

(No Model.)

2 Sheets—Sheet 1.

C. GOMER.

CAR AXLE BOX AND JOURNAL.

No. 360,802.

Patented Apr. 5, 1887.

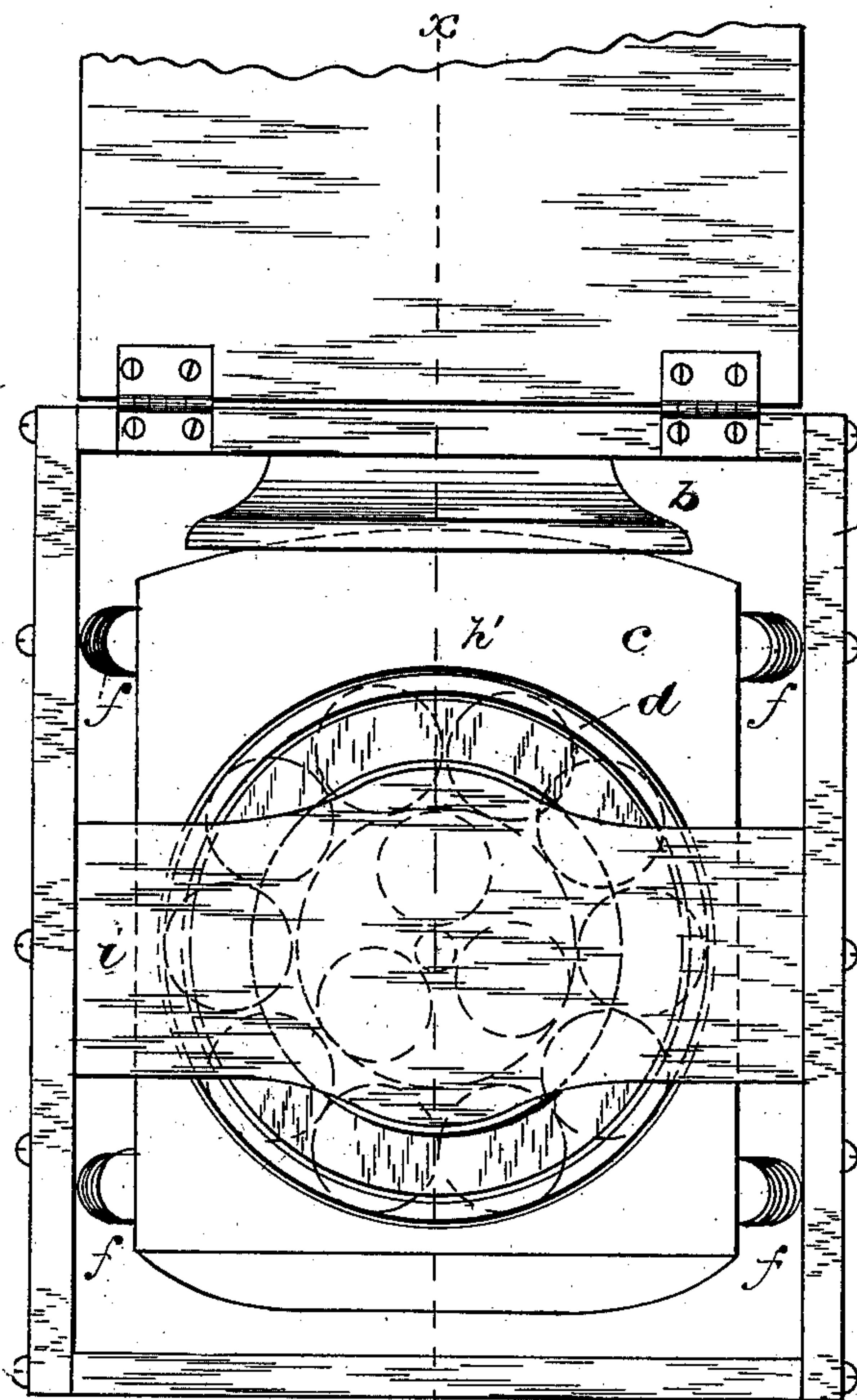


Fig. 1.

