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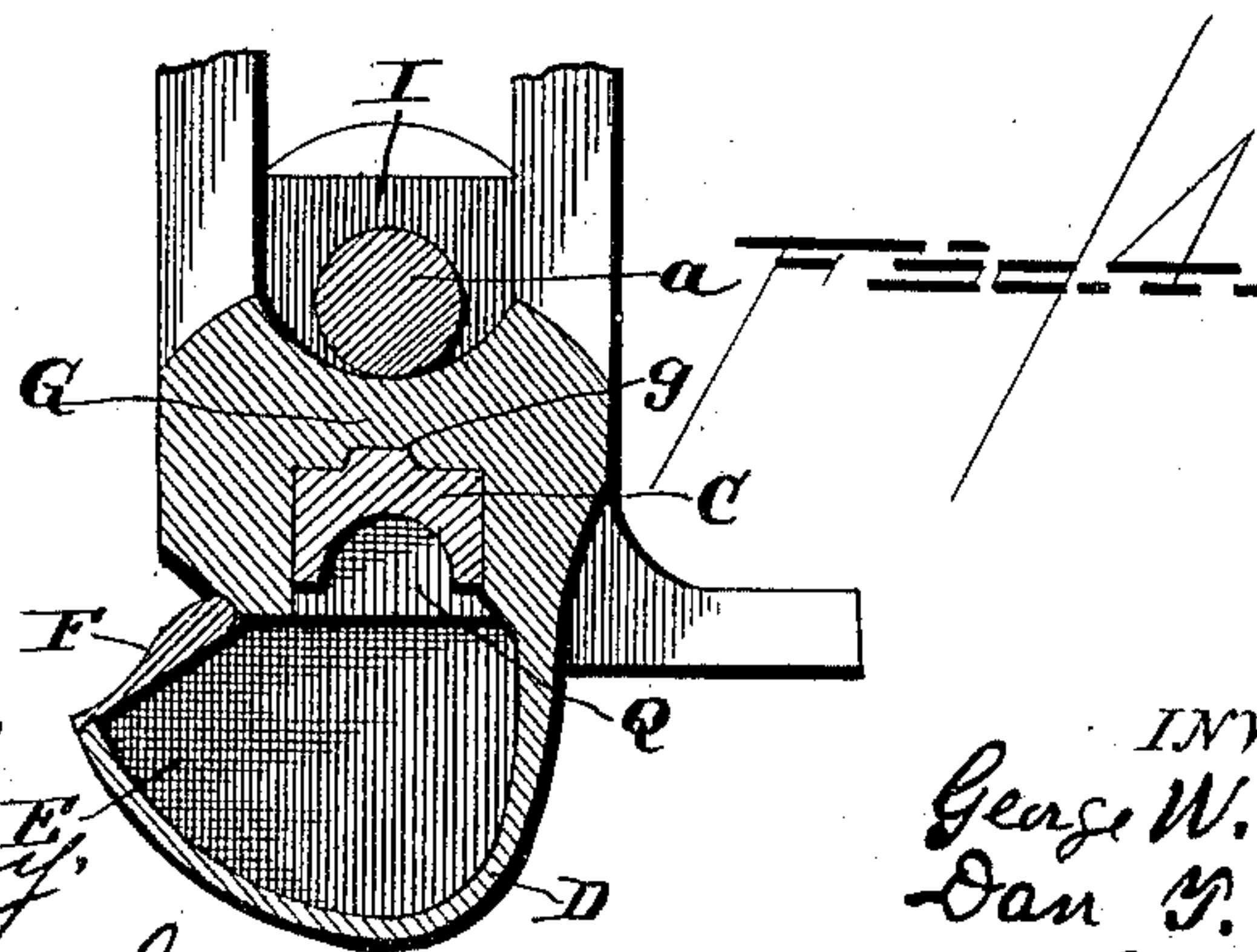
