

Car-Axle Box.

No. 19,741.

Patented Mar. 23, 1858.

Fig. 1.

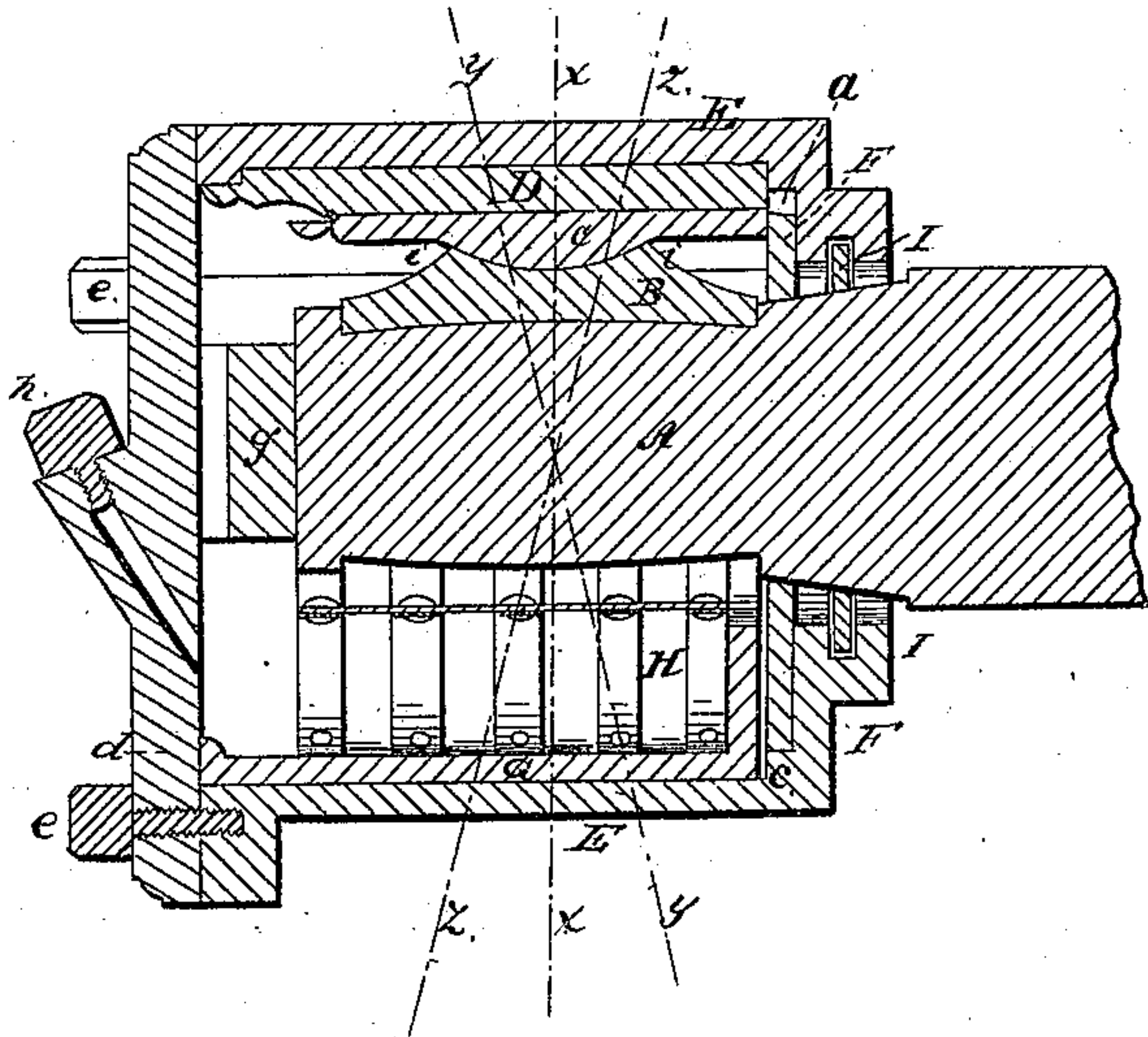


Fig. 2.

