No. 662,777. Patented Nov. 27, 1900.

J. L. DOLSON.

VEHICLE AXLE.

(Application filed Oct. 4, 1900.)

(No Model.)

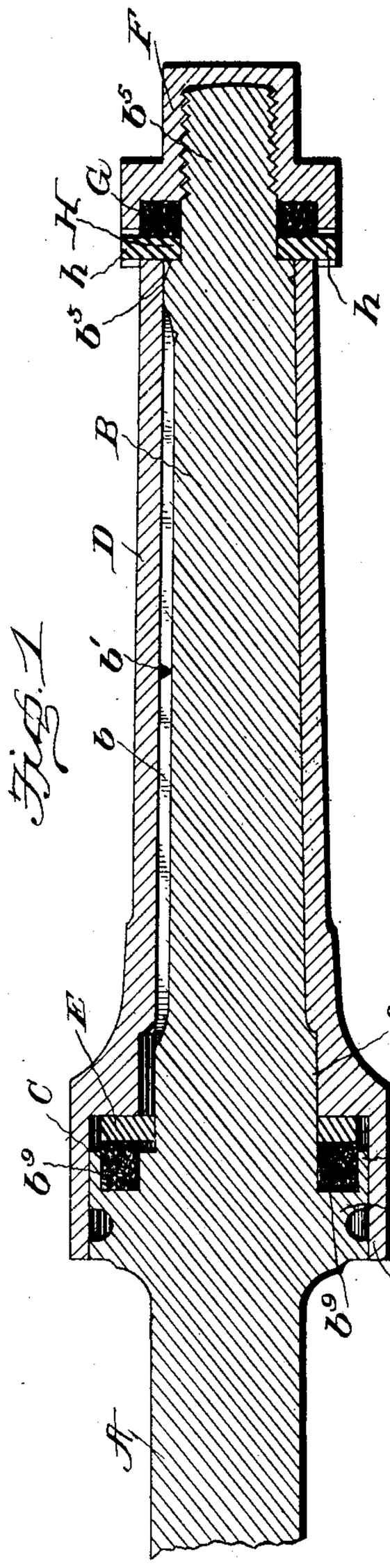

Fig. 1.

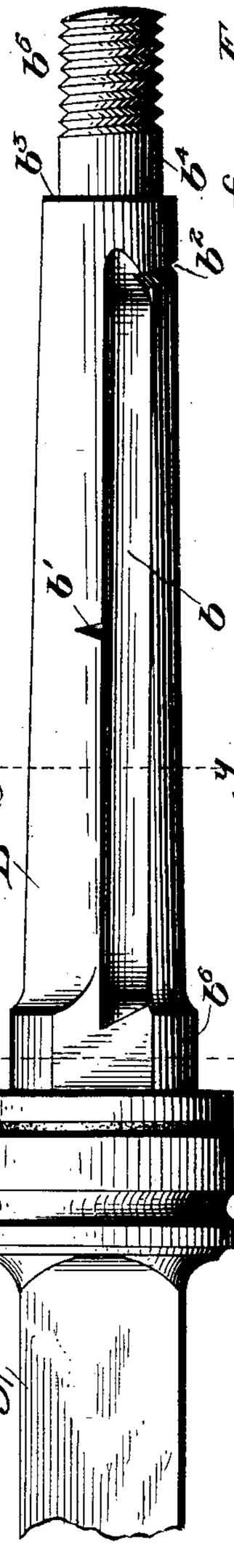

Fig. 2.

