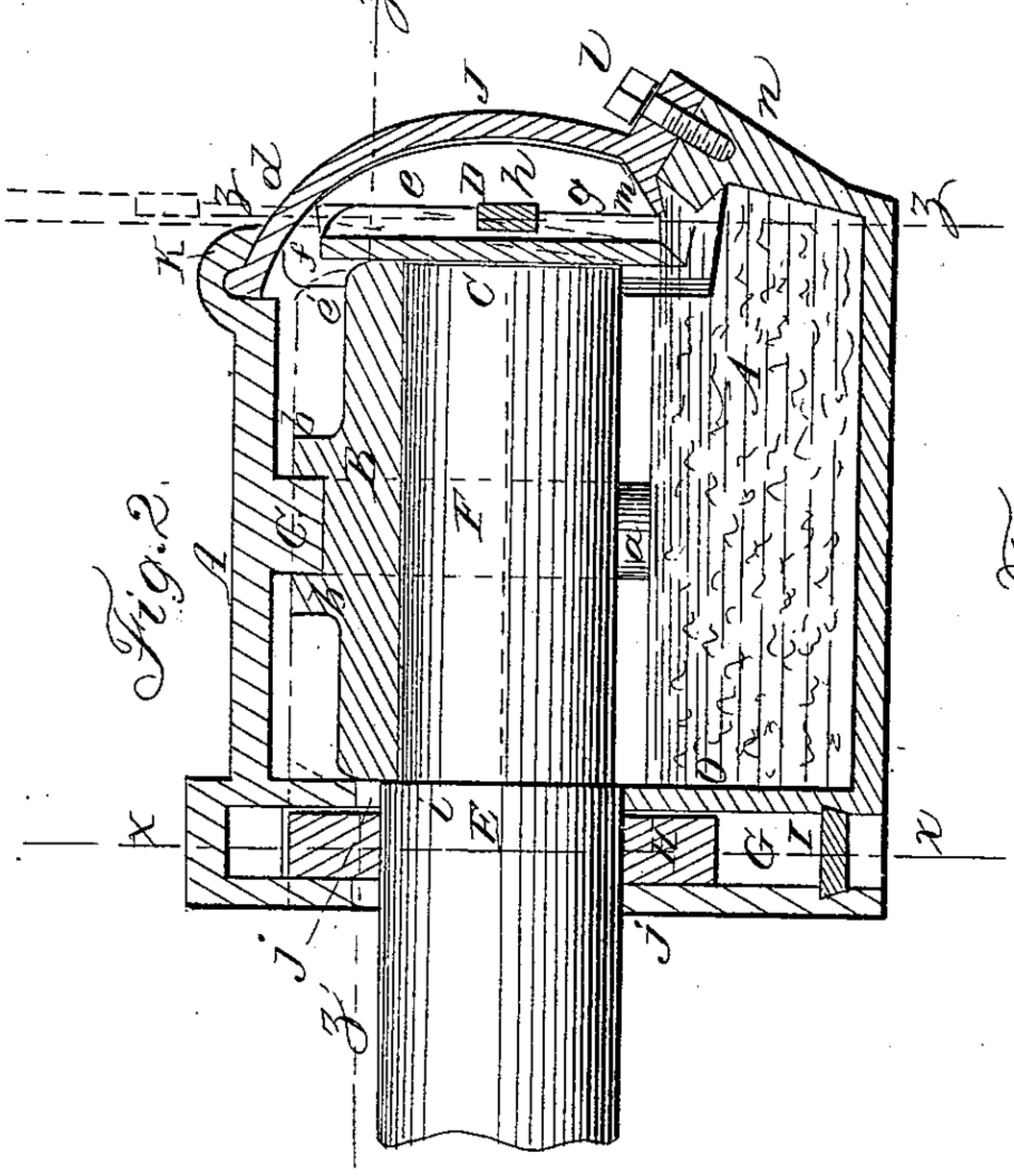
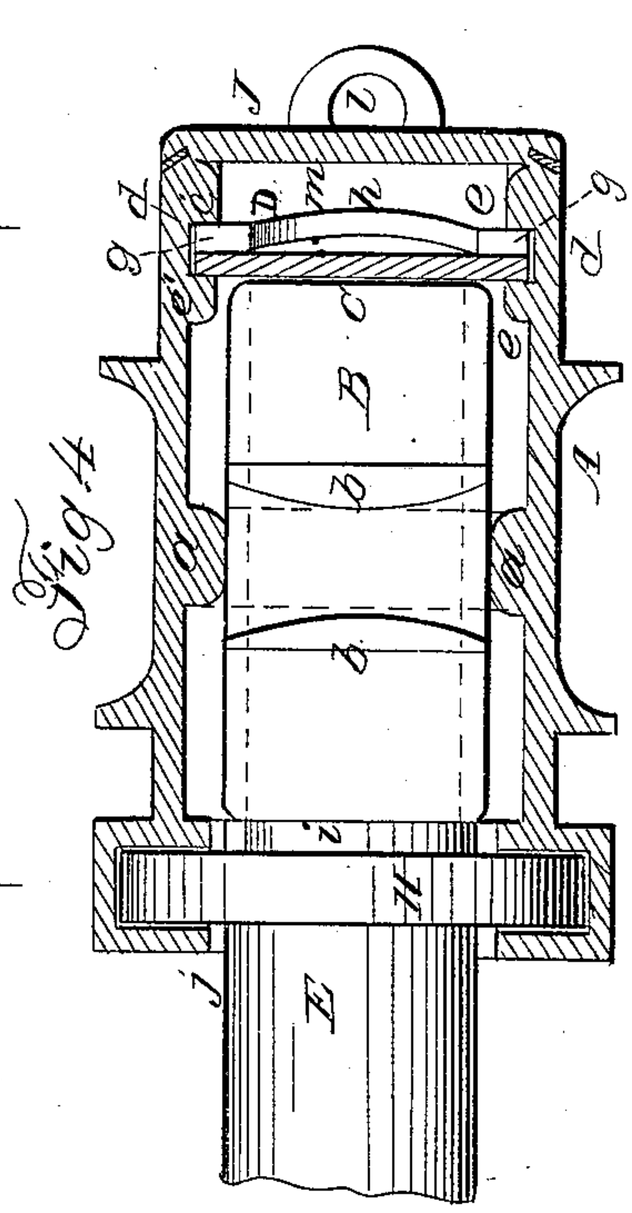
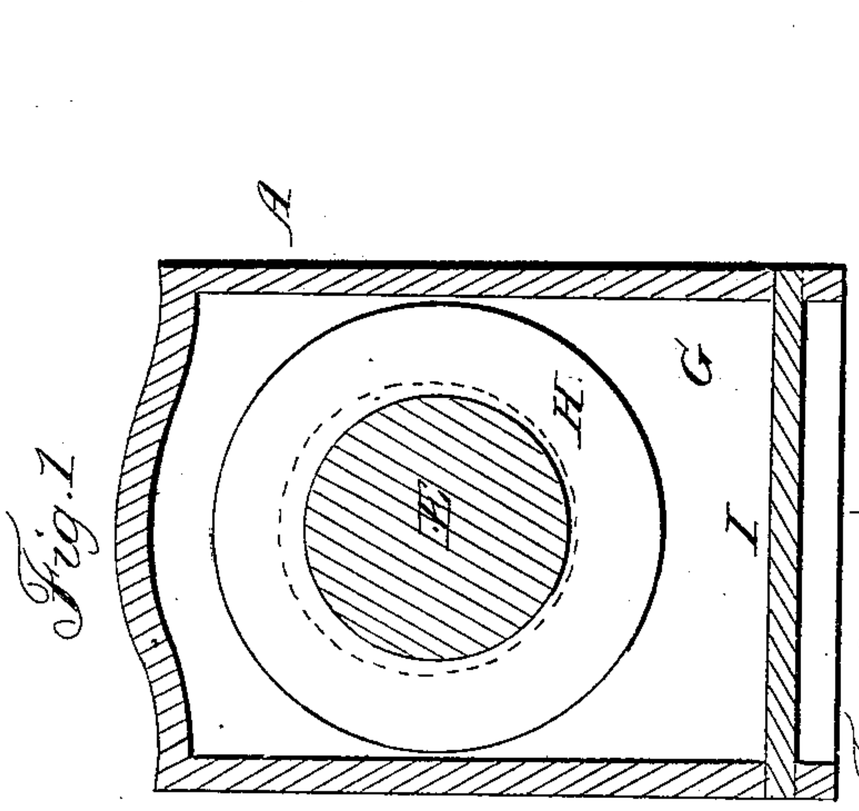
M. QUEEN.