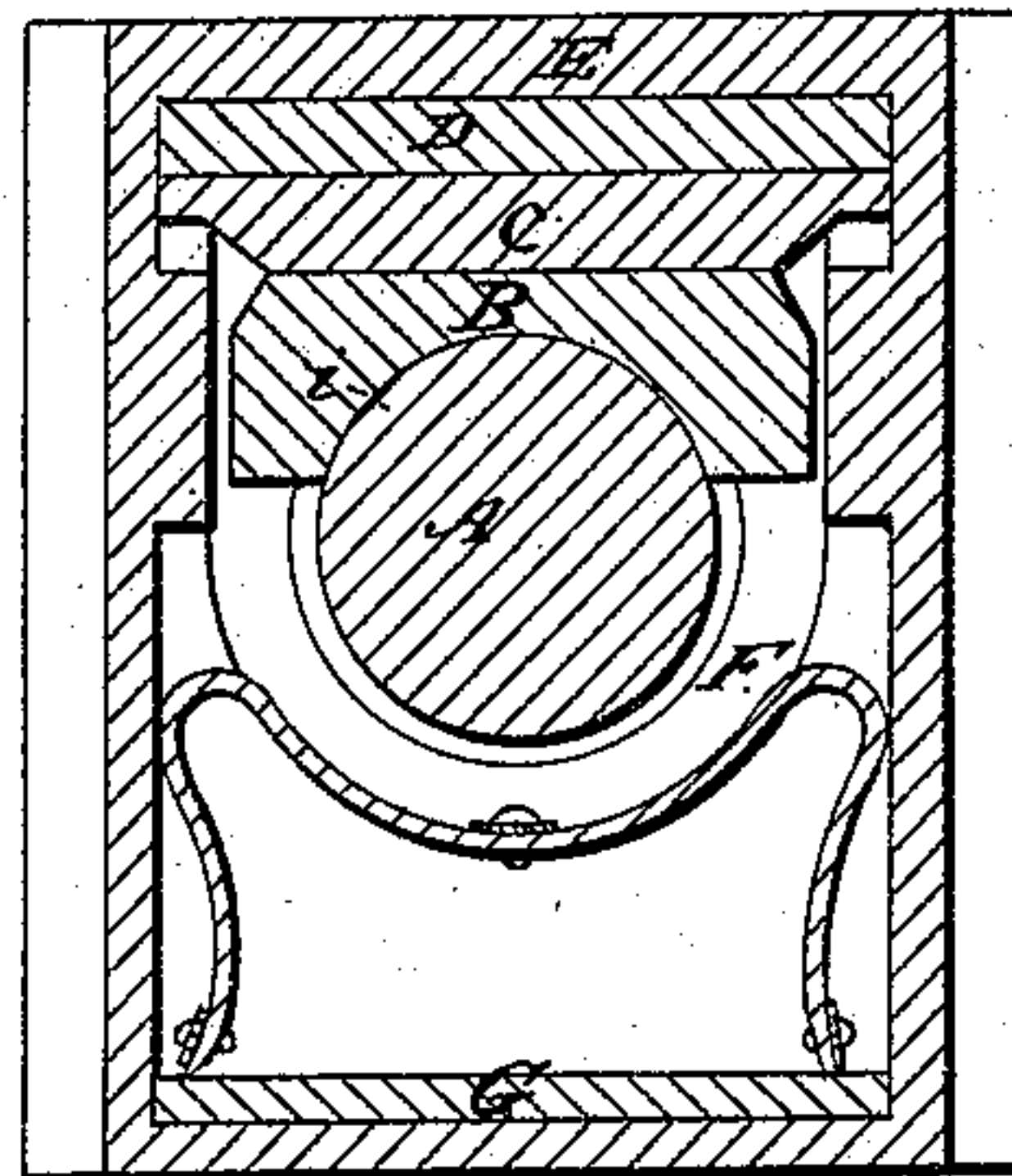


Fig. 3.