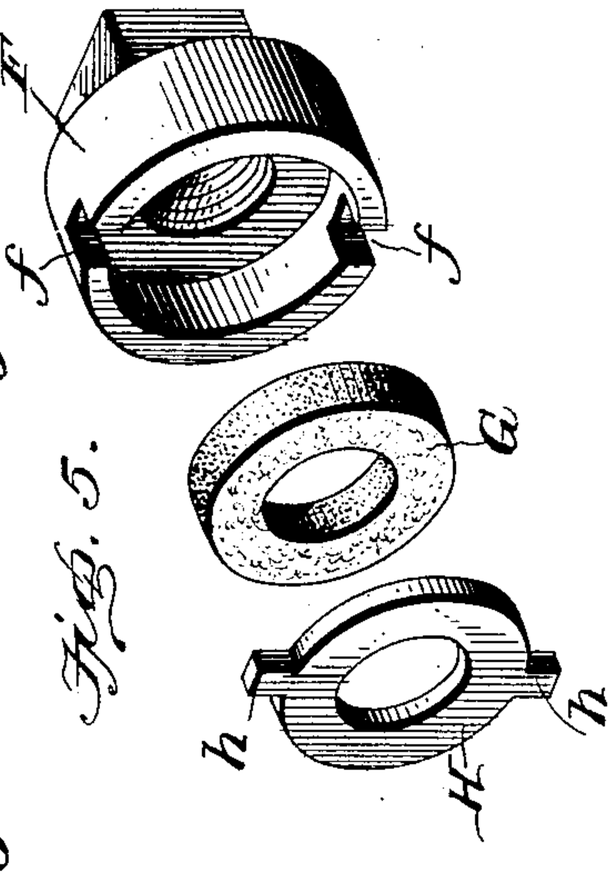

Fig. 5.

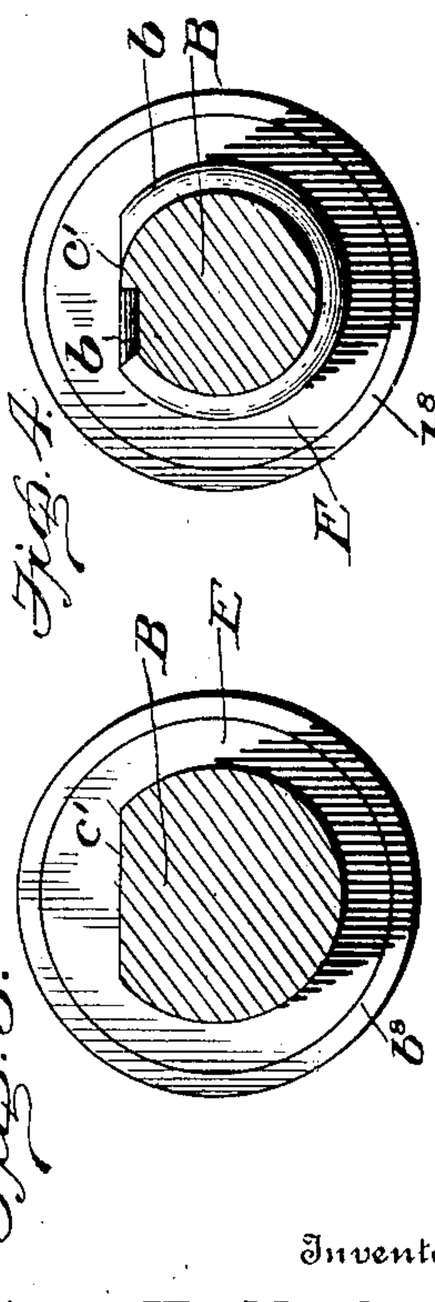

Fig. 4.

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN L. DOLSON, OF CHARLOTTE, MICHIGAN.

VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 662,777, dated November 27, 1900.

Application filed October 4, 1900. Serial No. 31,994. (No model.)

To all whom it may concern.

Be it known that I, JOHN L. DOLSON, a citizen of the United States, residing at Charlotte, in the county of Eaton and State of Michigan, have invented certain new and useful Improvements in Vehicle-Axles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to vehicle-axles, and more particularly to that class known in the art as "lubricating-axles."