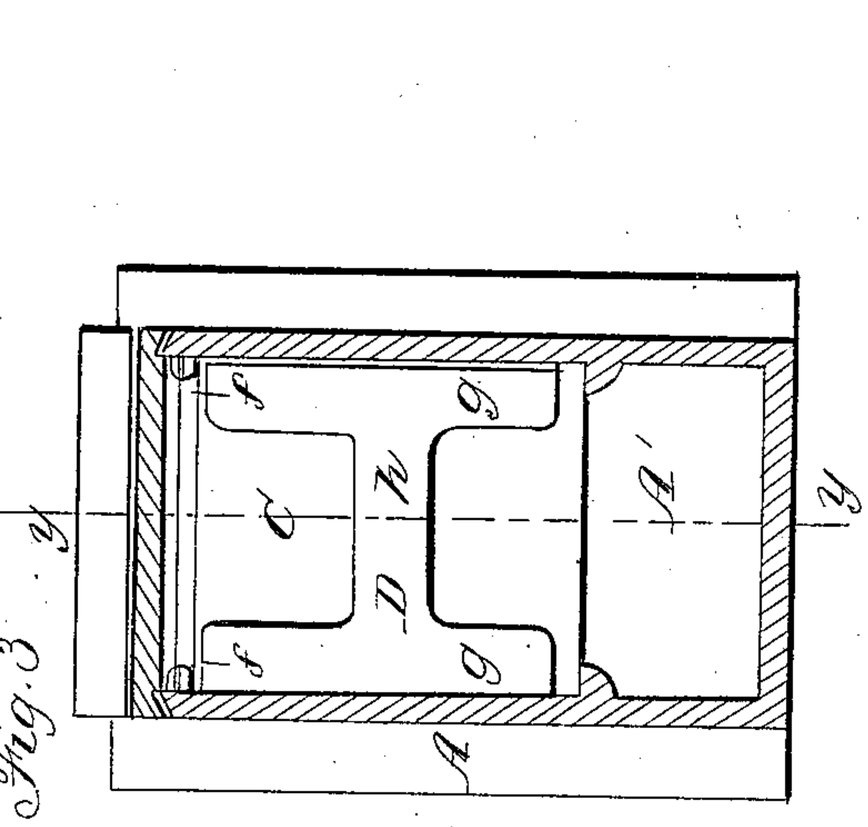
Car-Axle Box.

