

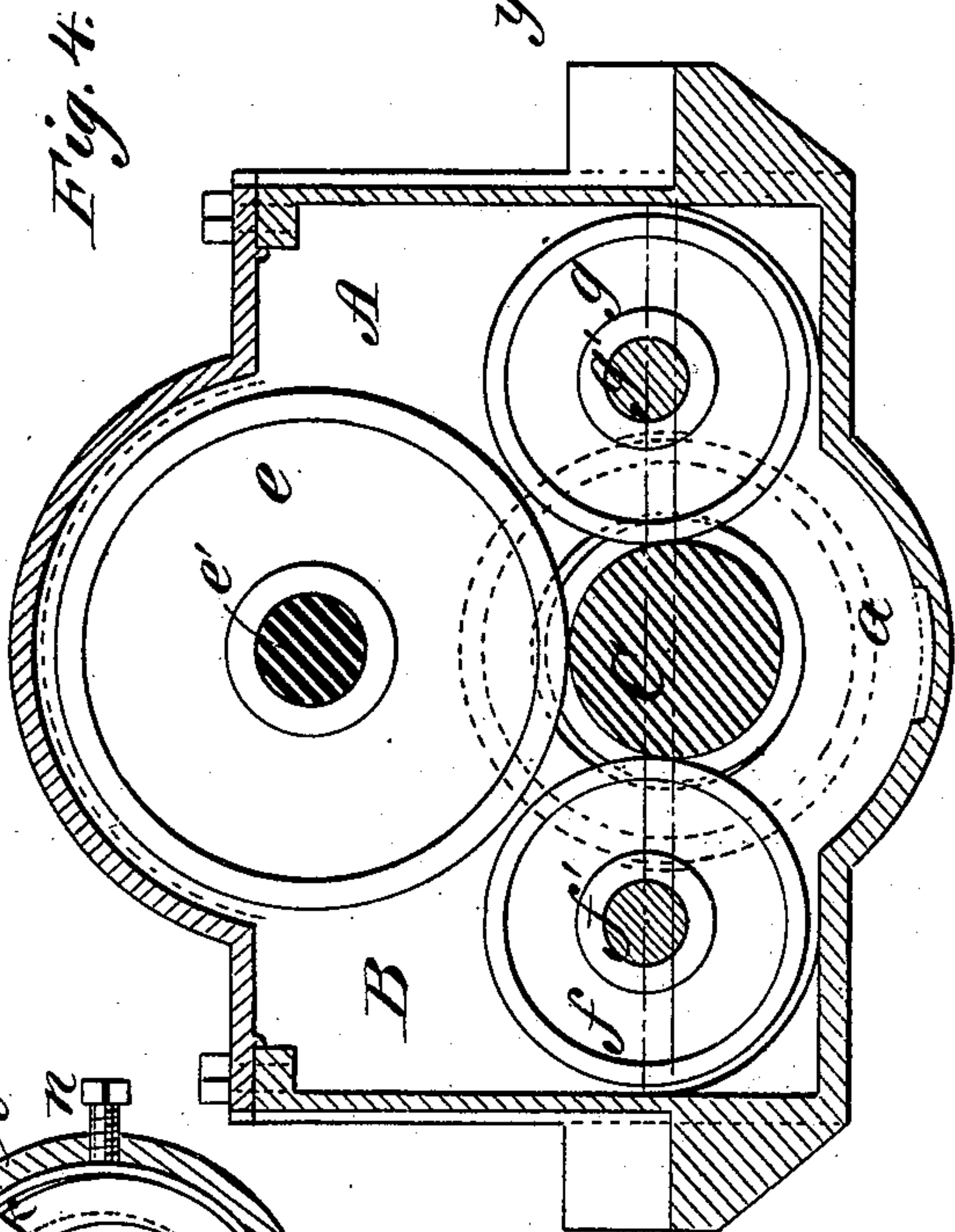