The object of the invention is to provide a vehicle-axle of such construction that the objectionable rattling noises due to the wearing of the washers are entirely obviated by the employment of cushions which, as the washers wear, compensate for such wear, and thus overcome the objection above noted.

With this object in view the invention consists in certain features of construction and combination of parts, which will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view of the axle spindle and box. Fig. 2 is a top plan view of the axle-spindle. Fig. 3 is a cross-sectional view on line $x\,x$, Fig. 2. Fig. 4 is a similar view on line $y\,y$, same figure; and Fig. 5 is a detail perspective view of the washer, cushion, and nut for the outer end of the axle-spindle.

Referring to the drawings, A denotes the axle, and B its spindle. The spindle is formed with a main lubricating-groove b, a distributing-groove b', and a feed-groove b^2, which in construction and operation are the same as the corresponding features shown in Letters Patent No. 579,704, granted to me March 20, 1897. The outer end of the spindle is formed with an annular shoulder b^3, a smooth portion b^4, and a screw-threaded extremity b^5. The inner end of the spindle is formed with a bearing-shoulder b^6, cut away to form a flat portion, and a stop-shoulder b^7, having an annular flange b^8, the two constituting a cushion-chamber b^9, adapted to receive a cushion C, which is in the form of a ring or washer and may be made of felt, cork, rubber, or any other suitable material, and when made of rubber is adapted to be chemically treated to prevent its dissolution by contact with the lubricating-oil.

D denotes a box, the inner end of which is provided with a cup-flange d, which embraces the shoulder b^7 and the flange b^8. A washer E, made of comparatively hard material, is placed about the shoulder b^6 of the axle-spindle and has a straight portion c' to engage the corresponding portion of the shoulder b^6, whereby said washer is held against rotation. This washer is confined between the inner end of the box and the outer face of the cushion C, which latter being made of springy or elastic material compensates for the wear of the washer, and thereby prevents the objectionable rattling noises caused by the wearing of the spindle-washers. To provide against this same objectionable feature at the outer end of the axle-spindle, I provide a chambered nut F, in which is seated a cushion G, which bears against a wearing-washer H, which in turn bears against the shoulder b^3 of the spindle and the outer end of the box. This washer when placed upon the axle-spindle is prevented from being turned by the box by providing the washer with one or more lugs h, which engage one or more notches or recesses f, formed in the edge of the chamber of the nut.

In operation after the parts have been assembled, as shown in Fig. 1 of the drawings, it will be noticed that the cushions C and G tend at all times to hold the wearing-washers E and H into engagement with the ends of the box, and, as hereinbefore stated, as the washers wear the cushions swell or distend, thus holding the washers in firm engagement with the ends of the box and preventing the objectionable rattling noises.

While I have shown my present invention applied to a lubricating-axle and prefer to use it in that connection, I reserve to myself the right to adapt the invention to axles now in general use, as well as to any improved form of axle which may be placed upon the market.

Various changes in the form, proportion, and the minor details of construction may be

resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with an axle-spindle provided with a bearing-shoulder b^6 having a portion thereof flat and provided with a stop-shoulder b^9 at the rear thereof, said shoulder b^9 being provided with a forwardly-projecting annular flange b^8, of a cushion seated in the chamber formed by the stop-shoulder b^9 and the flange b^8 and projecting outwardly therefrom, a washer placed upon the spindle and having a flat portion to engage the flat portion of the bearing-shoulder, and a box mounted upon said spindle and having its inner end held in frictional engagement with the washer and provided with a cup-flange which surrounds and incloses said washer, cushion, and the cushion-chamber, substantially as set forth.

2. The combination with an axle-spindle having an annular shoulder at its outer end and a screw-threaded extension, of a chambered nut having a notch or recess in one of its walls, a cushion seated in the chambered portion of said nut, and a washer confined between the cushion and the outer end of the box and provided with a lug to engage said notch or recess, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN L. DOLSON.

Witnesses:
VERNA CAREY,
GEO. BEEMER.