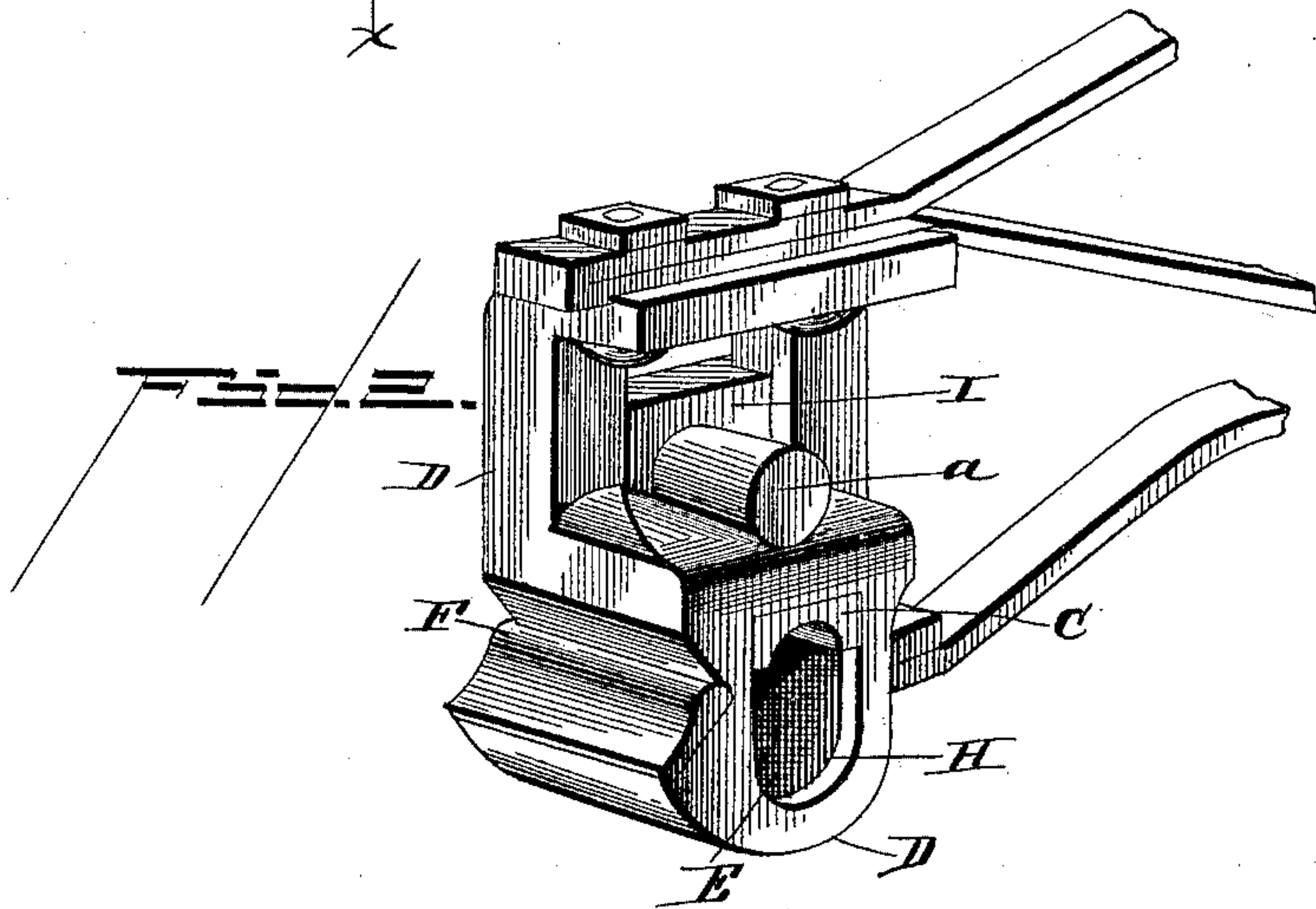
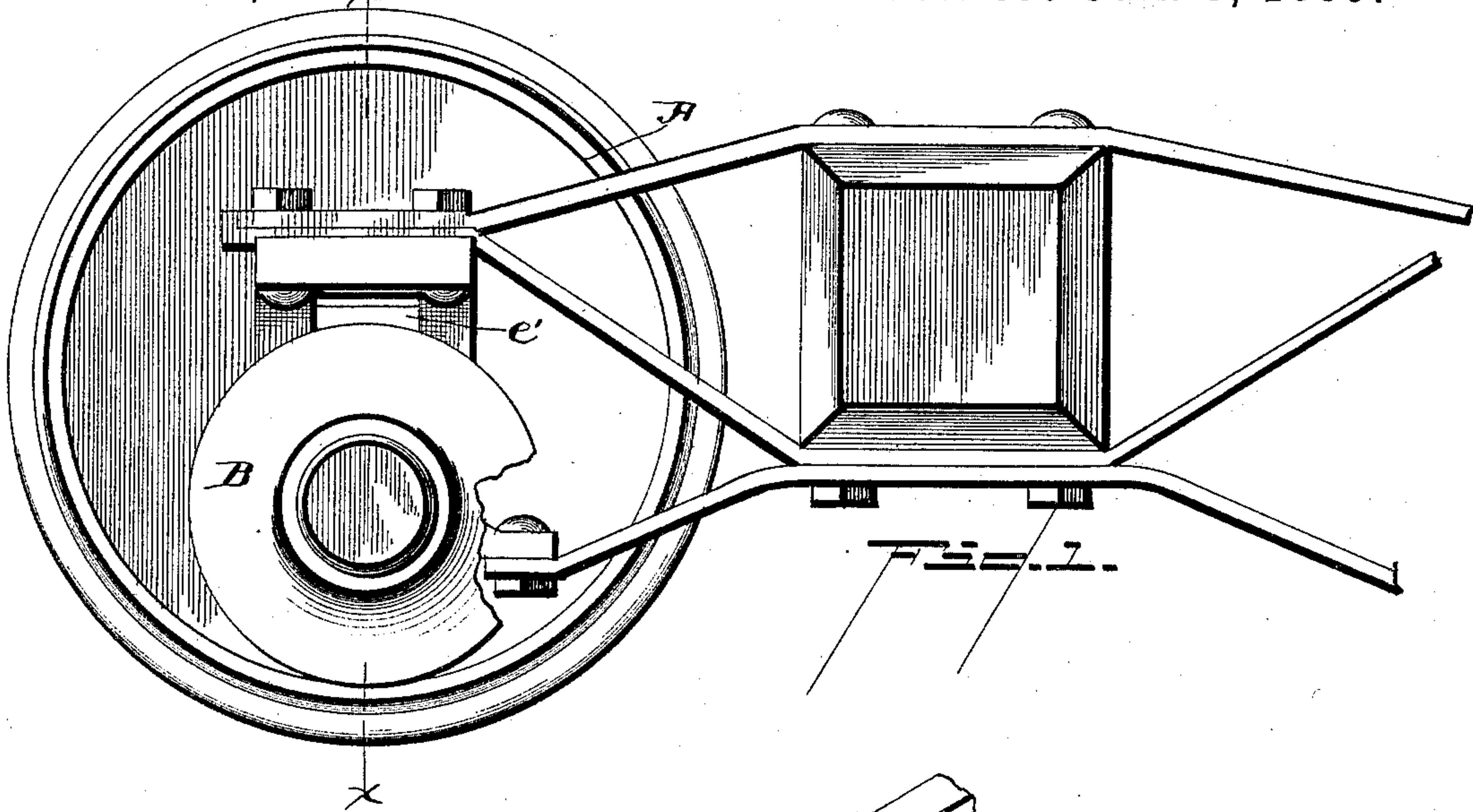
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G. W. FULMER & D. T. FRY.