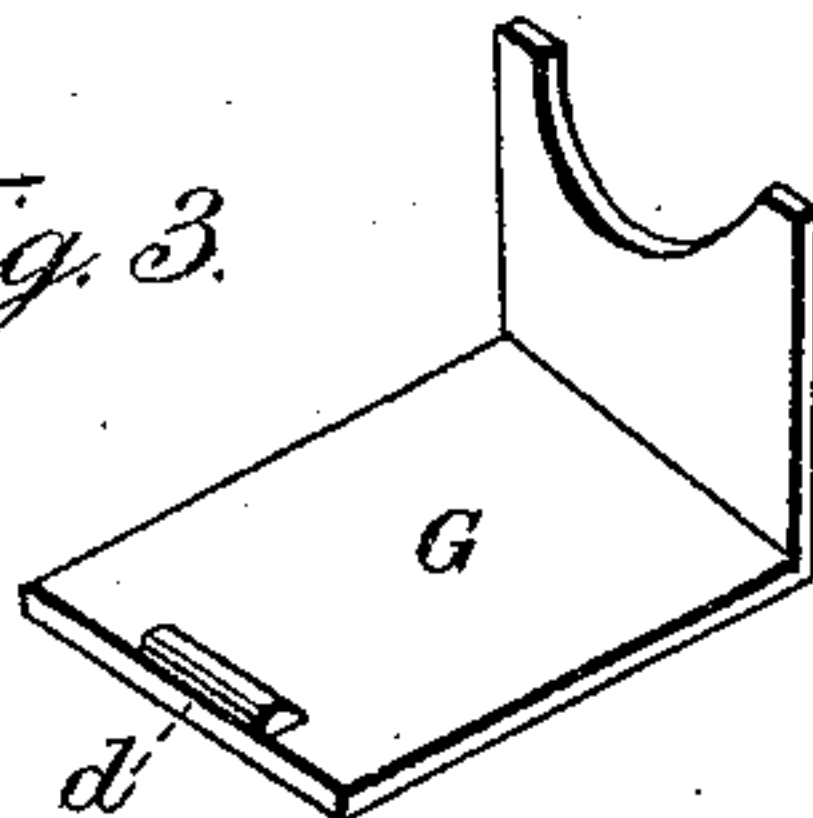


Fig. 4.

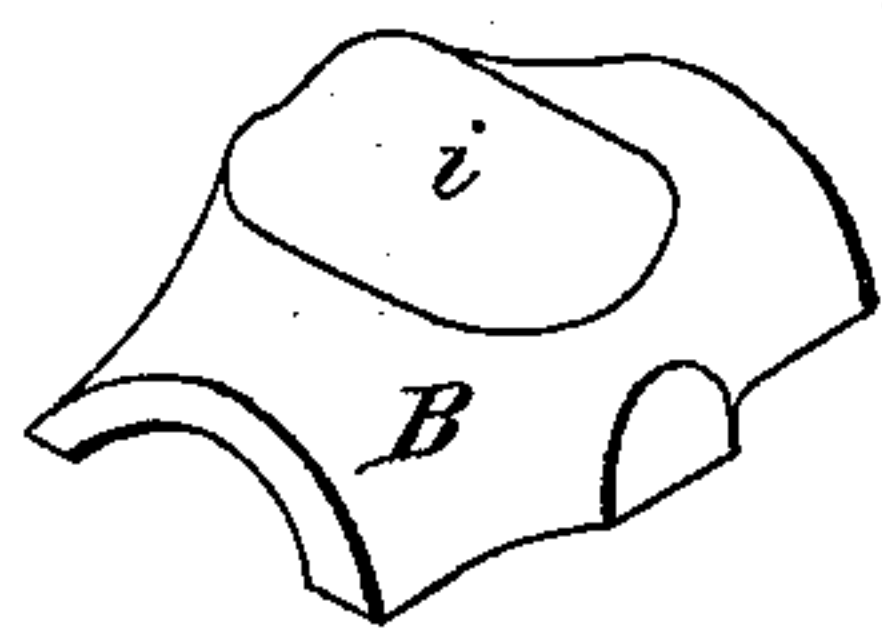


Fig. 5.

