

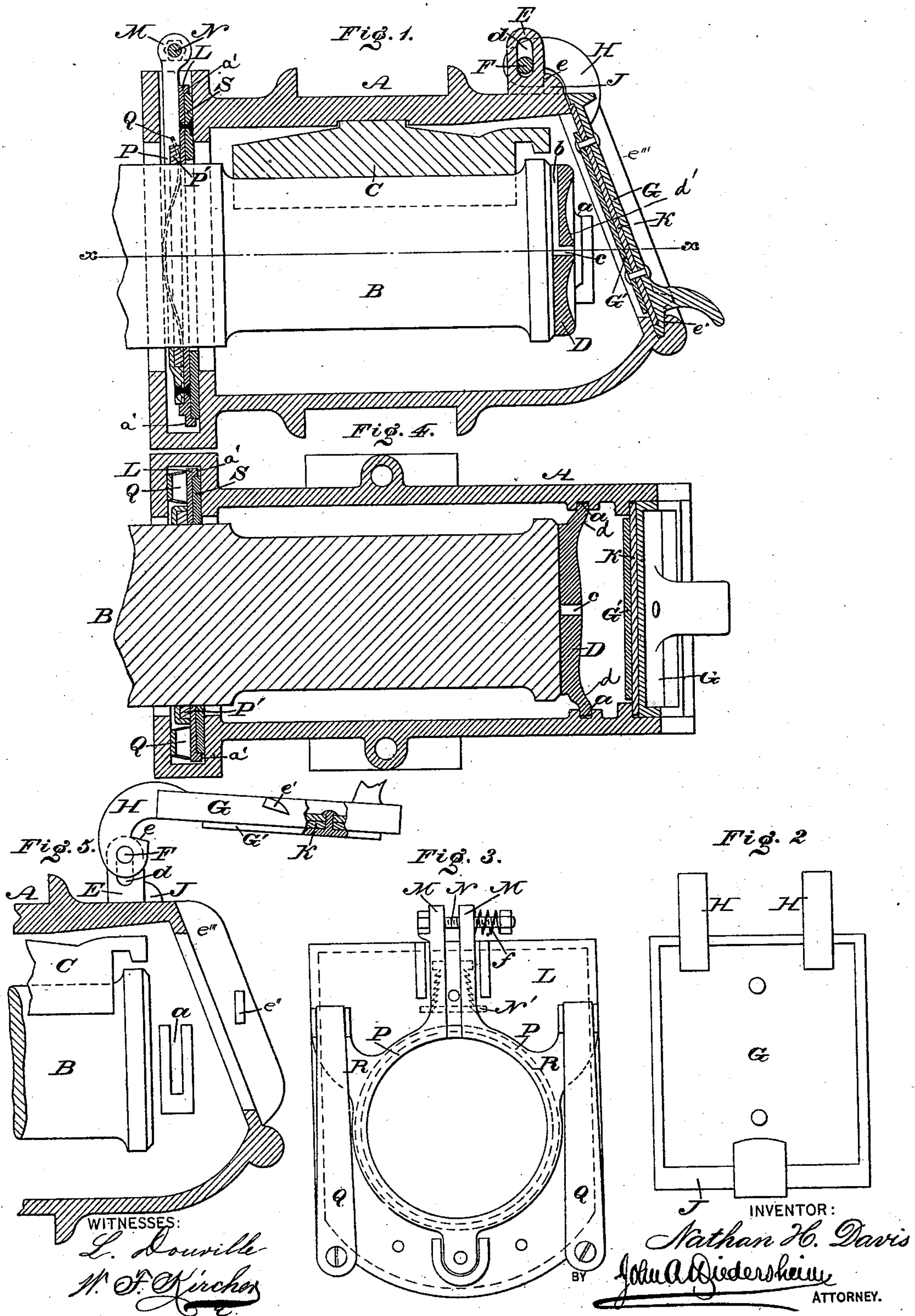
(No Model.)

N. H. DAVIS.

CAR AXLE BOX.

No. 273,473.

Patented Mar. 6, 1883.





# UNITED STATES PATENT OFFICE.

NATHAN H. DAVIS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO A. B. DAVIS AND LOUIS C. GRATZ, BOTH OF SAME PLACE.

## CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 273,473, dated March 6, 1883.

Application filed September 19, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN H. DAVIS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Car-Axle Boxes, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of the axle-box embodying my invention. Fig. 2 is a front view of the lid thereof. Fig. 3 is a rear view of a portion thereof. Fig. 4 is a horizontal section thereof in line *x x*, Fig. 1. Fig. 5 is a longitudinal vertical section of a modification.

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

My invention consists of means, substantially as hereinafter set forth, for closing the rear end of the box and preventing leakage or escape of oil and the entrance of dirt at said end.

It also consists of a self-locking lid, the construction and operation being hereinafter fully set forth.

Referring to the drawings, A represents the box, and B an axle or journal, and C the brass thereof.