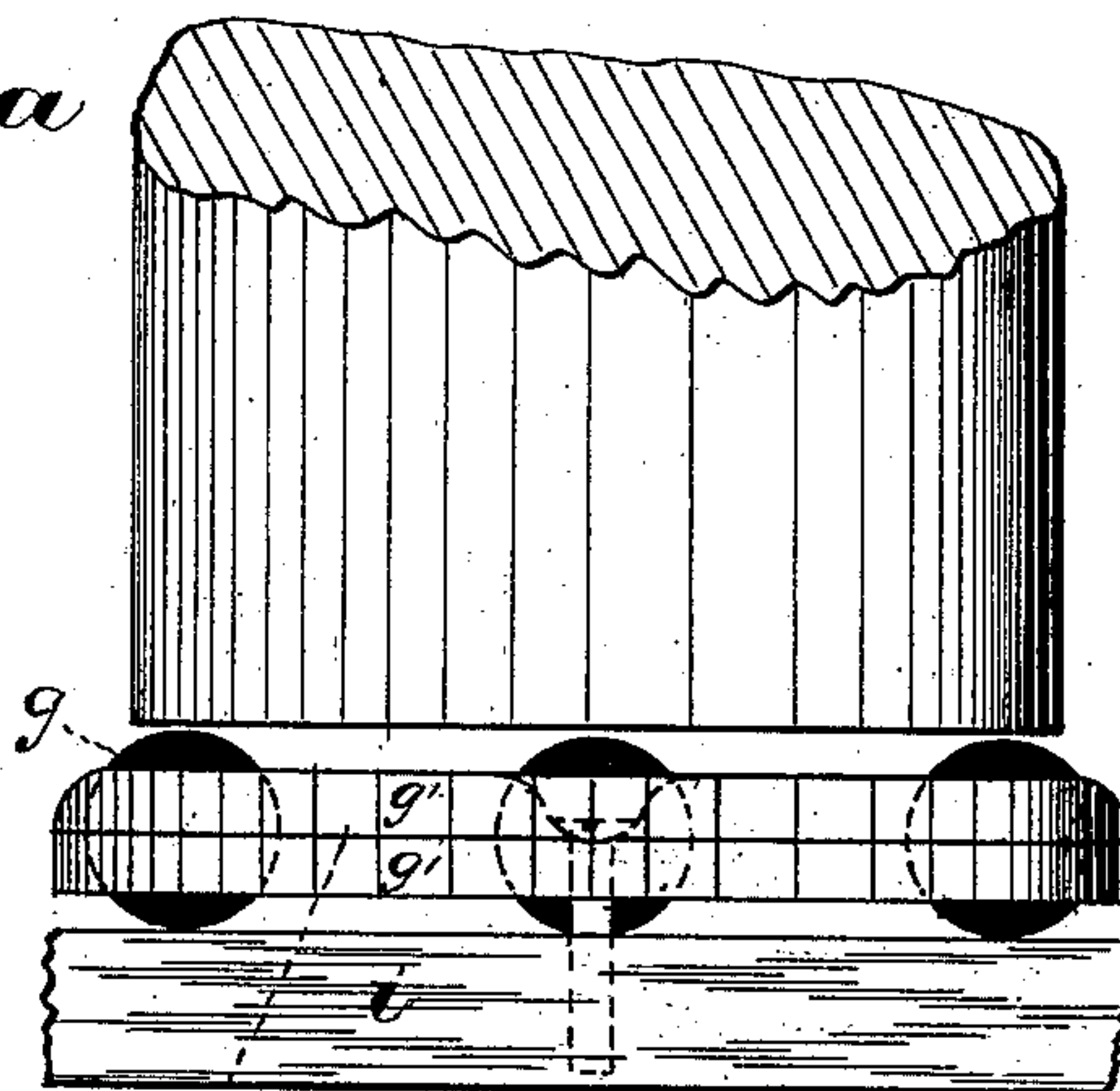


Fig. 2.