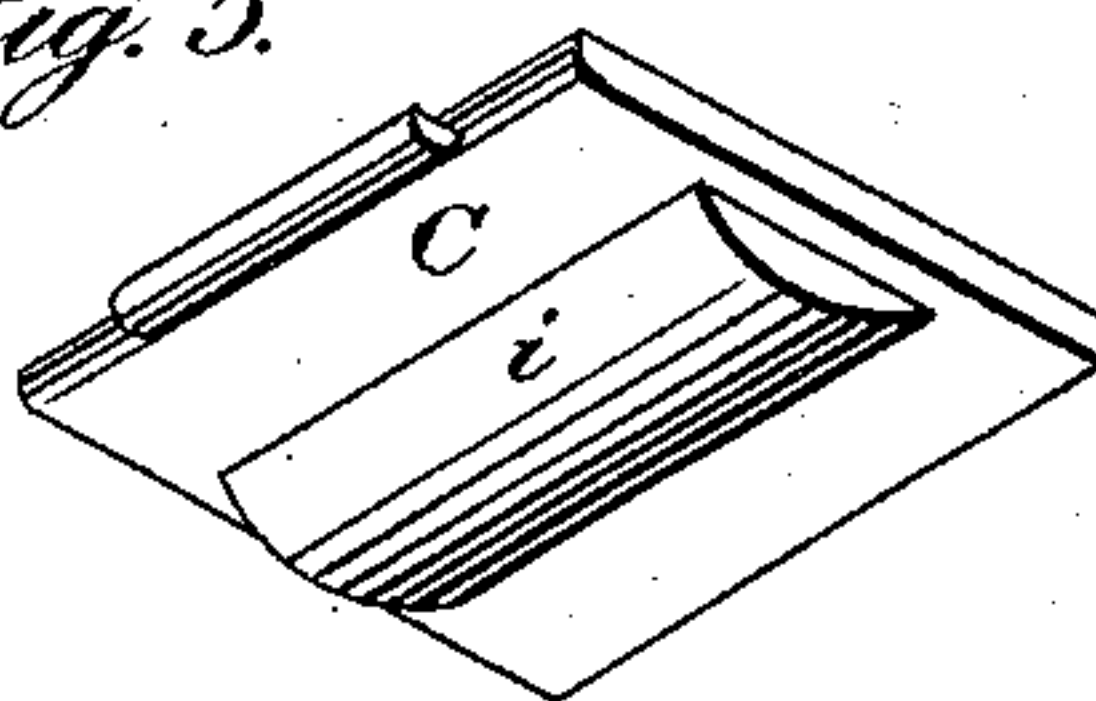


Fig. 6.

