

C. H. SHATTUCK.
Car-Axle Boxes.

No. 150,720.

Patented May 12, 1874.

Fig 1.

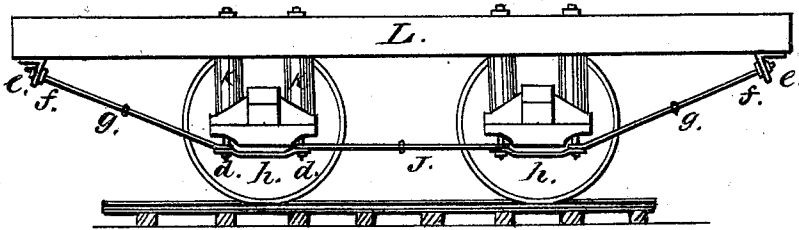


Fig 2.

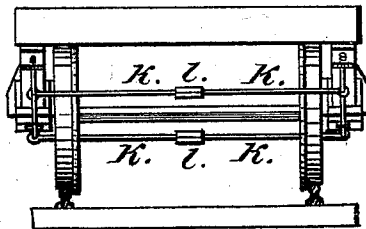
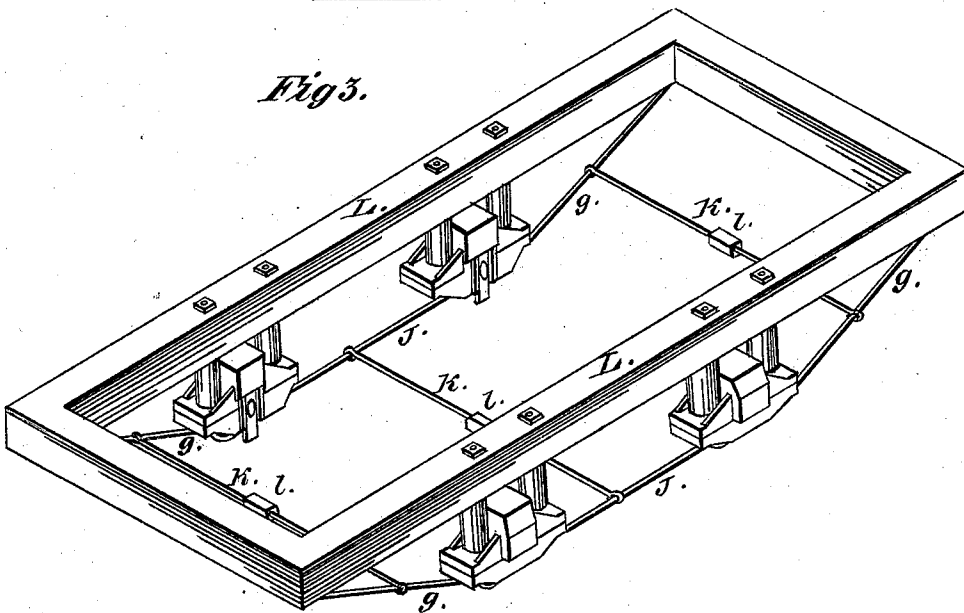


Fig 3.



Witnesses.

Thomas Clarke
J. F. Raymond

Inventor.

C. H. Shattuck.

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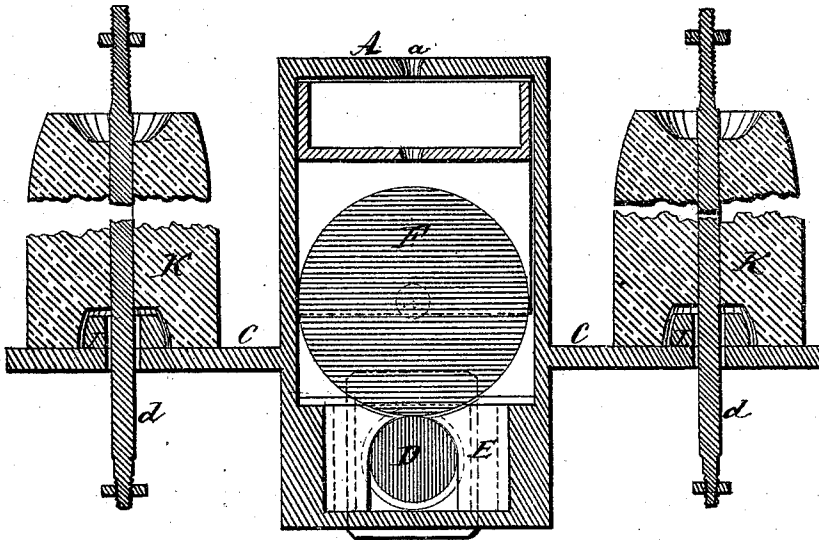