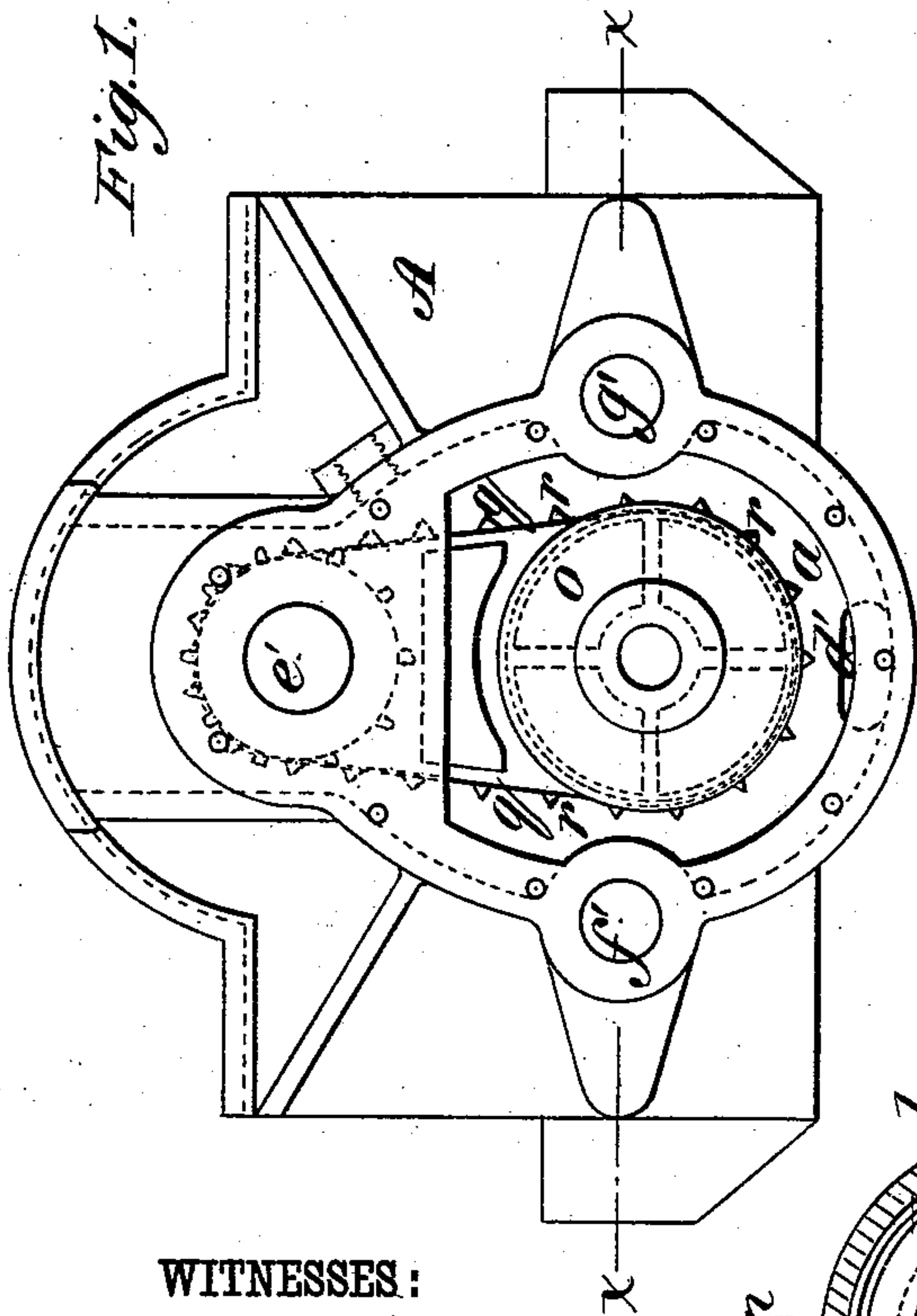