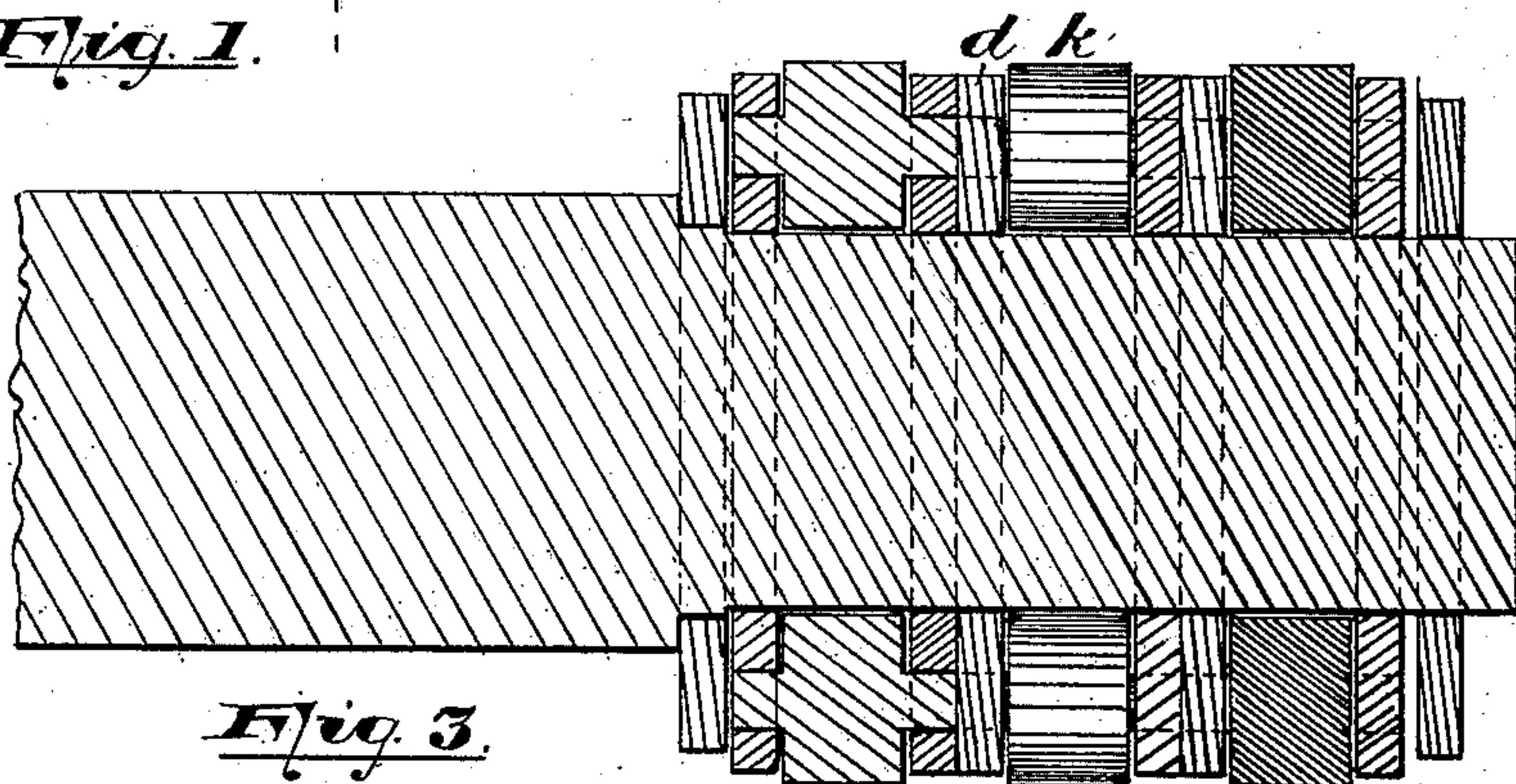


Fig. 3.

WITNESSES:

INVENTOR:

Wm S. Corwin,
Jos. C. Farr

Charles Gomer,

BY *Drake & Co.,* ATT'YS

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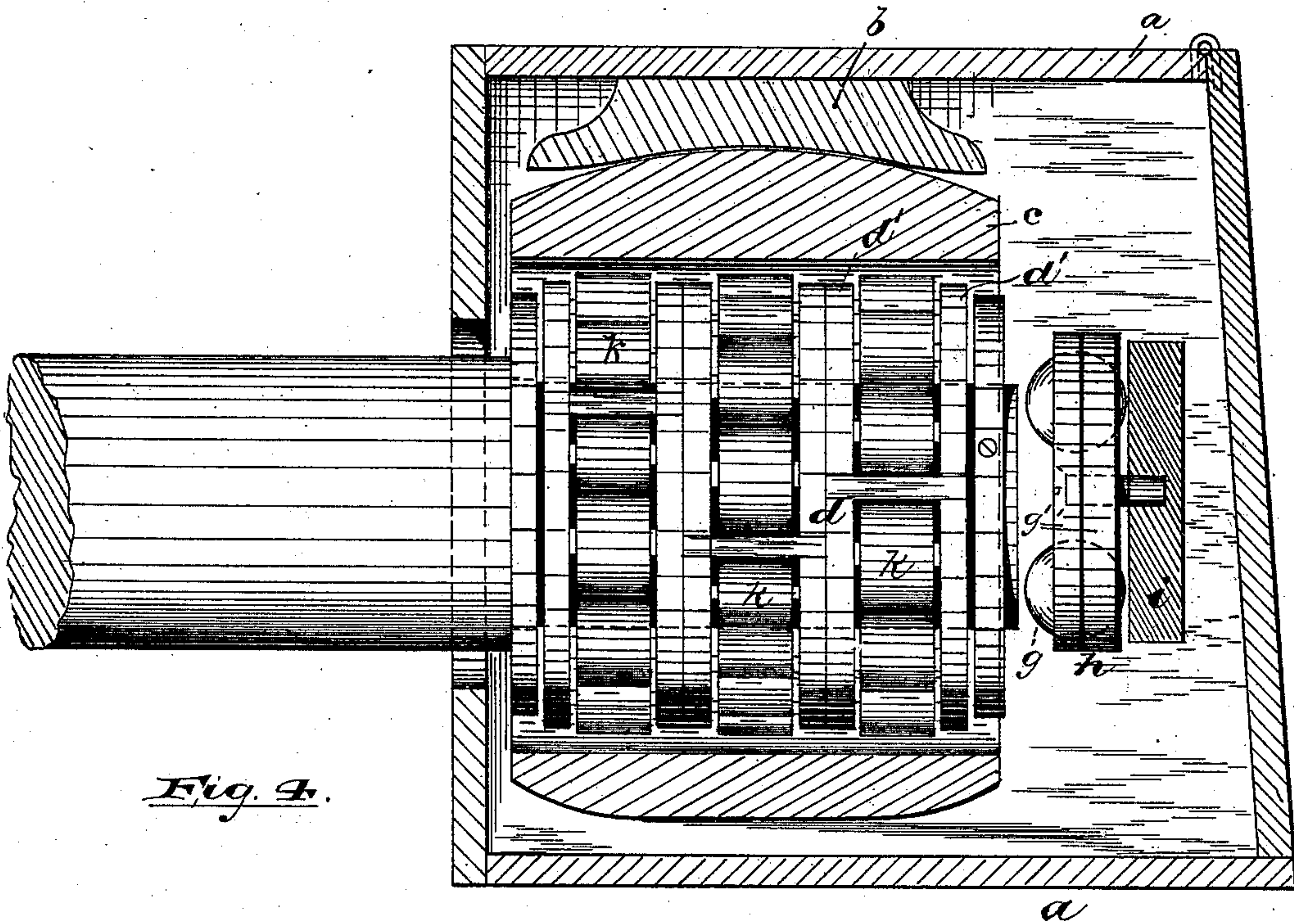
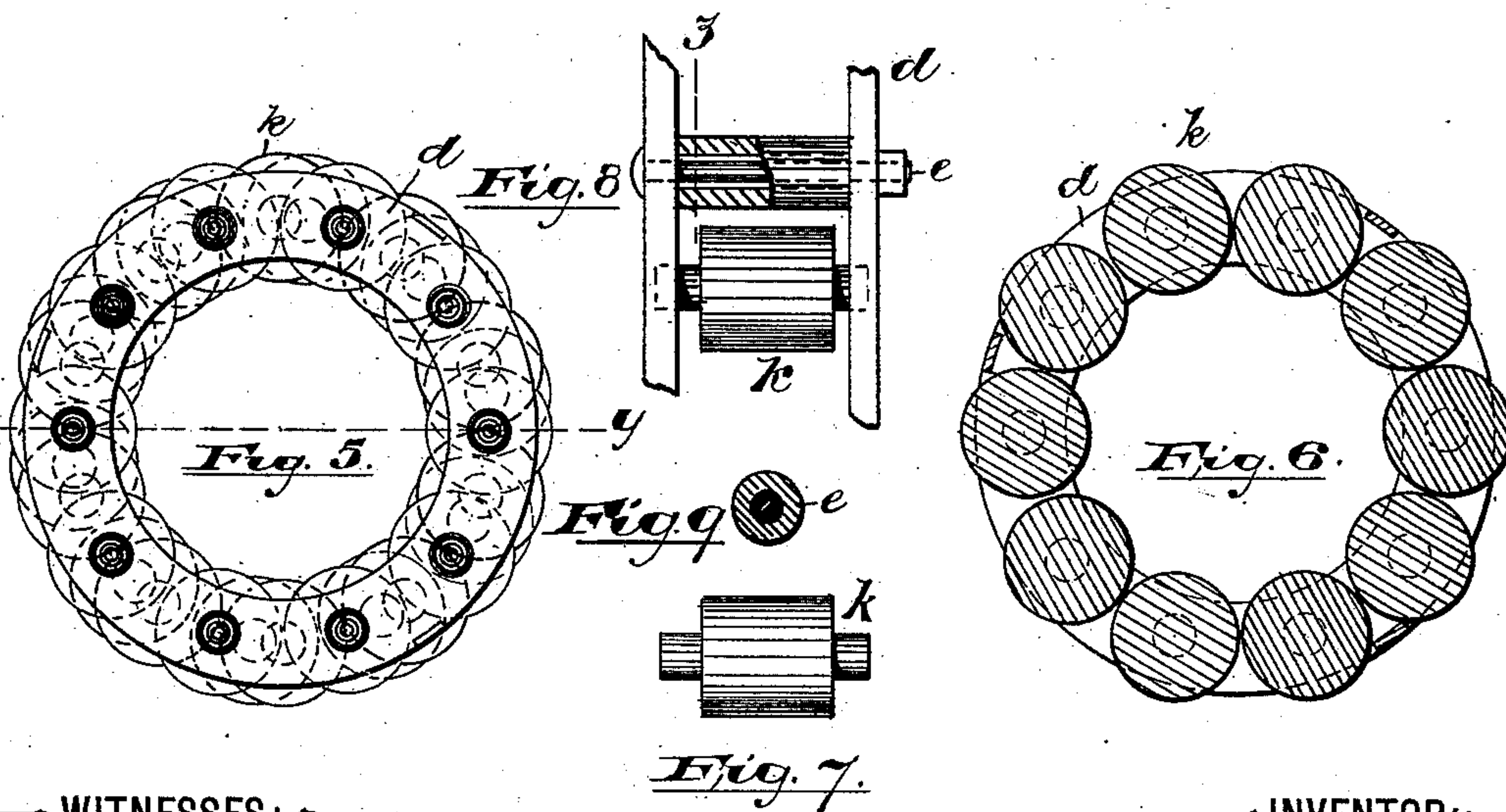