Fig2.

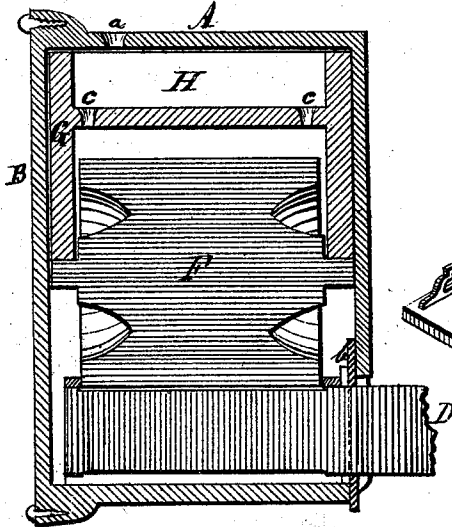
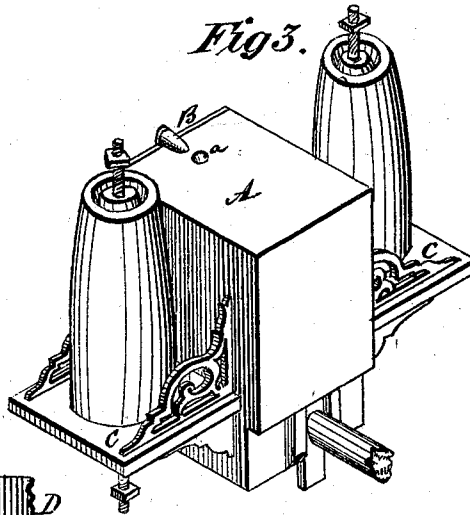


Fig3.



Witnesses.

Shoshraufflacker
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Inventor:

C. H. Shattuck

UNITED STATES PATENT OFFICE.

CHARLES H. SHATTUCK, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **150,720**, dated May 12, 1874; application filed December 18, 1873.

To all whom it may concern:

Be it known that I, CHARLES H. SHATTUCK, of Boston, Massachusetts, have invented a Car-Axle Box, of which the following is a specification:

This invention consists in, first, arranging a single friction-wheel to bear upon the top of a shouldered and buttoned journal between the shoulder and button, through a slot in the top of a cap fitting close by the sides of the journal, and taking its lateral wear and end thrust, and transmitting it to the case of the box through locks, framing together the cap and case; second, in the arrangement of an oil-reservoir with flanges, for the bearing of the friction-wheel, and a drip over the bearings within the case of the box, and with a feeding-hole over it; third, in the arrangement of springs to tightly fit the spring-bolts, and loosely fit bosses on the saddle, while the bolts loosely fit said bosses; fourth, in attaching the lower ends of such bolts to a truss which braces up the ends of the car, and is braced from lateral motion by cross-rods under the car, and making the spring-bolts of the car by this means the bridges of the truss, thus dispensing with pedestals, and strengthening the car and rendering it stiffer.

This invention is specially intended for horse-cars, and is designed to lessen the draft, increase the comfort of riding with any load, and provide for the swing of the car in turning curves, &c. It may of course be used for other cars.

The design is to give the wheels and box a little play independent of the car, and to reduce friction without destroying the axles by irregular wear.

In the drawings, Sheet 1 contains illustrations of the construction of the box, and the form and arrangement of the springs supporting the car on the saddle. Sheet 2 contains illustrations of the attachment and arrangement of the car with the box and wheels. Sheet 1, Figure 1 is a longitudinal section. Fig. 2 is a cross-section. Fig. 3 is a perspective with the springs in place.