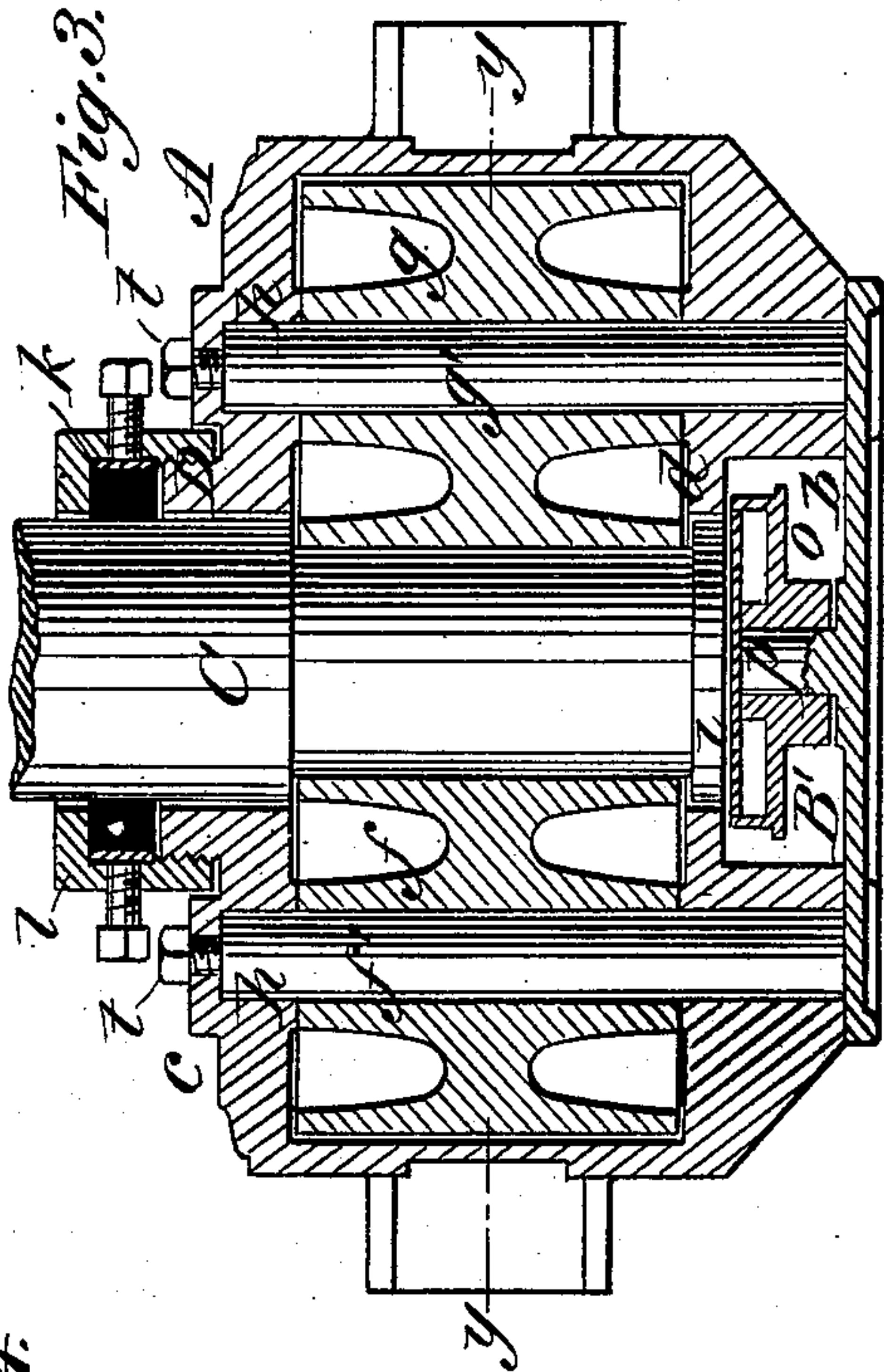
