

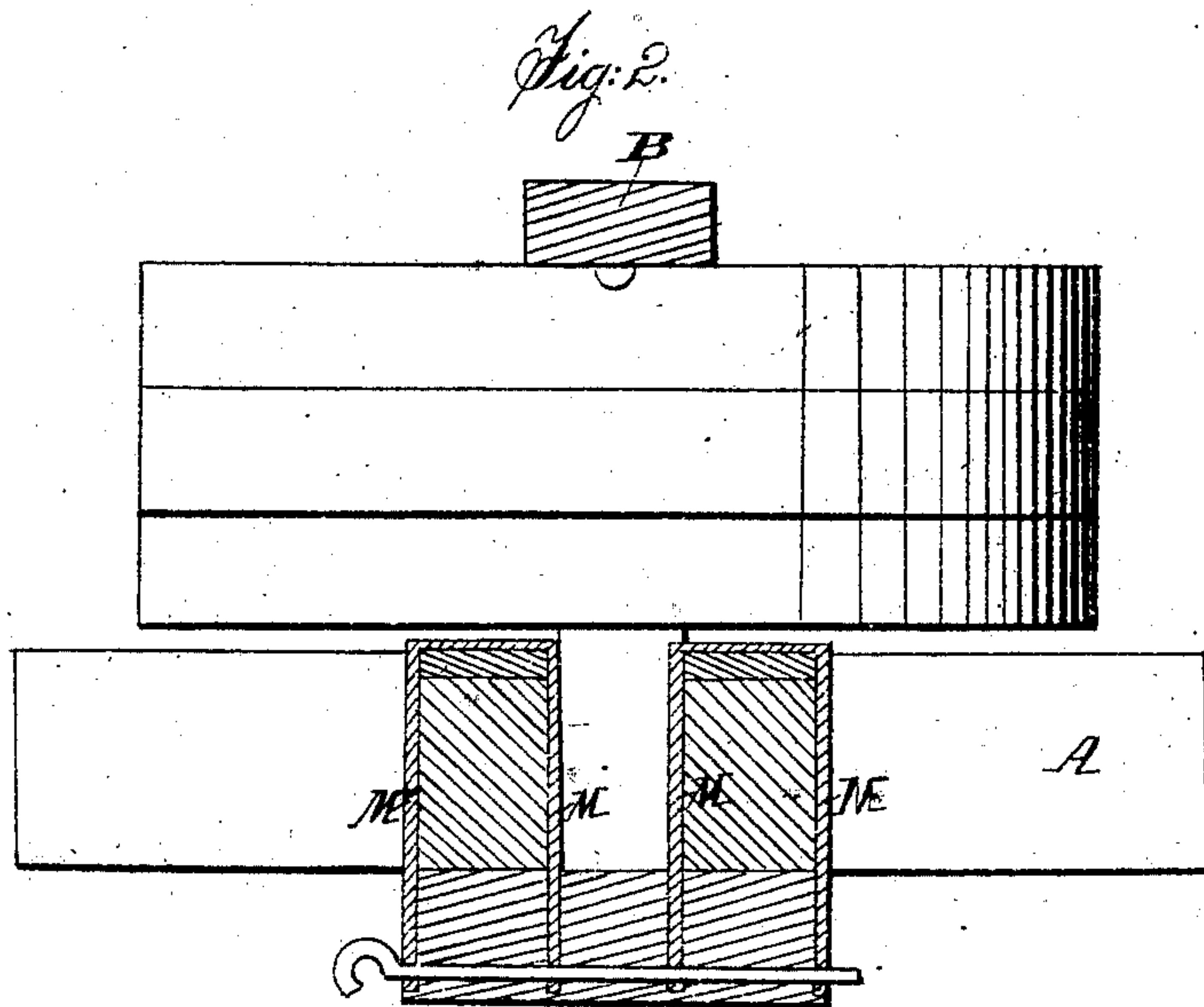
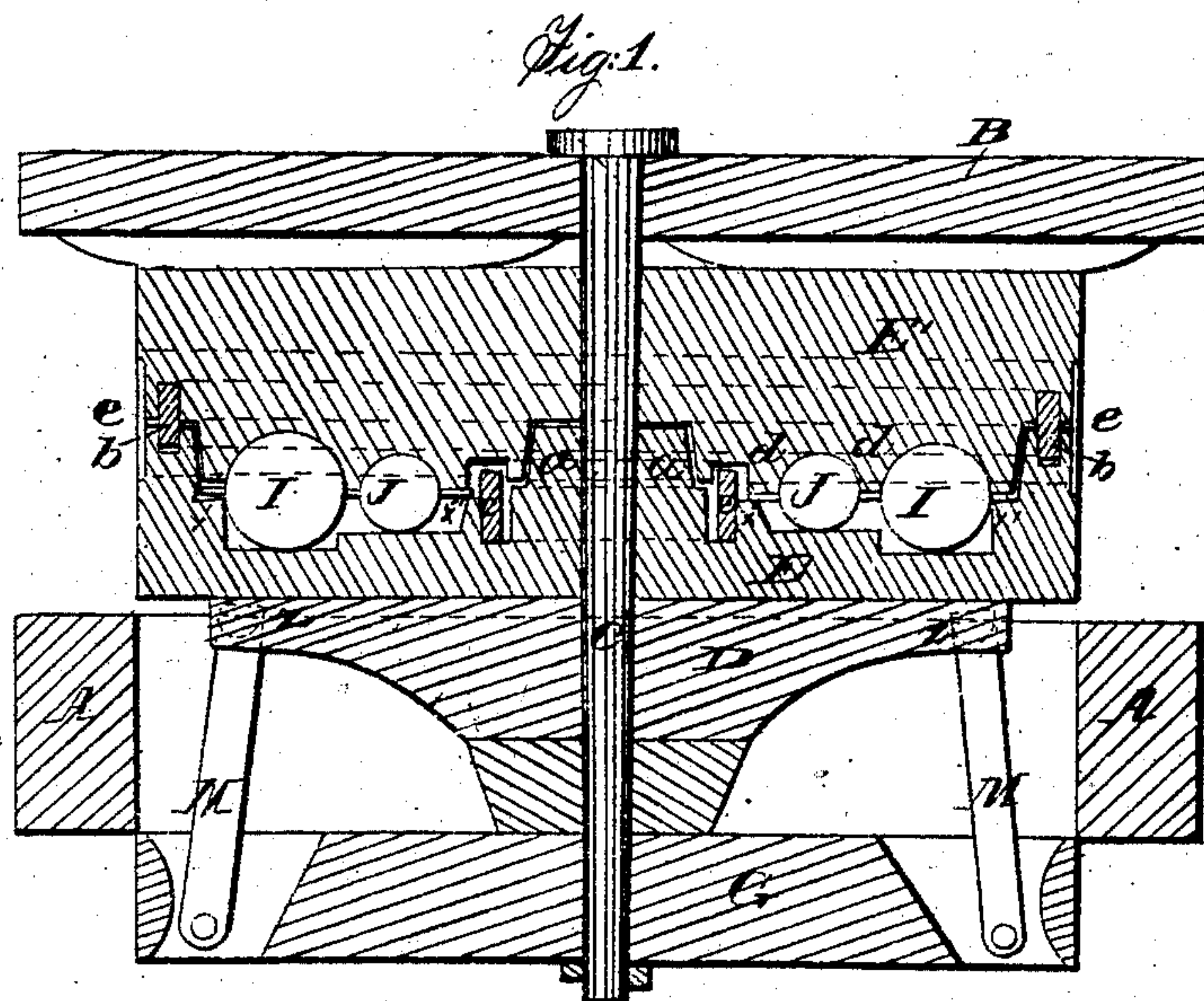
D. R. PRATT.