CAR AXLE BOX AND BEARING.

No. 395,777

Patented Jan. 8, 1889.



WITNESSES.

M. H. Humphrey,
Van Buren Hillgard.

INVENTOR.

George W. Fulmer,
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By Robt. A. Lacey
Attorneys.

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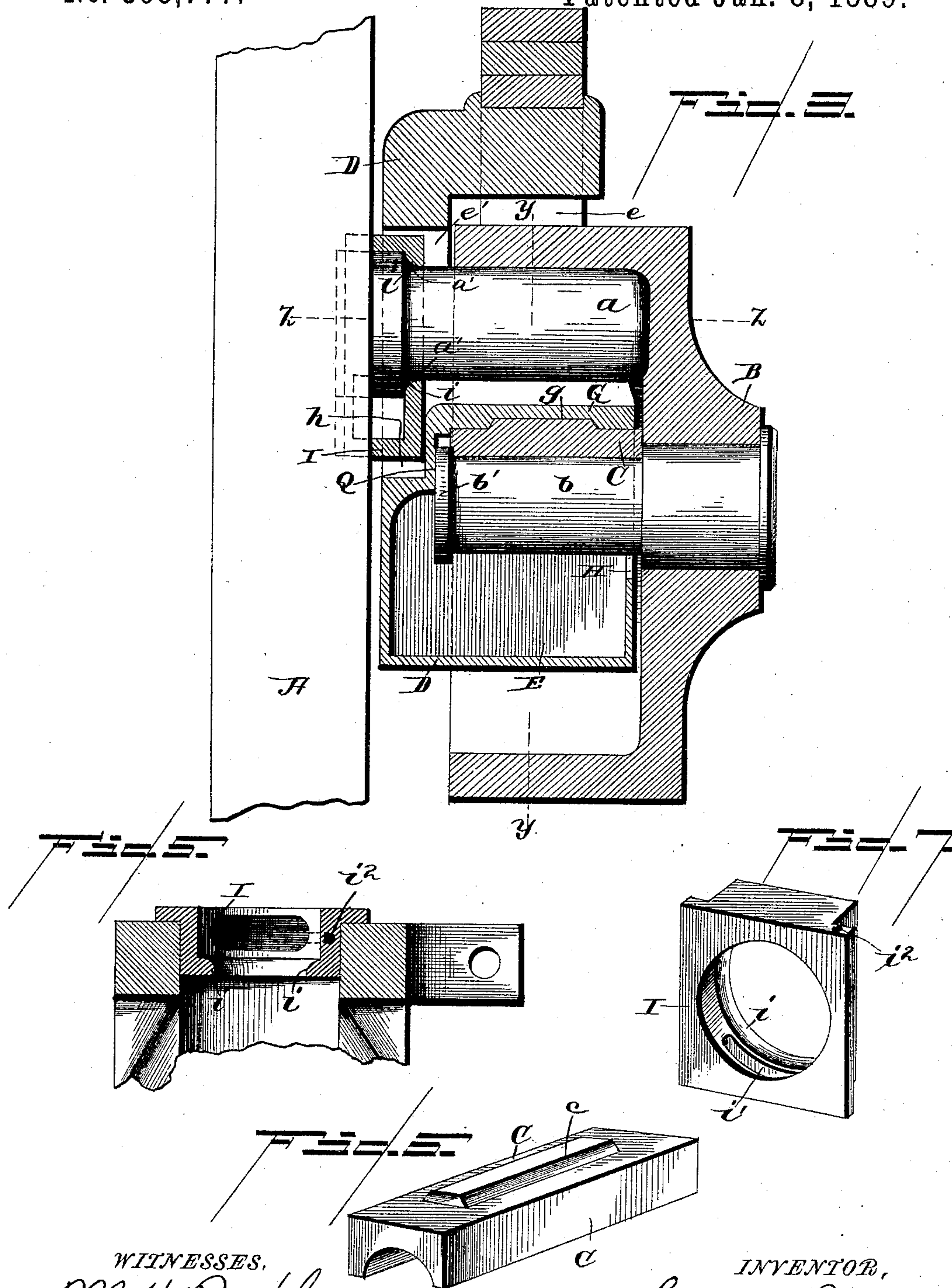
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UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON FULMER AND DAN THORNTON FRY, OF WATER VALLEY, MISSISSIPPI.

