No. 638,499. Patented Dec. 5, 1899.

N. H. DAVIS.

DUST GUARD FOR CAR AXLE BOXES.

(Application filed July 15, 1899.)

(No Model.)

FIG. 1.

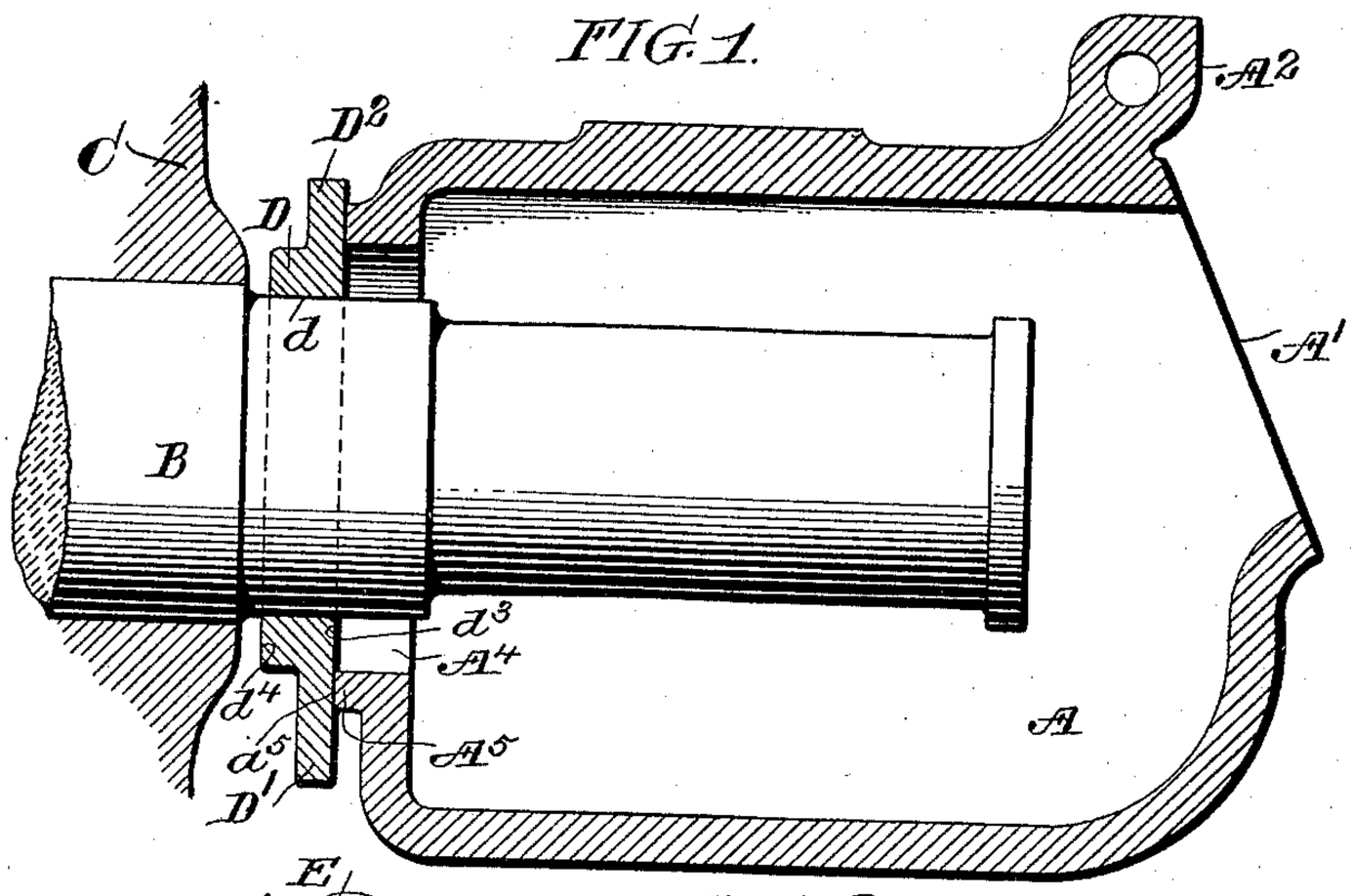


FIG. 2.