2 Sheets—Sheet 1.

Car Truck.

No. 30,547.

Patented Oct. 30. 1860.



Witnesses:

C. M. Alexander

A. A. Yeaman

Inventor:

Daniel R. Pratt

D. R. PRATT.

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Fig. 4

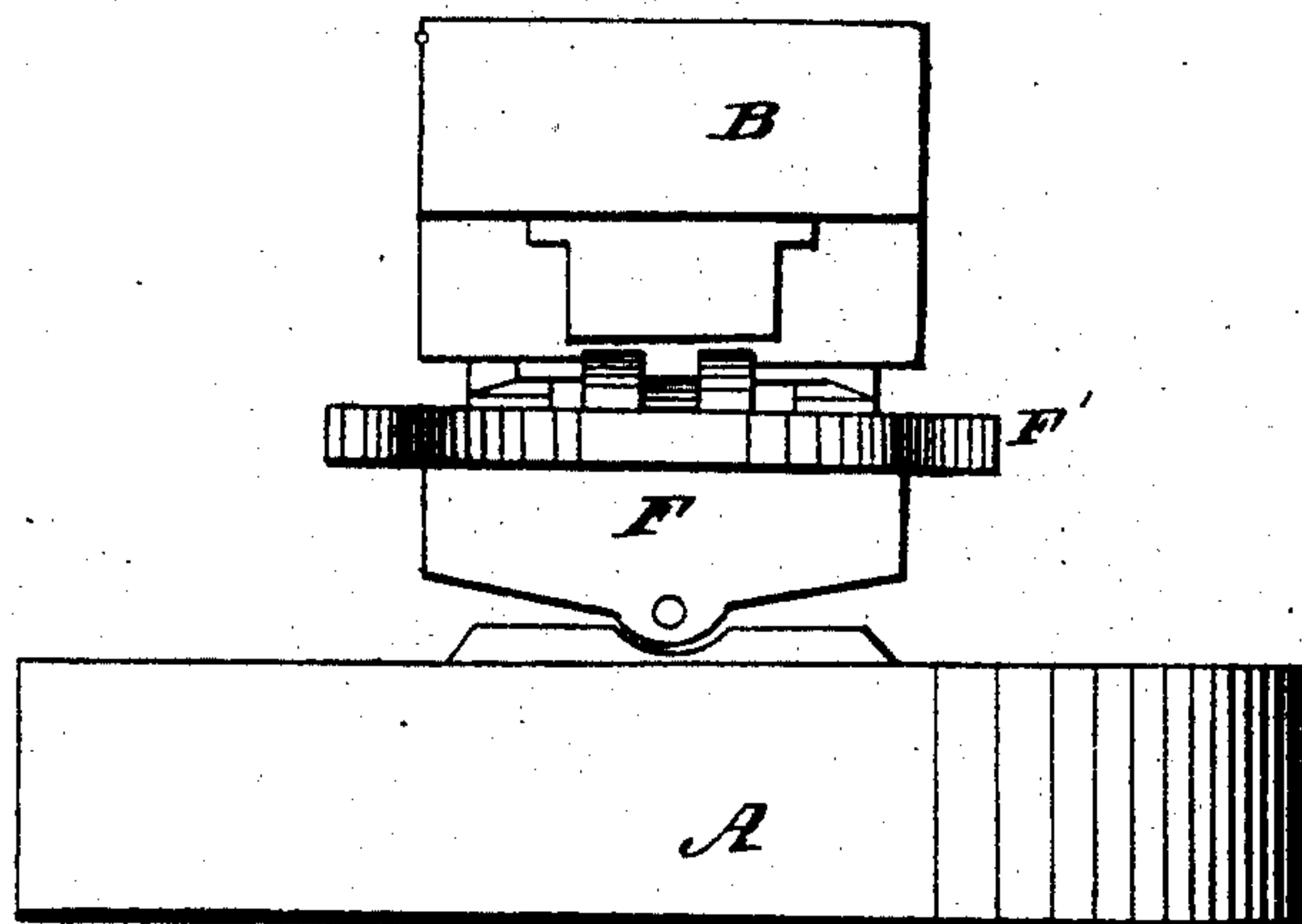
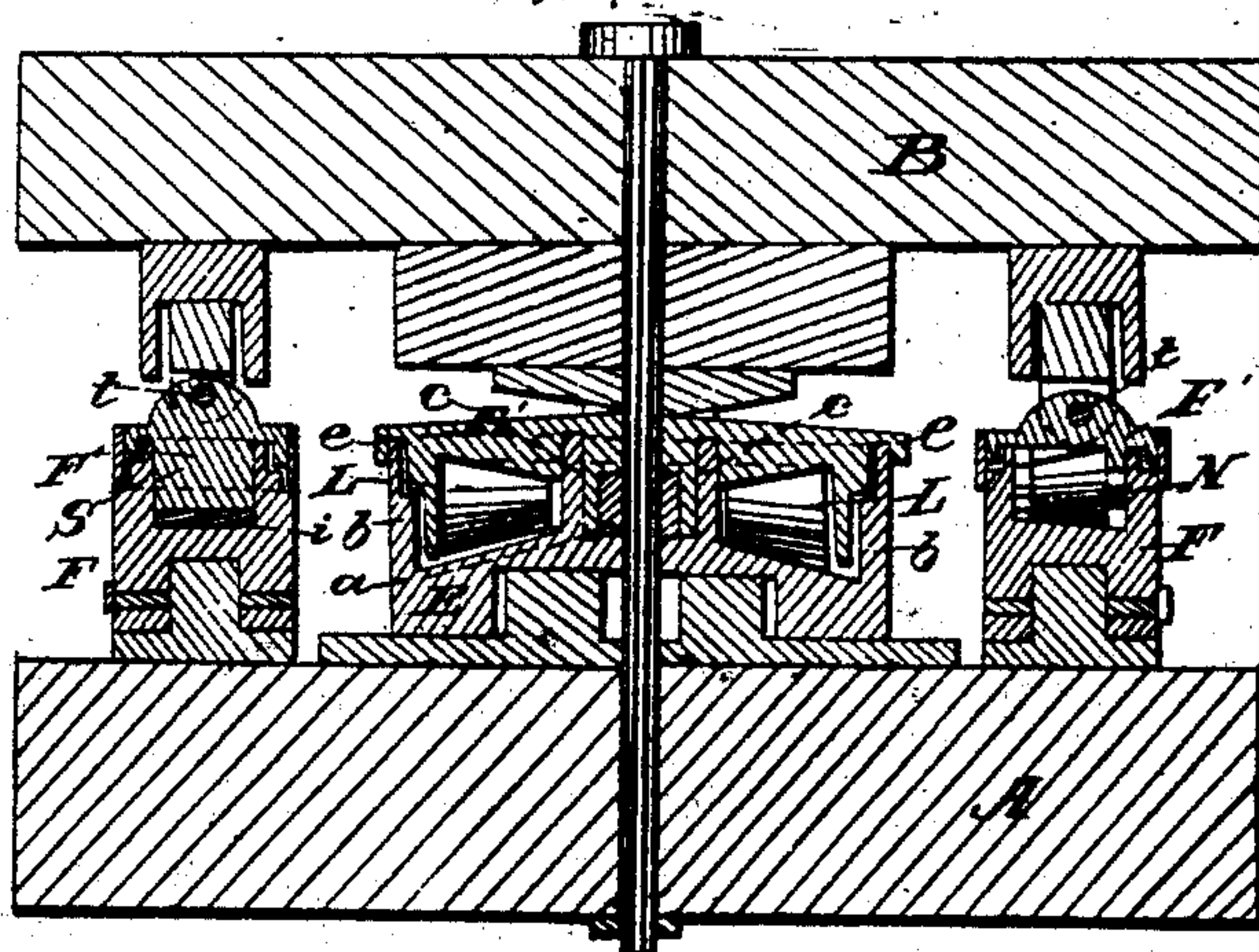