A is the case; it has an oil-hole, *a*, in the top plate, and a front plate, B, which is detachable for repairs. A saddle, C, extends on each side of the box for the spring-bed. The

axle D passes through a hole in the lower part of the case A, and has a dust-washer, *b*, fitted over it to close the hole. The axle has a journal turned on it, as shown, with a shoulder and button. The interior of the case A, at the bottom, is larger than the axle, and is made quite thick and heavy, with a vertical mortise in each side, into which drops a tenon on the side of the cap E, or, as is probably better, a tenon on each side to fit a mortise in said cap. The cap E is a block of composition or of iron, with a cylindrical base carried straight down to the bottom to fit the axle, and a shoulder at each end to fit the button and shoulder of the axle, receive its end thrust, and transmit it to the sides of the case through the mortising and tenon described. The top of this cap is cut away, as shown in Fig. 1, to allow of the bearing of the wheel F directly upon the axle. This wheel is much larger than the axle, and revolves more slowly, of course, acting as a friction-wheel. The journals of wheel F rest in notches in the flanges G of the oil-reservoir H, which has two oil-holes, *c c*, over such journals. Oil supplied through hole *a* falls through holes *c c* on the journals of wheel F, and from them drips to the bottom of the case, lubricating the journal and cap. Upon the saddle C are bosses I, pierced with bolt-holes. Springs K rest on these bosses, fitting them loosely. The upper part of these springs is hollowed out, as shown. Bolts *d* pass through the springs, the rubber fitting them tightly, and are attached to the side of the car above. The hole in the saddle and boss is larger than the bolts.

In this arrangement the swing of the car in rounding curves is taken up in the loose connection between the saddle and bolts, and between the saddle and springs. The springs reduced in mass at their ends are sufficient for light loads, and call the central portion into use for heavier ones. This whole arrangement is intended for horse-cars. It is placed on the car as shown in Figs. 1, 2, 3 of Sheet 2. Fig. 1 is a side elevation; Fig. 2, an end elevation; Fig. 3, a perspective.

L is the sill of a car. Bolts *d* pass through it, and the springs and saddle, as already described. My object now is to hold the lower ends of these bolts firmly in position in fixed

relation with the upper ends. This is done, in the ordinary cast-iron pedestal, by the jaws. I arrange a truss, such as is usual in open cars, beneath the sill, but of peculiar construction. Angle-irons *e* at each end of the sill are firmly bolted on. A rod, *g*, having an eye at one end, and a nut, *f*, at the other, is next taken long enough to reach from the angle-iron to the bolt. The bolt passes through the eye, and the nut is set up against the angle-iron. A bridge, *h*, with an eye at each end, fits between the bolts, as shown. Shoulders are made on the eyes to take the thrust of the truss, and the bolts *d* are made with shoulders to fit the eye of rods *g* *h*. Rod *j* extends between the saddles. Rods *g* and *j* are steadied from side to side by rods *k*, which clasp on rods *g* *j*, and are set up to the proper distance by nuts *l*, which may be swivel or right and left nuts, as desired. This gives a truss of great stiffness to support the ends of the car—a great desideratum—every part of which per-

forms a duty of bracing, as well as of attaching the running-gear to the car.

I claim, and desire to secure by Letters Patent—

1. The cap *E* upon the journal *D*, and to rise and fall with said journal within the box *A*, in combination with the friction-roller *F*, as and for the purpose described.
2. The flanged reservoir *G* *H* within the case *A* *B*, in combination with the wheel *F*, substantially as described.
3. The spring *K*, having a central cavity of such size as to tightly embrace bolts *d*, and to loosely surround boss *I*, in combination with bolts *d* and saddle *C*, substantially as described.
4. The truss *e* *f* *g* *j* *h* *k*, combined with bolts *d*, springs *K*, and saddle *C*, substantially as described.

C. H. SHATTUCK.

Witnesses:

THOS. WM. CLARKE,
F. F. RAYMOND.