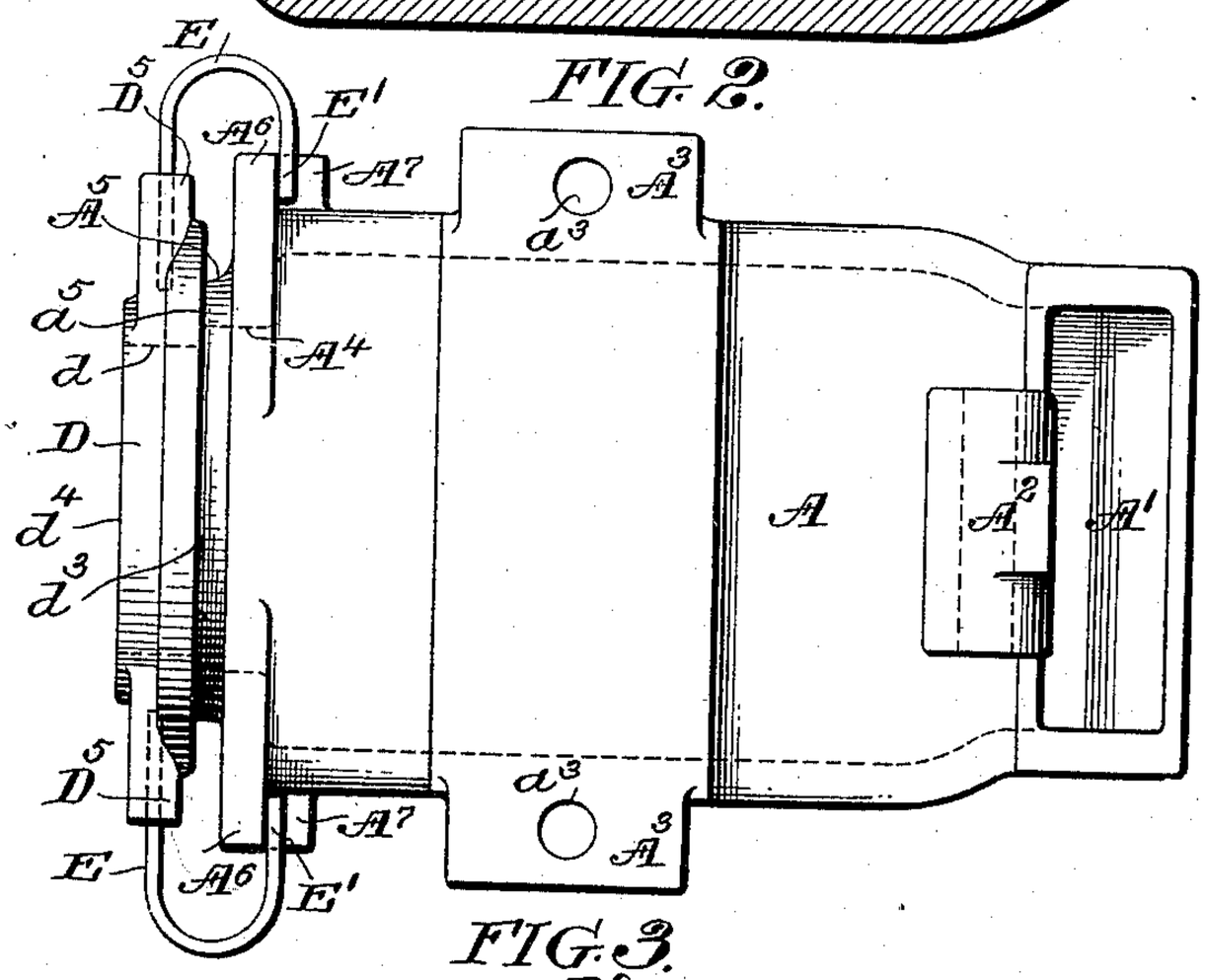
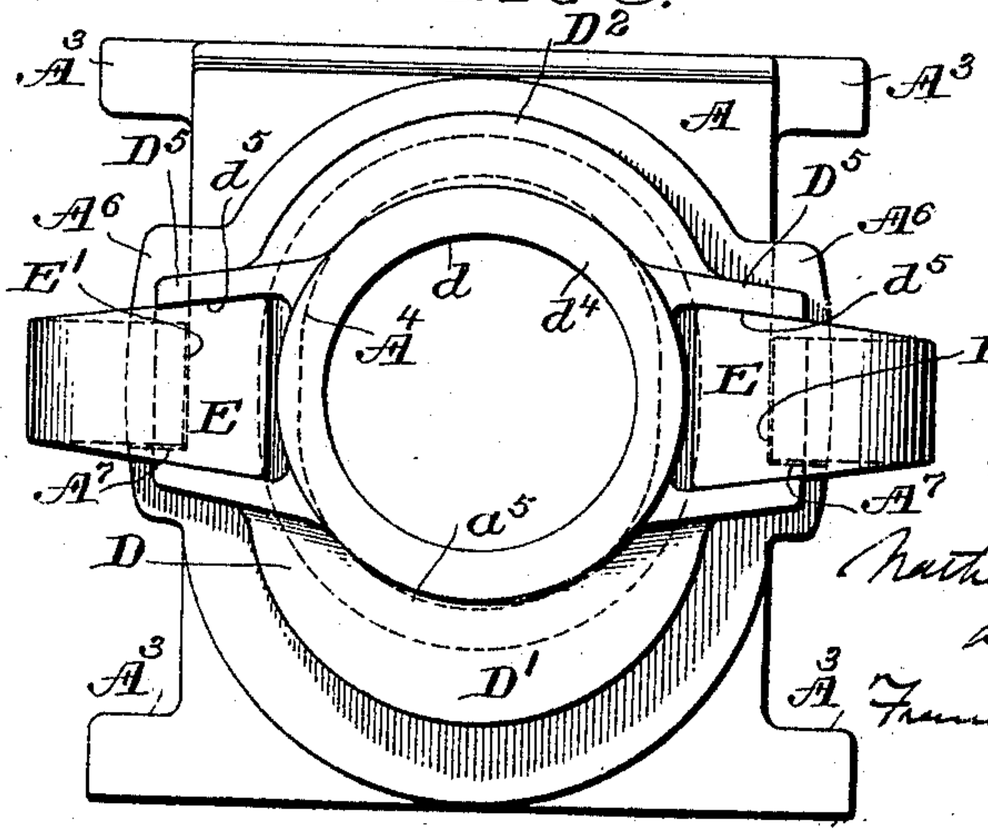