Fig. 3



Witnesses:

L. M. Alexander

A. A. Yeatman

Inventor:

Daniel R. Pratt



# UNITED STATES PATENT OFFICE.

DANIEL R. PRATT, OF WORCESTER, MASSACHUSETTS.

## BEARING FOR RAILROAD-CARS.

Specification of Letters Patent No. 30,547, dated October 30, 1860.

*To all whom it may concern:*

Be it known that I, DANIEL R. PRATT, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in the Construction of Inside and Outside Bearings for Railroad-Carriages; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in constructing and arranging the bearings substantially in the manner hereinafter described and shown.

In the annexed drawings I have represented several modifications of my plan of constructing bearings.

In the several figures A, is the car truck and B, represents the transom to which the bottom of the car is attached or secured.

E, E' represent the center plates or bearings, E, being the lower, and E', the upper halves of said plates.

In Figure 1, the lower portion E, of the center plate is secured to a tongue D, which tongue rests upon the swaying bed, G. The bed G, is suspended to the car truck by means of metallic straps or loops, M, M. The loops, (M) bear upon the truck timber at z, z, and allow the bed G, to sway or vibrate, when necessary.

The lower part of the center plate in Fig. 1, is provided with two annular beds or tracks upon which the balls, I, and J, rest and move. These balls are of different sizes as shown, the larger being nearer the periphery of the plate and the smaller near the center in order to suit them to the difference of motion between the center and circumference of the plate. This portion of the plate is also provided with a collar, a, which surround the king bolt, C, with a flange, c, which is on the inside of the balls, and with a flange b, which is outside of the balls, as shown in the figure. The portion of the plate just spoken of is provided with ledges, as shown at x, x', and x''.

The upper portion of the plate (E') is provided with irregularities to correspond with the lower structure, or the structure of the lower plate. It has two annular, concave grooves, which fit over the upper halves of the balls, J and I, and it also has open-

ings or grooves to receive the annular flanges c, and b, and the collar a.