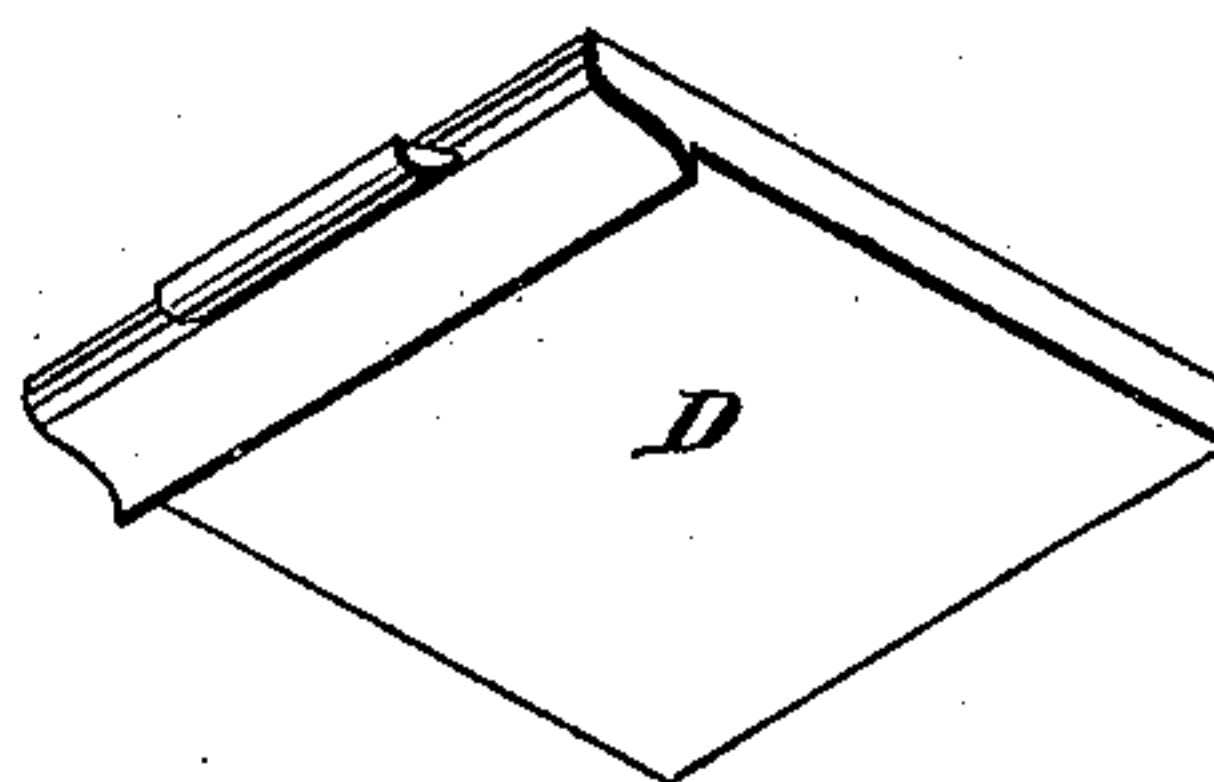


Fig. 7.

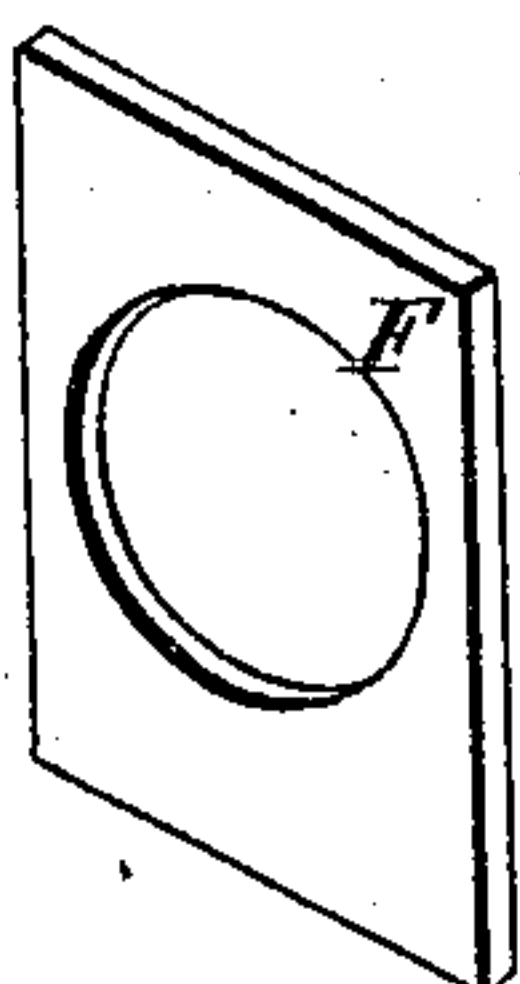


Fig. 8.