FIG. 3.



Witnesses:
Henry Drury
D. Stewart

Inventor:
Nathan H. Davis
by his atty.
Francis J. Chambers

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C

UNITED STATES PATENT OFFICE.

NATHAN H. DAVIS, OF PHILADELPHIA, PENNSYLVANIA.

DUST-GUARD FOR CAR-AXLE BOXES.

SPECIFICATION forming part of Letters Patent No. 638,499, dated December 5, 1899.

Application filed July 15, 1899. Serial No. 723,882. (No model.)

To all whom it may concern:

Be it known that I, NATHAN H. DAVIS, a citizen of the United States of America, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Dust-Guards for Car-Axle Boxes, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to dust-guards for car-axle boxes, and has for its object to provide a dust-guard of great simplicity and strength, both in application and use.

The nature of my improvements will be best understood as described in connection with the drawings in which they are illustrated, and in which—

Figure 1 is a longitudinal sectional elevation through the axle-box and dust-guard, the axle and portion of the car-wheel being also indicated. Fig. 2 is a plan view of the box and guard; and Fig. 3, a rear elevation of the box and guard.

A indicates the box; A′, the opening through which lubricating material is introduced; A^2, the horn of the box to which the lid is attached in practice; A^3 A^3, &c., lugs formed with bolt-holes A^3 through which the bolts attaching the box to the truck are passed.

A^4 indicates the opening at the rear of the box through which the axle passes.

A^5 is an outwardly-projecting flange or rim surrounding the perforation A^4, made comparatively narrow and with a plane face, as indicated at a^5.

A^6 A^6 are ear-like flanges or projections which, as shown, extend from the sides of the box A, and A^7 A^7 are stop-lugs which, as shown, are formed at the bottom of the ear-like flanges A^6.

B is the axle, C indicating the car-wheel attached to the axle.

D is the dust-guard, consisting of a plate preferably of oblong form, as shown, and formed with a circular opening *d*, adapted to fit neatly around the axle, as indicated in Fig. 1. Preferably the circular opening D is formed nearer the top D^2 than the bottom D′ of the oblong plate forming the dust-guard, as is shown in Figs. 1 and 3. d^3 indicates the plane face of the dust-guard, which rests directly in contact with the plane face a^5 of the outwardly-projecting narrow rim A^5.

d^4 is an outwardly-extending plane-faced annular rim extending from the rear face of the dust-guard and surrounding the opening *d*, as shown.