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES GOMER, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF TO
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CAR-AXLE BOX AND JOURNAL.

SPECIFICATION forming part of Letters Patent No. 360,802, dated April 5, 1887.

Application filed August 26, 1886. Serial No. 211,873. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GOMER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Car-Axle Boxes and Journals; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

The object of this invention is to reduce the friction in the journal-bearing of a horse-car or other vehicle, whereby the same may be drawn at a reduced expense of horse-power, both while working under the influence of a straight pull and while working around a curved track. A further object is to secure increased strength and durability in the construction of the mechanism employed for said purpose, and to reduce the cost of manufacture.

The invention consists in the improved journal-bearing for use in connection with a horse-car, or for other purposes, and in the arrangements and combinations of parts thereof, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, embodied in two sheets, in which like letters indicate corresponding parts in each of the several figures, Figure 1 is a front elevation of a car-box having the improvements involving the invention. Fig. 2 is a detail view showing an end bearing for the journal. Fig. 3 is a sectional view, taken through the line *y*, Fig. 5, of a journal having a series of anti-friction rolls held or suspended in a frame therearound. Fig. 4, Sheet 2, is a sectional view taken through line *x*, Fig. 1. Fig. 5 is a side elevation of the anti-friction rolls and a frame therefor. Fig. 6 is a sectional view of the same. Fig. 7 is a detail view showing one mode of securing certain parts of said frame together; and Fig. 9 is a sectional view of the bolt and sleeve, taken through line *z*, Fig. 8.