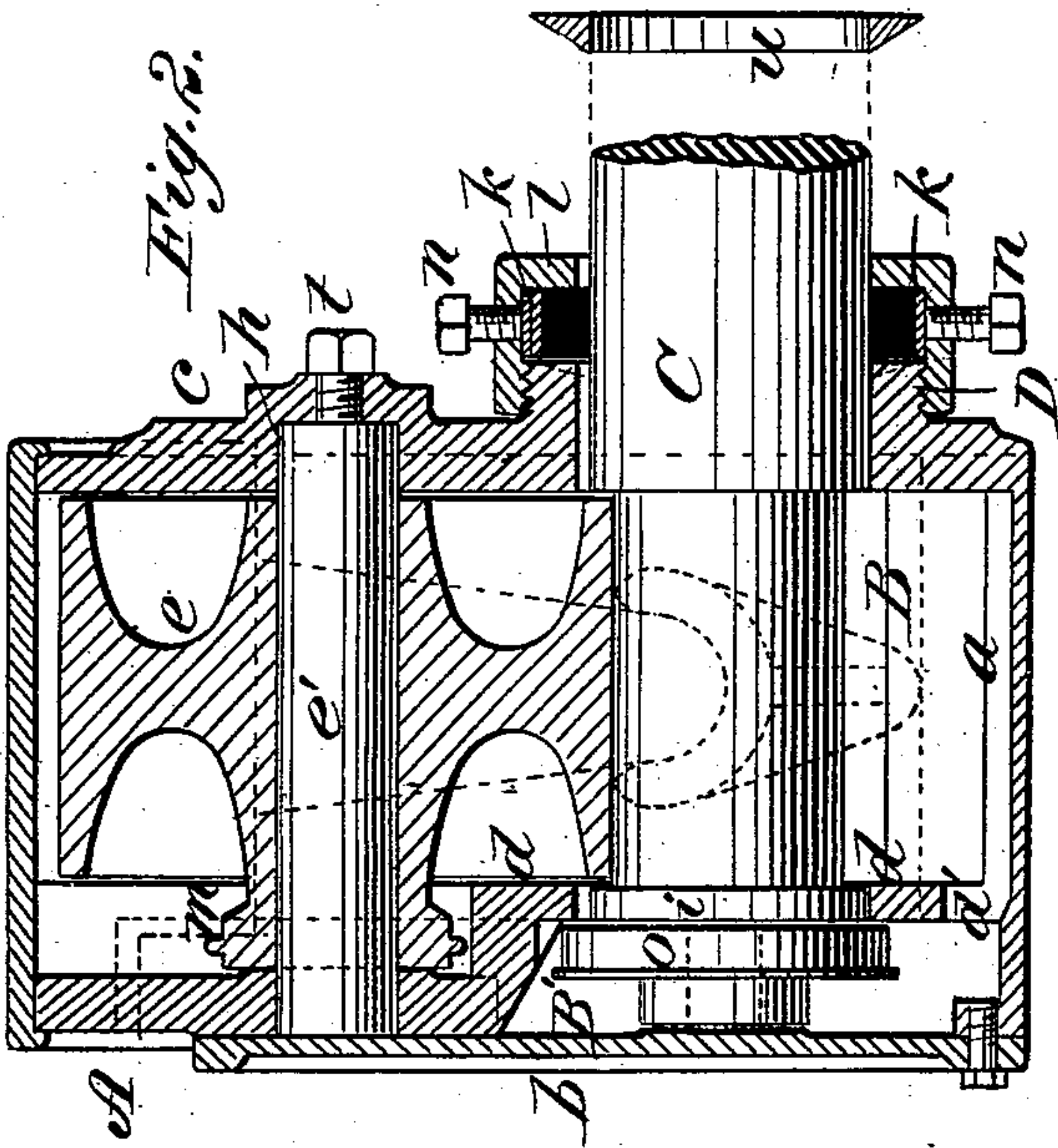
(No Model.)