The flanges, c, and b, may be made of flexible material or not as may be thought best.

e, e, represent a flexible or other band which is secured to the top portion of the plate, and which covers and breaks the joint between the upper and lower portions of said plate.

d, d, represent an annular disk with openings cut in it to admit the balls J, I. This disk rests upon the ledges x', x'', of the lower portion of the plate, and it serves as a guide and holder for the balls. The balls are prevented by this plate from coming together, or from approaching or receding from the center of the plate. It will appear very evident from this arrangement that it will be almost an impossibility for any dirt, or dust, to enter the center plate E'. It is first stopped by the flexible band e, e, and then by the flange b, near the periphery, and it is stopped near the center by the collar a, and the flange c, as well as the disk, d, d, in both places, before it can reach the tracks or beds upon which the balls run. These tracks or beds may be filled with oil or any other lubricating substance.

When the weight of the car comes upon the transom B, an adjustable and easy bearing is made for it upon the rollers J, and I.

Fig. 3, is a modification of the plan just described, showing instead of one center bearing—one center and two outside bearings. In this figure E, and E', represent the two portions of the center plate. Upon the lower portion are seen the collar a and annular flanges b, and c, which corresponds with those described and seen in Fig. 1. The bottom of this portion of the plate in this figure is beveled as shown and upon it are situated or placed a series of conical rollers L, L. E', represents the top portion of the plate and is constructed in the manner represented in the figure—having a beveled surface which rests upon the rollers and being provided with grooves into which the flanges upon the upper plate enter, and also with a flange e, which corresponds with that seen and marked the same in Fig. 1. The same difficulty to the entrance of dust &c. is seen in the construction of this plate. The outside bearings in this Fig. 3, are two quadrantal boxes, F, F, with tops F', F', the



boxes and the tops being constructed in the manner shown for the purpose of excluding dust and dirt—the one being provided with flanges and the other with grooves into which the flanges fit, to make joints around which dust and dirt will not be able to pass. A tongue *s*, is represented in one of these boxes, attached to the top, and upon the bottom of this tongue is seen a piece of steel *i*,—this steel rests in the bottom of the box and the bearing is upon it, or it forms the bearing. In the other box is seen, in place of the tongue, a roller *N*, which works between supports upon the top *F'*. This roller rests in the bottom of the box and the bearing is upon it. Two modes are here represented,—either of which I may use. The boxes *F*, *F'*, and the plate *E*, may be secured upon the truck so that they will rock, having a compensating motion as shown in Fig. 4, or their bottoms may be flat so that they will rest firmly and solidly upon the truck. The transom *B*, in Fig. 3, is hinged as seen at *t*, *t*.

One great advantage to be derived from this mode of constructing bearings is that dust and dirt will be kept out, and will not be allowed to clog up and fill the bearings. They may be always kept filled with oil or some lubricating substance, without fear of having the oil clotted and filled with dust &c.

When railroad cars are turning a curve, the forward wheels strike first and serve as a guide to the car body and the rear truck—and in every such case it is very essential that the bearings should act freely and easily—for if said bearings are hard and rigid by reason of great friction and the weight upon the car or any other cause, the tendency of the forward wheel is to climb

or run upon the rail and leave the track, or if it does not leave the track it rubs or cuts the rail and the damage to the rail and flanges of the wheels is great. By keeping the bearings free from dust &c. and making them to turn and work readily and easily the objection just spoken of is obviated for the forward wheels turn, as soon as they feel the touch of the outer rail on the curve, and serve to guide the car body and the rear truck.

With this improvement a locomotive can draw a much larger load than it can with the old plan of bearings for the cars can adjust themselves to the line of draft and avoid that large amount of friction consequent upon the rubbing of the wheels against the rail in turning curves. The compensating motion when used allows the car body to find a level bearing upon the truck without strain, and adds greatly to the safety of cars and passengers when turning curves.

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

1. The employment of the inclosed circular plates *E*, *E'*, or the quadrantal boxes *F*, *F'*, constructed and used as and for the purpose herein specified.

2. In combination with the inclosed plates and boxes, the balls and rollers *I*, and *L*, as and for the purpose specified.

3. The use of the division plate *d*, in the manner and for the purpose herein specified.

DANIEL R. PRATT.

Witnesses:

C. U. ALEXANDER,  
A. I. HARDIN.