bushings will be held from turning upon the said journals, and can be readily detached when worn. The bushings are held from longitudinal movement upon the journals of the axle by pins or screws passing through the said bushings and journals transversely, as will be hereinafter fully described.

A represents a railroad-car axle to which wheels are designed to be applied in the ordinary manner. Upon each journal, B, of the axle A is fitted a bushing, C, upon which the bearings of the axle-boxes rest, as indicated in dotted lines in Fig. 1. The journals B of the axle A are flattened upon one side, as shown at D in Fig. 3, to fit against correspondingly-flattened portions E of the inner surface of the bushings C, to prevent the said bushings from turning upon the said journals. The bushings C are held from longitudinal move-

ment upon the journals B by pins or screws F, passing through the said bushings and journals. The bushings C are made with a collar, G, upon each end to keep the bearing-boxes in place upon them. The bushings C may be made open at both ends, as shown in Fig. 2, or their outer ends may be closed, as shown in Fig. 4.

With this construction the journals B will be protected from wear, and the bushings C, when worn, can be readily detached and replaced with new bushings, so that the axles will be much more durable than when the wear comes directly upon the journals in the ordinary manner.

With this construction, also, the bushings C will be firmly held from turning without its being necessary to weaken the said bushings and their journals by forming large perforations through them to receive pins of sufficient size to hold the said bushings against the friction of their bearings.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a car-axle, the combination, with the journal B, flattened upon one side, and the bushing C, having a portion of its inner surface correspondingly flattened, of the pin or screw F, substantially as herein shown and described, whereby the said bushing will be held from longitudinal movement upon the said journal, as set forth.

2. In a car-axle, the journal B, in cross-section having the form of a cylinder with a segment thereof removed, in combination with the bushing C, with an internal correspondingly-shaped surface, and the pin or bolt F, substantially as and for the purpose set forth.

JEULEOS GAMBLLEE.
JOHN F. HARING.

Witnesses:

JAMES T. GRAHAM,
C. SEDGWICK.