On opposite faces of the inside of the box, at the front thereof, are vertical grooves *a*, in which is fitted a vertical piece or brass, D, which bears against the front end of the axle or journal, and has a vertical duct, *b*, whereby lubricating material may be directed to said end of the axle or journal. The ends *d d* of said bearing or brass D are inclined outwardly before entering grooves *a*, to secure greater strength in resisting the outward strain of the axle. The outer face of said brass is provided with a transverse rib, *d'*, for convenience of grasping said brass and for increased strength.

If desired, an opening, *c*, may be made horizontally through the piece D, so as to communicate with the duct *b*, whereby when the box is packed the lubricating material may reach the end of the axle or journal through said opening *c*.

Rising from the top of the box A, at the front thereof, is a cheek-piece, E, which has a vertical slot, *d*, for the reception of the axial

pin F of the lid G of the box. The ears H of the lid with which the pin F is connected are formed on their under sides with shoulders *e*, which are adapted to engage with a lug, J, rising from the top of the box A in front of the cheek-piece E.

It will be seen that when the box is to be opened the lid G is raised until the shoulders *e* clear the lug J, and it may then be raised or thrown over to its full extent. Lugs *e'* are formed on the sides of the lid, and lugs or shoulders *e''* on the inner faces of the outward extensions *e'''* of the sides of the box, as shown in Figs. 1 and 5, said extensions *e'''* protecting the lid against side thrusts or jars.

In order to close the box, the lid is lowered and the ears H ride over the lug J until the shoulders *e* clear the same, the lid as guided by the lug then dropping to its full extent, and said shoulders and lug *e' e''* interlocking, whereby the lid is securely held, and will remain closed until again properly elevated. The lugs on the cover and box in the latter case are made to wedge together as the cover descends, being provided with contact-faces which are inclined relatively to the said cover and the face of the box.

K represents a sheet of asbestos or other suitable material, riveted, bolted, or otherwise secured to the inner face of the lid G by means of a plate, G', and of such size relatively to said plate G that when the lid is closed the sheet presses against the edges of or projections or lugs on the wall of the front opening of the box, and provides a tight and reliable packing therefor, so that the lubricant cannot escape from the said opening or dirt enter the box thereat.

L represents a metallic plate, which is fitted to the axle or journal at the rear of the box, and may be divided, in which case each section has an ear, M, the two ears having passed through them a screw or bolt, N, whereby the sections of the plate may be adjusted on the axle or journal so as to tightly fit the same. The plate may, however, be one piece of metal and have pivoted or otherwise connected with it two annular expansible and compressible jaws, P, which embrace the axle or journal, the jaws having ears M and a bolt, N, as in



the previous case, whereby said jaws may be adjusted on the axle or journal.

If desired, a spring, *f*, may be interposed between the head of the bolt *N* and one of the ears *M* for pressing together the two ears, and consequently closing the jaws *P* tightly on the axle or journal. The spring may, however, be applied to either of the sections of the plate *L*, or both sections thereof be provided with springs, the object being to force the sections closely against the axle or journal.

In lieu of the bolt *N*, I may employ a link, *N'*, and serrate the ears *M*, the link engaging with the serrations of the ears and tightly holding the jaws against the axle or journal. (See dotted lines, Fig. 3.)

The plate *L* is fitted in a vertical groove in the rear of the axle-box, and is tightly held in position by means of springs *Q*, which are interposed between the box and plate, and secured to either, presenting its convexity toward the other part—the box or the cover, as the case may be—thus also preventing rattling of the plate. The jaws are formed with arms *R*, against which the springs bear, thus preventing rattling and shifting of the jaws, as more clearly shown in Fig. 3.

To the face of the plate is riveted or otherwise secured a sheet, *S*, of asbestos or other material, which is adapted to abut against the adjacent edges of the box, thus forming a barrier by which the oil or lubricant is prevented from escaping at the rear of the box, said plate *L* having a flange, *a*, around its edge, within

which the packing-sheet *S* is set, and thereby protected around the edges. Furthermore, the edges of the circular opening of the sections of the plate or inner edges of the jaws *P*, or both, are lined or packed with asbestos or other material, as at *P'*, which prevents leaking and escape of the lubricant around the axle or journal, the springs *Q* also serving to force the edge-packing of the jaws tightly against the face of the plate *L*. Asbestos is preferred as packing and lining because of its combustible nature.

The method of fastening the plate *L* to the axle-box may be varied, that shown being simply a vertical groove or passage in the box.

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

1. The box having a lug, *J*, at top and lugs *e''* at the sides, in combination with a self-locking lid having shoulders *e* at top and lugs *e'* at the sides, the lug *J* and shoulders *e* engaging and the lugs *e''* *e'* interlocking, substantially as and for the purpose set forth.

2. The plate *L*, with ears *M* and the bolt *N*, in combination with the spring *f*, substantially as and for the purpose set forth.

3. The plate *L* and springs *Q*, in combination with the jaws *P*, having arms *R*, substantially as and for the purpose set forth.

NATHAN H. DAVIS.

Witnesses:

JOHN A. WIEDERSHEIM,  
A. P. GRANT.