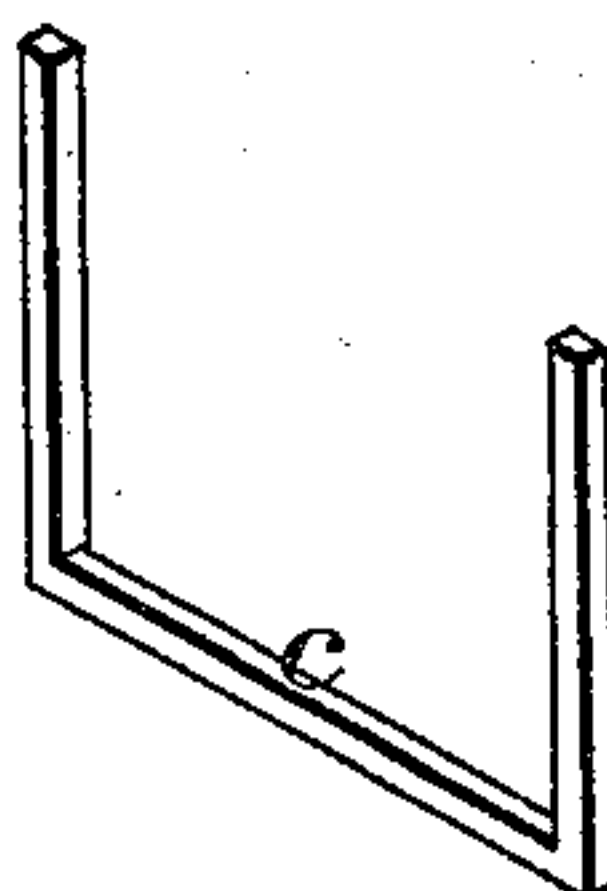
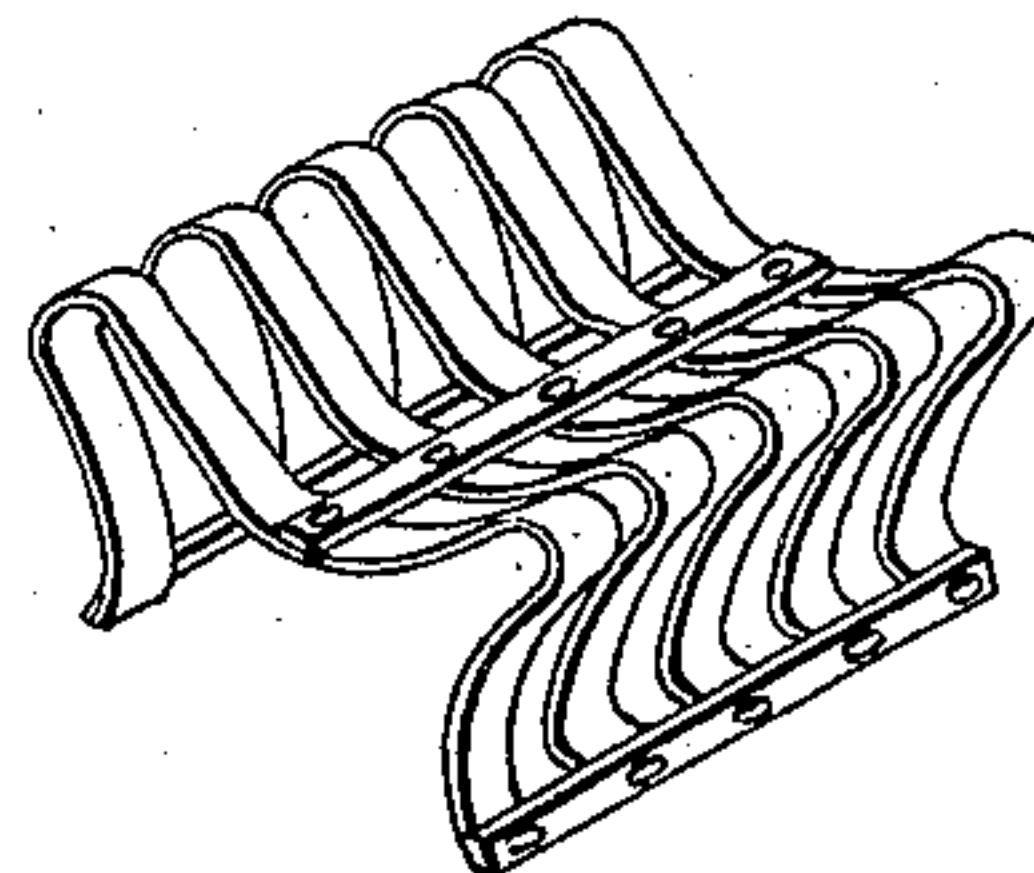


Fig. 9.



UNITED STATES PATENT OFFICE.

R. N. ALLEN, OF CLEVELAND, OHIO.

IMPROVEMENT IN RAILROAD-CAR AXLE-BOXES.

Specification forming part of Letters Patent No. 19,741, dated March 23, 1858.

To all whom it may concern:

Be it known that I, R. N. ALLEN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Railroad-Car Axle-Bearings; and I do hereby declare the following to be a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section; Fig. 2, a transverse vertical section; and Figs. 3, 4, 5, 6, 7, 8, and 9, detached parts, which will be hereinafter described.