CAR-AXLE BOX AND BEARING.

SPECIFICATION forming part of Letters Patent No. 395,777, dated January 8, 1889.

Application filed September 8, 1888. Serial No. 284,881. (No model.)

To all whom it may concern:

Be it known that we, GEORGE WASHINGTON FULMER and DAN THORNTON FRY, citizens of the United States, residing at Water Valley, in the county of Yalobusha and State of Mississippi, have invented certain new and useful Improvements in Car-Axle Journal Boxes and Bearings; and we 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which a form part of this specification.

This invention relates to car-wheel-axle boxes and bearings.

The object of the invention is to contrive a construction in which a roller-bearing wheel is interposed between the car-wheel-axle journal and its bearings, thereby transferring the friction from the car-wheel-axle journal to the journal of the roller-bearing wheel, the roller-bearing-wheel journal having a slower motion in proportion to sizes of roller-bearing wheel and the car-axle journal, said roller-bearing wheel consisting of a flanged wheel, a single shaft or journal extending from its inside center, said shaft journaled in a single box, as against a box on each side of the roller, making two boxes and two journals which have heretofore been employed for the same purpose.

A further object of the invention is the construction of a box which may be bolted or secured in any suitable manner to the truck-frame now in general use and allow the car-wheel-axle journal to pass freely through said box and enter the flanged roller-bearing wheel, the box having below this opening a housing to receive and hold a brass in which the shaft or journal of the flanged roller-bearing is journaled and held in place, said box having a suitable space for packing and an opening on the side, wherein the packing and lubricants may be conveniently supplied.

A further object of this invention is to provide a guide-block fitted in a recess at the back of the box, and said block bored out to receive the car-wheel journal and hold it in

place, preventing any backward or forward motion and taking up the wear of lateral or side movement, keeping the end of the car-axle from wearing and pounding the inner wall of the flanged roller-bearing wheel. Said guide has a prescribed free vertical movement relative to the box, which allows the weight of the car and trucks to rest on the roller-bearing wheel and its journals; but in case the car-wheel journal, the flanged roller-bearing wheel, or its journal break or become displaced from any cause whatever the guide-block is so arranged that it will then hold the car-axle in place and receive and carry the weight safely, thereby preventing further damage.

The improvement consists of the peculiar construction and combination of the several parts and their application thereof, which will be hereinafter more fully described, claimed, and shown in the annexed drawings, in which—

Figure 1 is a side view, parts being broken away, of one end of a car-truck embodying my invention. Fig. 2 is a perspective view of one end of the truck with the flanged roller removed; Fig. 3, a vertical section on the line X X of Fig. 1; Fig. 4, a vertical section of the lower portion of the box on the line Y Y of Fig. 3; Fig. 5, a detail horizontal section of the guide-block and the box on the line Z Z of Fig. 3; Fig. 6, a perspective view of the brass, and Fig. 7 a detail perspective view of the guide-block.

The car or truck wheel A, having a journal, *a*, is of ordinary construction, the journal being enlarged at its inner end to form the shoulder *a'*, the purpose of which hereinafter will be more fully explained.

The flanged roller-bearing B, supported on the journal of the wheel A, is provided with the roller-journal *b*, which projects inward from the inner side of the said roller, being keyed thereto at its outer end. The inner end of this roller-journal has a flange, *b'*, which is confined between a portion or shoulder, Q, of the box D and the brass C, held in the said box and interposed between it and the said shaft *b*.