D^5 D^5 indicate slotted ears or projections grooved, as indicated at d^5, and E E are springs, the butt-ends of which are situated and clamped in the grooves d^5, as shown, while the free ends curve inward and backward, as indicated at E′, so as to extend behind and press against the ears A^6 at the rear of the box, the action of the springs being to hold the dust-guard in contact with the plane face of the narrow annular rim A^5. The shape and arrangement of the springs are such as not to interfere with any normal movement of the dust-guard plate upon the box. The axle B, passing through the dust-guard plate, has certain permissible movements with regard to the axle-box, all of which are shared by the dust-guard, with the single exception of the rotative movement, which is provided against by the presence of one or more lugs, such as A^7, which, coming in contact with the springs, prevent them and the plate to which they are attached from rotating. My reason for making the plate of oblong shape and perforating it nearer to the top than to the bottom of the oblong is that in use and owing to the wearing of the bushing there is a tendency of the axle to rise gradually higher in the box, so that the dust-guard plate also tends to rise, making it advisable that the lower flange D′ should extend below the lowermost point of the narrow flange A^5 to a greater distance than the upper flange D^2 extends above this narrow flange. The outwardly-extending flange d^4 should be annular, as indicated, so that in case the end of the car-wheel hub comes in contact with it the pressure and friction will be equal throughout.

My dust-guard plate D is practically no larger than is necessary to properly cover the opening A^4, with provision for the normal movements of the dust-guard with reference to the box, and the metal in the guard is disposed so as to give the necessary strength and also the desirable length of contact with the axle without unnecessary weight. I am thus enabled to keep the weight of the dust-

guard down to a point where all appreciable friction between it and the axle is eliminated and so that there is practically no tendency to wear and enlarge the opening *d*. By this and the other features of construction described I am enabled to dispense with the use of packing-gaskets, insuring a tight joint between metal surfaces, and it is also practicable for me to make the dust-guard in a single piece without troublesome and expensive expedients for taking up wear.

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

1. An axle-box having an opening at its rear for the passage of the axle said opening being surrounded by an outwardly-extending narrow plane-faced rim, as A^5, a^5, and the rear edges of the box being formed with ear-like flanges, as A^6, in combination with a metal dust-guard, as D, having a plane face, as d^3, adapted to rest against the face a^5 of rim A^5, and also having a circular passage *d* adapted to fit nicely about the axle, and springs, as E E′, secured to the edges of the guard D and adapted to extend behind the ears A^6.

2. An axle-box having an opening at its rear for the passage of the axle said opening being surrounded by an outwardly-extending narrow plane-faced rim, as A^5, a^5, and the rear edges of the box being formed with ear-like flanges, as A^6, in combination with an oblong metal dust-guard, as D, having a plane face, as d^3, adapted to rest against the face a^5 of rim A^5, and also having a circular passage *d* adapted to fit nicely about the axle, said passage being formed through the guard D at a point nearer to the top than to the bottom of its oblong conformation, and springs, as E, E′, secured to the edges of the guard D and adapted to extend behind the ears A^6.

3. An axle-box having an opening at its rear for the passage of the axle said opening being surrounded by an outwardly-extending narrow plane-faced rim, as A^5, a^5, and the rear edges of the box being formed with ear-like flanges, as A^6, and stop-lugs, as A^7 A^7, in combination with a metal dust-guard, as D, having a plane face, as d^3, adapted to rest against the face a^5 of rim A^5, and also having a circular passage *d* adapted to fit nicely about the axle and springs, as E, E′, secured to the edges of the guard D and adapted to extend behind the ears A^6.

4. An axle-box having an opening at its rear for the passage of the axle said opening being surrounded by an outwardly-extending narrow plane-faced rim, as A^5, a^5, and the rear edges of the box being formed with ear-like flanges, as A^6, in combination with a metal dust-guard, as D, having a plane face, as d^3, adapted to rest against the face a^5 of rim A^5, and also having a circular passage *d* adapted to fit nicely about the axle and springs, as E E′, secured to the edges of the guard D and adapted to extend behind the ears A^6.

5. An axle-box having an opening at its rear for the passage of the axle said opening being surrounded by an outwardly-extending narrow plane-faced rim, as A^5, a^5, and the rear edges of the box being formed with ear-like flanges, as A^6, in combination with an oblong metal dust-guard, as D, having a plane face, as d^3, adapted to rest against the face a^5 of rim A^5, and also having a circular passage *d* adapted to fit nicely about the axle, said passage being formed through the guard D at a point nearer to the top than to the bottom of its oblong conformation and an annular plane-faced flange d^4 projecting from the rear face of the plate around the circular passage, and springs, as E, E′, secured to the edges of the guard D and adapted to extend behind the ears A^6.

6. An axle-box having an opening at its rear for the passage of the axle said opening being surrounded by an outwardly-extending narrow plane-faced rim as A^5 a^5 in combination with an integral perforated dust-guard plate as D adapted to fit nicely on the axle and means for holding said plate against the rim A^5 a^5 with resilient pressure.

NATHAN H. DAVIS.

Witnesses:
CHAS. F. MYERS,
D. STEWART.