C. E. CANDEE.

CAR AXLE BOX.

No. 253,582.

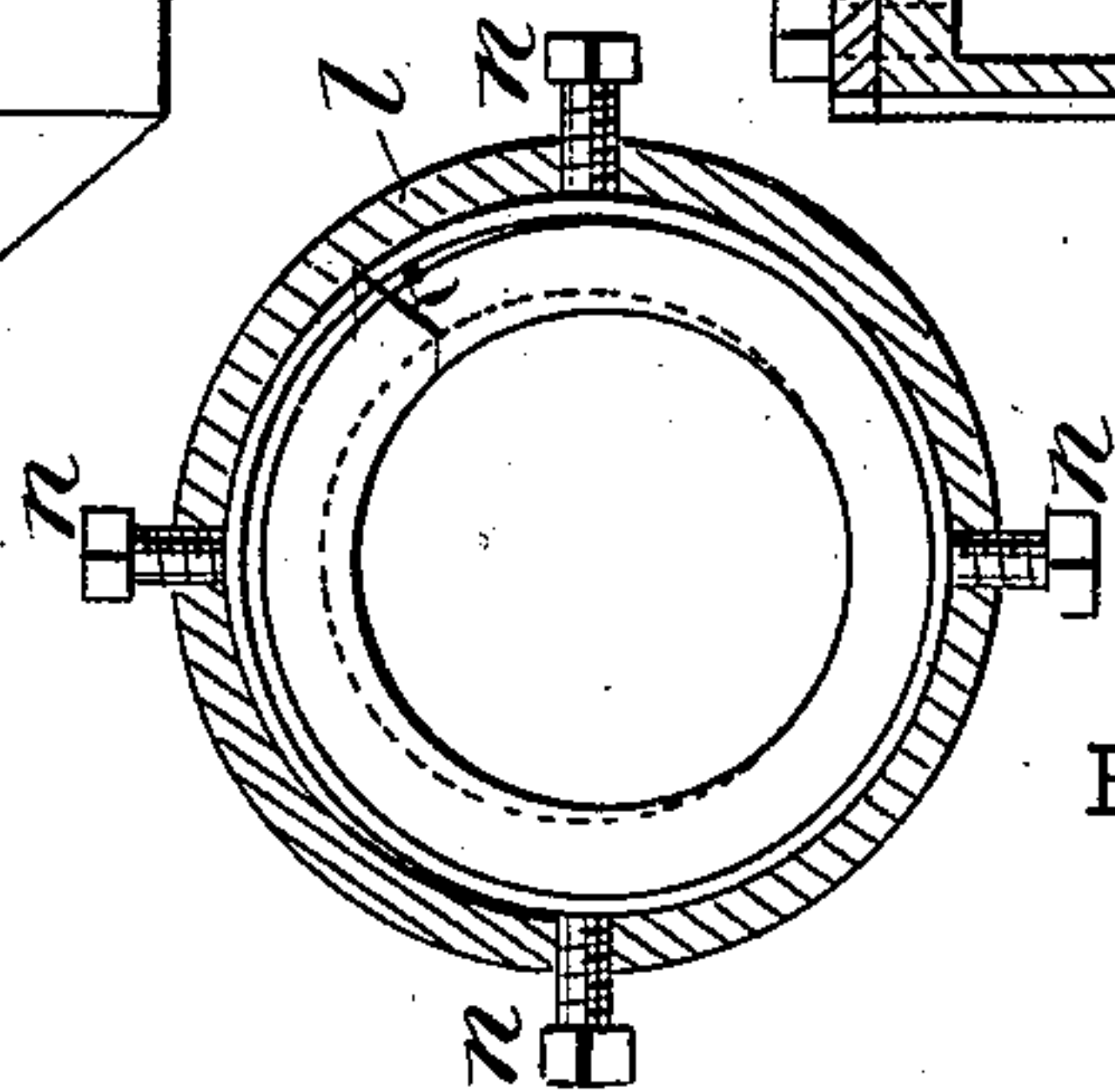
Patented Feb. 14, 1882.



WITNESSES:

Donn Twitchell.
C. Sedgwick

Fig. 5.



INVENTOR:

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UNITED STATES PATENT OFFICE.

CHARLES E. CANDEE, OF NEW YORK, N. Y.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 253,582, dated February 14, 1882.

Application filed December 19, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. CANDEE, of the city, county, and State of New York, have invented certain new and useful Improvements in Car-Axle Boxes and Journal-Bearings, of which the following is a full, clear, and exact description.

My improvements relate to car-axle boxes containing anti-friction rollers for the journals of the axles; and the present invention is an improvement upon the devices shown in Letters Patent No. 233,068, granted to me October 12, 1880.

My invention consists, first, in the devices for insuring continuous lubrication, and, second, in packing devices that render the box air and dust tight, as hereinafter described and claimed.