No. 29,817. Patented Aug. 28, 1860.









Witnesses;
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UNITED STATES PATENT OFFICE.

MONTGOMERY QUEEN, OF BROOKLYN, NEW YORK.

JOURNAL-BOX.

Specification of Letters Patent No. 29,817, dated August 28, 1860.

To all whom it may concern:

Be it known that I, MONTGOMERY QUEEN, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Boxes for Car-Axles Designed for City-Railroad Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my invention taken in the line *x*, *x*, Fig. 2. Fig. 2 a longitudinal central section of the same taken in the line *y*, *y*, Fig. 3. Fig. 3 a vertical section of the same taken in the line *z*, *z*, Fig. 2. Fig. 4 a horizontal section of the same taken in the line *z'*, *z'*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents an axle-box of cast metal and of much the usual form, and B, is a step or bearing fitted within the box between two vertical convex side bearings *a*, *a*, as shown at Fig. 4, the upper surface of the step or bearing having two transverse ledges *b*, *b*, on it the inner sides of which are of convex form and sufficiently far apart to receive a pendent projection *c*, with parallel sides which is at the under side of the top plate of the box A, see Fig. 2.

At the front part of the box A, at its inner sides there are vertical grooves *d*, *d*, which are formed by casting ledges or projections *e*, *e'*, at the inner sides of the box. The innermost ledges *e'*, have their face or outer sides vertical but the face sides of the ledges *e*, are inclined so as to cause the grooves *d*, to be of taper form wider at the top than at the bottom. The upper ends of the ledges *e'*, are provided each with a shoulder *f*, which projects horizontally over the grooves a certain distance as shown clearly in Figs. 2 and 3.