A, Figs. 1 and 2, represents the axle of the car-wheel; B, the box, which rests upon the upper side of the journal of the axle. This box is also shown in Fig. 4.

C represents a wedge or key that rests upon the box B. This wedge or key is also shown in Fig. 5, the under side being seen.

D is a wedge or key that fills the space between the wedge C and outer case. This is also shown in Fig. 6. The outer case E is made in the usual form and properly attached to the pedestal of the truck of the car in the usual manner. The front end of this case is covered by a plate that is secured to the case by screw-bolts, so that by removing this front plate and relieving the pressure of the car the box B, the wedges or keys C and D, and other parts can be removed and replaced at pleasure without disturbing the position of the truck or case E. With ordinary boxes it is necessary to detach the pedestal from the car-frame and then remove the journal-box from the axle, in order to inspect or repair the different parts of the box.

In Figs. 1 and 2 there is shown at F a self-adjusting leather collar or washer that fits closely upon the back part of the journal of the car-axle. This collar or washer does not reach quite to the top of the outer case, leaving a space *a* of about three-eighths of an inch, so that in the wearing away of the box B this collar or washer moves upward with the axle, and continuing to fit closely around the journal prevents the escape of oil or the admission of dust or sand into the cavity of the case E. This collar or washer F is shown in section in Fig. 7.

For the purpose of preventing the oil from passing behind the collar F, I introduce the

packing *c*. (Shown also in Fig. 8.) The position of this is shown at C, Fig. 1. It runs along the base of the case E and upward upon each side of the collar or washer F, and is pressed firmly against the back part of the case E by means of the slide-partition G. (Shown in section in Fig. 3.)

Fig. 9 represents the siphon-spring. (Shown also at H, Figs. 1 and 2.) Waste cotton thread or wicking is woven into this, by means of which the oil in the case E is carried by capillary attraction to the under surface of the journal A, with which the wick is in contact. At the back part of the case E, where the journal passes into it, as seen at I, Fig. 1, the usual mode of packing is introduced; but as this is stationary in the case, as the box B, upon which the journal rests, wears away the packing I wears also, leaving an open space upon the under side of the journal, through which, in the usual form of construction, the oil passes into the cavity of the case and escapes and dust and dirt enter.

In my improved mode of construction all this difficulty is obviated in the following manner: The slide-partition G, (shown also in Fig. 3,) when placed in its proper position in the case E, is pressed firmly against the elastic leather packing *c*, Fig. 1, (seen also detached in Fig. 8,) by means of the pressure of the front plate of the case E upon the horizontal wing of the slide-partition, as seen at *d*, Fig. 1, the horizontal wing *d'*, Fig. 3, being of such length as to cause said pressure upon the packing *c* when the front plate is brought home to its seat by the screw-bolts *e e*.

A gasket should be introduced between the front plate and case E for the purpose of making the chamber oil-tight. Upon the inside of the front plate there projects a flange *g*, that is nearly in contact with the end of the journal A, as seen in Fig. 1, for the purpose of preventing end chasing of the car-axle. The oil is introduced into the cavity of the case E at the oil-hole *h*, Fig. 1, which hole is kept closed by a screw-plug.

In the construction of railroads it is impossible to avoid inequalities in the track. These inequalities necessarily produce more or less torsion or strain upon the axle in the direction of the lines *y z*, X being perpendicular to the plane of the axle. This strain

relieve entirely by means of concave and convex surfaces upon the upper side of the box B and under side of the wedge or key C, which articulate upon each other, the wedge C remaining stationary as regards the case E and the box B remaining stationary as regards the journal of the axle A. These concave and convex surfaces are shown at *i*, Figs. 1, 4, and 5. The strain that would otherwise be thrown upon the axle is thus entirely removed.

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

1. The self-adjusting collar or washer F, in combination with the slide-partition G and

packing c, operating in the manner and for the purpose specified.

2. The box B and key C, provided with articulating surfaces *s' s'*, in combination with the key D, for the purpose of relieving the axle from strain and of conveniently removing and replacing the box B and collar F by simply relieving the axle from strain without removing it, the whole being constructed and arranged substantially as specified.

R. N. ALLEN.

Witnesses:

W. H. BURRIDGE,
I. BRAINERD.