In said drawings, *a* is a journal-box, in which the journals of the car-wheels have their bear-

ings and on which the car-body is supported. Within said box, on the upper side of the same, is formed or secured a bearing, *b*, having a curved or rounded lower surface, which engages a corresponding curved or rounded surface of a sleeve, *c*. Said sleeve is centrally cored or bored out to receive the frame *d* and the rollers *k*, operating therein, the diameter of the boring corresponding quite closely to that of the frame and rollers, so that there will be but little, if any, lost motion.

The frame is preferably composed of a series of rings, *d' d'*, which are perforated to receive the journals of the anti-friction rollers, and are preferably bolted or connected together in any suitable manner, so that they are held permanently in their relative positions. The pair of rings on the opposite sides of the rollers are held apart, so as not to clamp the rollers and prevent free action, in any suitable manner, but preferably by having the tie-bolt *e*, Fig. 8, pass through a tubular section or sleeve, which latter separates the said rings.

The rollers are preferably arranged in two or more series, as indicated in Figs. 3 and 4, and are all disposed on different centers, as in Fig. 4, so that there will be as many bearings on the axle as possible, reducing the liability of the axle, when considerably worn, becoming lodged between two rollers, so that the freedom of action is reduced.

The curved surfaces of the parts *b* and *c* allow a ball-and-socket action, so that as the car is driven around a curve the parts move on one another and there will be no straining upon the car, and the wheels will be relieved of a large portion of the frictional contact with the track. Curved ribs or surfaces *f f*, formed at the sides of the collar, also allow the pivotal motion and relieve the car from the tendency to jam when on a turn or a curved track.

To prevent the journal or wheel making any frictional contact with adjacent parts should it move laterally, the opposite ends of the journal are provided with or engage roller or ball bearings *g*, Figs. 1 and 2, the balls being arranged in a pivoted and socketed frame, *h*, formed of separable sections *g' g'*, between which the rollers are arranged, and from the opposite sides of which the rolls project, so

as to engage the end of the journal and a cross-piece or bearing, *i*, of the box. The frame *h* is bolted to said cross-piece or bearing *i*, and has a pivotal movement, so that it may freely turn with the balls and journal.

The box is provided with a suitable hinged door or cover, to inclose the bearings and prevent access of dust, &c., to the working parts.

Having thus described the invention, what I claim as new is—

1. In combination, the journal-box *a*, having a bearing, *b*, at the top or upper part thereof, a sleeve engaging said bearing, and a frame having series of rollers journaled therein, which said rollers bear both on said sleeve and the car-axle, substantially as shown and described.

2. In combination with the sleeve and axle-journal, a frame consisting of pairs of perforated rings bolted together and series of rollers disposed on different centers, as indicated, substantially as and for the purposes set forth.

3. In combination with the box, a socketed bearing, *b*, a collar having a rounded surface at the top to engage the same and rounded surfaces at the opposite sides to engage the sides of said box, a frame having rollers journaled therein which bear on said collar and the axle, and said axle, all said parts being arranged and combined substantially as and for the purposes set forth.

4. In combination, the box having a cross-piece or bearing, *i*, a collar, rollers, and an axle, and sections *g'*, between which the rollers are arranged so as to project from the sides thereof, said sections being pivoted to said cross-piece.

5. In combination with the collar, axle, and rollers, rings *d d*, arranged in pairs with the rollers between, adjoining pairs being bolted together, substantially as and for the purposes set forth.

6. In combination with the collar, axle, and rollers, rings *d d*, a tie-bolt, and tubular sections for holding said rings apart, substantially as and for the purposes set forth.

7. In combination with the axle and suitable roller-bearings, such as the collar *c* and rings *d d*, bolts to tie the same together, and a section, such as a sleeve, to separate the said rings and prevent the rollers from being clamped, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of August, 1886.

CHARLES GOMER.

Witnesses:

CHARLES H. PELL,
OSCAR A. MICHEL.