C is a metal plate which may be of steel so as to be elastic or of chilled cast-iron. This plate is fitted in the grooves *d*, *d*, and has its upper edge placed under the shoulders *f*, and secured in such position by means of a wedge or key D, of H-form as shown in Fig. 3. This wedge or key D, is interposed between the plate C, and the ledges *e*, and its sides *g*, are of taper or wedge-form and in fact constitute the key or wedge the traverse piece *h*, merely serving to connect the two sides together as shown clearly in Fig. 3.

E, is an axle and F, its journal on which the step or bearing B, rests. The outer end of the journal F, is in contact with plate C, and the length of the journal is determined by a shoulder *i*, which is in contact with the inner end of the step or bearing as shown clearly in Fig. 2.

G, is a dust chamber at the rear end of the box A. This chamber receives a collar H, of gutta percha, india rubber or other suitable substance said collar being fitted on the axle E, as shown clearly in Figs. 1, 2, and 4. This collar is made to fit snugly on the axle and within the chamber G, so as to prevent the admission of dust through the elliptical opening *j*, and the lower part of the chamber G, is provided with a bottom I, which is so fitted in the chamber that it may be removed at will or pleasure to admit of the placing of the dust collar within the dust chamber. A simple way of arranging this bottom I, is to have it provided with dovetail sides fitted in corresponding recesses or grooves in the inner sides of the dust chamber as shown in Fig. 2.

To the front end of the box A, the usual door J, is secured by a flanch *k*, at its upper end and a screw *l*, at its lower end. To the inner side of the lower part of the door J, there is a flanch or lip *m*, which extends the whole width of the door and projects inward nearly to the lower end of the plate C, as shown in Fig. 2.

The lower part A', of the box A, below the journal F, is the oil chamber and its front end piece *n*, is somewhat lower than its back end piece *o*, as indicated by the level of the oil, shown in red in Fig. 2. The oil chamber A', is provided with cotton waste or other suitable absorbent material to retain the oil or lubricating substance.

The plate C, serves as a check to prevent lateral motion of the step or bearing B, on the journal, the result being obtained in consequence of the plate being in contact with the end of the journal F. The wedge or key D, keeps the plate C, in contact with the end of the journal compensating for wear by settling between the plate and the ledges or projections *e*, and the shoulders *f*, prevent the plate C, from rising or working upward in its grooves *d*, *d*. The shoulder *i*, at the inner end of the journal F, prevents the oil

following the journal out at the back end of the box A, and in consequence of having the front end piece *n*, of the oil chamber a trifle lower than the back end piece *o*, the attendant or operator in supplying the chamber with oil will not overflow it behind the supply being stopped at once when the oil has attained the level with the upper end of *n*. This is important, for when the back end piece *o*, is lower than the front end piece, oil frequently escapes over the back *o*, into the dust chamber an unnecessary supply being poured into the oil chamber in consequence of the attendant not knowing when the level of the oil reaches the upper end of the back piece. The lip *m*, at the lower end of the door J, prevents cotton waste being carried up between the door and the plate C, a contingency which would often occur by the rotation of the journal F, the latter at its outer end having a tendency to work the cotton waste upward. This working or passing of the cotton waste upward between the plate C, and door J, if allowed would be attended with the leakage of oil at the bottom of the door, the oil being expressed from the cotton waste by the action of the journal on the latter. The lip *m*, effectually prevents such contingency. The bottom I, of the dust chamber in connection with the collar H, prevents dust and mud passing into the lower end of the dust chamber and thence into the box A. The fitting of the step or bearing B, between the side bearings *a*, *a*, and the fitting of the pendent ledge or projection *c*, of the box A, between the ledges *b*, *b*, of the step or bearing admits of a lateral adjusting movement of the latter so that it may conform in a certain degree to any irregular movement of the axle. The convex ledges permit a limited circular play of the axle box, so that it conforms to the axle, in passing curves.

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

1. The combination of the self adjusting key D, with the check plate C, as and for the purposes set forth and described.

2. The employment of the lip *m*, in combination with the end piece *n*, journal F, and check plate C, as and for the purposes herein set forth and described.

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