The box D supports the weight of the car and is secured to the truck-frame in any suit-

able manner. The recess *e* in the outside of the box, near its upper end, gives clearance for the flange of the roller B, and the opening *e'* permits the passage of the journal *a*, and is sufficiently large to admit the journal having a limited vertical movement. The lower portion of the box is made hollow to lessen its weight and form a chamber, E, for the reception of a lubricant, which is supplied to the said chamber through an opening in the side of the box, which opening is closed by the door F. The roof G of the chamber E has a recess, *g*, which receives a corresponding projection, *c*, on the back of the brass C to hold the said brass C in position. The opening H in the front side of the box D, near its lower end, receives said roller-journal.

The guide-block I, fitted in a recess in the rear side of the box and having a limited vertical movement, is supported on the journal *a* and has a shoulder, *i*, at its outer end to fit against the shoulder *a'* of the journal *a* and limit the movement of the journal with reference to the flanged roller, so that the end of the journal will be prevented from pounding against the said roller B.

It will be observed that the brass is held in the box by having the extensions on its back fitted in the recess in the roof of the chamber E, and that the flange *b'* is held between the shoulder Q and the end of the brass C; hence it will be readily understood that the roller-bearing B will be held in place relative to the box D and axle-journal A.

It will be noticed that the axle-journal *a* and the roller-journal *b* are in the same vertical plane. This is of vital importance, as it equalizes the weight and prevents any undue lateral strain on the bearing parts, besides bringing the parts in close relationship and in compact form. When from any cause it becomes necessary to remove the flanged roller bearing or brass, the truck-frame is jacked up sufficiently high to permit the disengagement of the projection *c* on the back of the brass C from the recess *g* in the box. The flanged roller is then disengaged by an outward movement.

The guide-block I has an oil-cellar, *i'*, in its lower end, and is provided with an oil-duct, *i*, which extends from its upper end to the said cellar *i'*, as shown most clearly in Figs. 5 and 7.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a car-axle bearing, the combination, with the wheel having a journal and the flanged roller-bearing supported on the axle-journal and having a shaft or journal projecting from its inner side only, of the box supported on the shaft of the said roller, substantially as described.

2. The combination of a wheel having a journal, the flanged roller supported on the

said journal and having a shaft or journal projecting from its said inner side, said shaft having a flange, the box having a shoulder to rest against one side of the flange, and the brass fitted in the box and adapted to bear against the other side of the flange, substantially as described.

3. The combination of the wheel having a journal, the roller supported on the journal and having a shaft projecting from its inner side, said shaft having a flange on its inner end, the box mounted on the shaft and having a shoulder which is adapted to bear against one side of the flange, the brass interposed between the shaft and the box, and having its end adapted to bear against the other side of the flange, and having an extension on its back, which extension is fitted in a corresponding recess in the box, substantially as described.

4. The combination, with the wheel having a journal and the flanged roller supported on the journal and having a shaft on its inner side only, of the box mounted on the said shaft and having a recess in its side to give clearance for the flange of the roller, whereby the shaft, the journal, and the flange of the said roller are in approximately the same vertical plane, substantially as described.

5. In a car-axle bearing, the combination, with the box D, having a recess, *h*, in its side, of the guide-block I, fitted in the said recess and having a limited vertical movement, substantially as described.

6. In a car-axle bearing, the combination, with the box D, having a recess in its side, of the guide-block fitted in the said recess and having the shoulder *i*, and the wheel having a corresponding shoulder, *a'*, on its journal, substantially as described, for the purpose specified.

7. The combination of the wheel having a shoulder on its journal, the flanged roller supported on the said journal and having a shaft on its inner side, the box mounted on the said shaft, having a recess in its side, and the guide-block fitted in the said recess, and having a corresponding shoulder to fit against the shoulder on the said journal, substantially as described.

8. The herein-described box, having a recess, *e*, in its front side near its upper end, and having its lower portion hollow and provided with an opening leading from the hollow portion, said box having openings for the reception of the journals, substantially as described, for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE WASHINGTON FULMER.
DAN THORNTON FRY.

Witnesses:

JOHN LEWIS MAULDIN,
P. S. ADDINGTON.