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

Figure 1 is a side view of an axle-box containing my improvements and with the back plate removed. Fig. 2 is a vertical transverse section of the box. Fig. 3 is a horizontal section on line *xx* of Fig. 1. Fig. 4 is a vertical longitudinal section on line *yy* of Fig. 3, and Fig. 5 is a cross-section of the packing-gland.

A is the axle-box, having its bottom portion, *a*, formed as a basin to contain the lubricant. The box is closed on all sides, the front by a plate, *b*, and the back by a plate, *c*, all the joints being packed to exclude dust. The box is divided by a partition, *d*, to form two chambers, *B B'*, the former and larger one, *B*, to contain the anti-friction rollers and journal of the axle, and the smaller chamber, *B'*, to contain the lubricating devices. The chamber *B'* is accessible by removal of front plate, *b*, and the two chambers connect by an opening, *d'*, in the partition, so that the lubricating material shall be at the same level in both and pass freely from one to the other.

C is the axle, extending through a stuffing-box, D, in the back plate, *c*, and through the chamber *B* and partition *d*.

efg are the friction-rollers, placed, the larger one, *e*, directly above the axle-journal, and the two smaller rollers, *fg*, at opposite sides of the journal, with their axis slightly above the cen-

ter of the axle, so that the axle is centered between the rollers. The rollers are loose upon spindles *e'*, *f'*, and *g'*, respectively. The spindles have bearings in the front of box A and abut against the plate *b*, and the rear plate, *c*, is formed with recesses *h*, that receive the rear ends of the spindles. In the back plate are set-screws *t*, taking against the ends of the spindles, for use in setting them up tightly.

The opening in the stuffing-box D for the axle is eccentric, so that the axle bears on the box only at the lower side of the opening, as seen most clearly in Fig. 4. The opening in partition *d* is also eccentric, to prevent contact of the shoulder *i* on the axle with the partition, except at the lower side. The box D contains suitable packing, that is surrounded by a lapped circular band, *k*, of flexible or spring metal, (shown in Fig. 5 most clearly;) and the gland of the box is provided with set-screws *n*, taking upon the band *k*, so that the band can be compressed and the packing made as tight as necessary. With these packing devices the box can be made dust and oil tight.

The lubricating devices are as follows: The hub of the upper friction-roller, *e*, is formed to project over the oil-chamber *B'*, and the projecting portion is made as a toothed wheel, *m*. In the oil-chamber is a flanged disk or wheel, *o*, sustained on a stud, *p*, that projects from front plate, *b*; and around the wheels *m o* is a chain, *q*, provided with buckets or knobs *r*. The chain being moved by the revolution of friction-roller *e*, the buckets carry the oil up from the chamber *B'* to the roller. This insures a continuous supply of lubricant to the bearings of the roller.

It will be seen that the construction shown provides for the convenient access to and removal of the anti-friction rollers and other parts contained in the box. The rollers steady the journal and prevent any lateral or oscillating movement. The box being air-tight, dust cannot enter nor oil escape.

I prefer to place at each side of the packing beveled washers *u*, (shown in Fig. 2,) which cover the openings in the box and gland and prevent the packing from entering.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The anti-friction roller *e*, provided with toothed wheel *m*, the loose wheel *o*, fitted in the oil-compartment, and the chain or band *q*, substantially as shown and described, in combination with the box A, for operation as specified.
2. The combination, with the box A and the axle C, of the friction-rollers *e f g*, placed loosely upon the spindles *e' f' g'*, having bearings in the front and rear plates of the said box, and the set-screws *t*, substantially as and for the purpose set forth.
3. The combination, with the box A, provided with partition *d*, and the axle C, provided with the shoulder *i*, of the stuffing-box D, the lapped circular flexible metal band *k*, the gland *l*, and the set-screw *n*, substantially as and for the purpose set forth.
4. The anti-friction roller *e*, provided at one end with a projecting gear-wheel, *m*, for receiving and giving motion to a lubricating chain or band, substantially as described.

CHARLES E. CANDEE.

Witnesses:

GEO. D. WALKER,
C. SEDGWICK.