No. 740,524. PATENTED OCT. 6, 1903.

J. J. BUSENBENZ & E. LANGE.

DUST GUARD.

APPLICATION FILED JAN. 10, 1903.

NO MODEL.

Fig. 1.

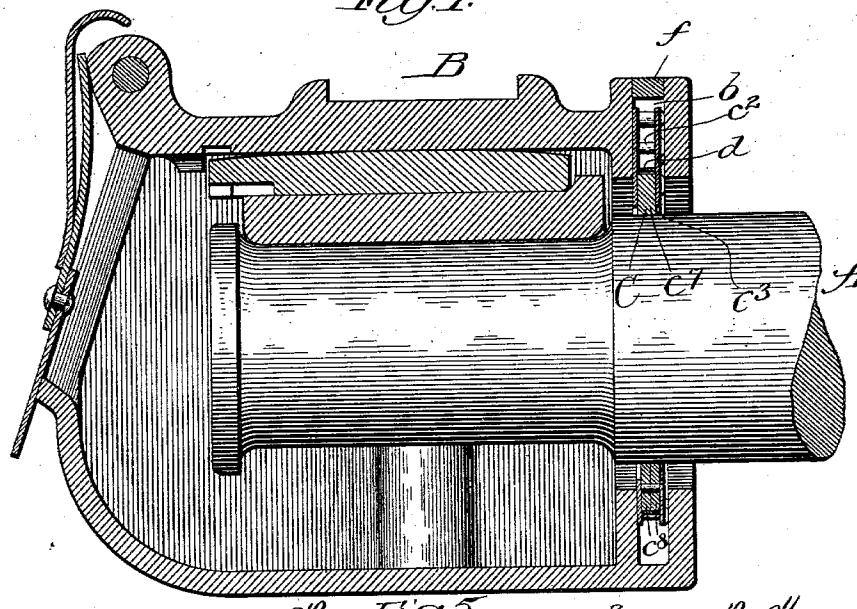


Fig. 5.

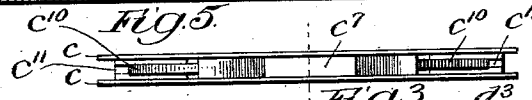


Fig. 2.

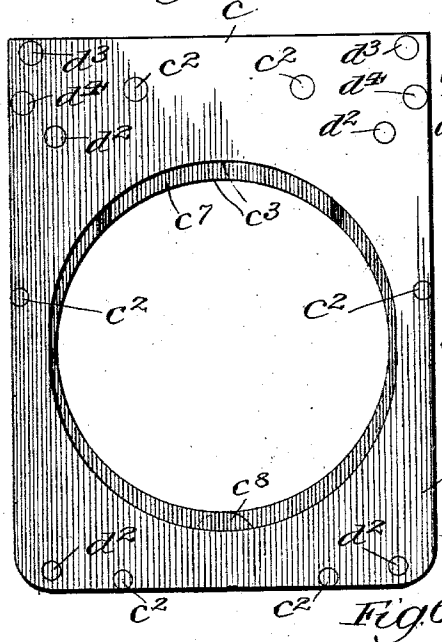


Fig. 3.

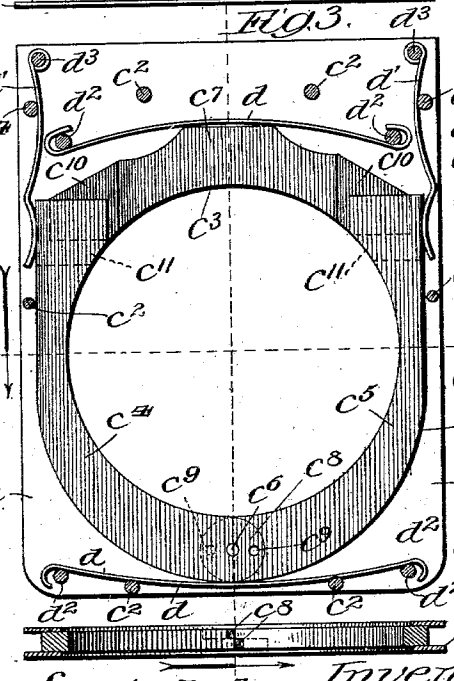


Fig. 4.

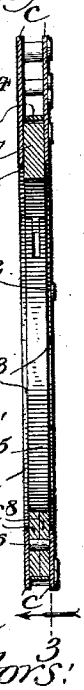
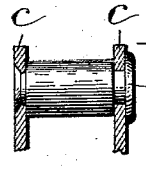


Fig. 6.

Fig. 7.



Witnesses:
Chas. E. Gaylord,
Geo. E. Larson.

Inventors:
Jacob J. Busenbenz,
Emil Lange,
By Dyrenforth, Dyrenforth & Lee,
Attys.

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

No. 740,524. Patented October 6, 1903.

UNITED STATES PATENT OFFICE.

JACOB J. BUSENBENZ, OF CHICAGO, ILLINOIS, AND EMIL LANGE, OF DAVENPORT, IOWA, ASSIGNORS TO FRANK M. UTT, OF CHICAGO, ILLINOIS, AND RAILWAY JOURNAL LUBRICATING COMPANY, A CORPORATION OF WISCONSIN.

DUST-GUARD.

SPECIFICATION forming part of Letters Patent No. 740,524, dated October 6, 1903.

Application filed January 10, 1903. Serial No. 138,559. (No model.)

To all whom it may concern:

Be it known that we, JACOB J. BUSENBENZ, residing at Chicago, in the county of Cook and State of Illinois, and EMIL LANGE, residing at Davenport, in the county of Scott and State of Iowa, citizens of the United States, have invented a new and useful Improvement in Dust-Guards, of which the following is a specification.

Our invention relates particularly to dust-guards for the inner ends of the journal-boxes of cars.

Our primary object is to provide a dust-guard of this character of simple and improved construction and capable of being more readily applied to the journal-box than is true of known devices.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a broken longitudinal sectional view of a journal-box equipped at its inner end with our improved dust-guard; Fig. 2, a side view of the guard; Fig. 3, a sectional view taken as indicated at line 3 of Fig. 4 and showing one casing-plate of the dust-guard removed; Fig. 4, a transverse vertical sectional view of the dust-guard, taken as indicated at line 4 of Fig. 6; Fig. 5, a top plan view of the dust-guard; Fig. 6, a transverse horizontal section of the same, taken as indicated at line 6 of Fig. 3; and Fig. 7 an enlarged broken section illustrating the manner in which the casing-plates of the dust-guard are spaced and riveted.

The device will be specifically and minutely described in connection with a car journal-box without intending thereby to limit the invention unduly.

A represents an axle, B a journal-box of common construction, provided at its outer end with any suitable lid and at its inner end with the usual dust-guard slot or chamber *b*, and C our improved dust-guard secured firmly within the slot by being driven or forced thereinto.

The device C comprises a casing or guide formed of suitably-spaced rigidly-connected plates *c*, and a spring-held sectionally-constructed automatically size-adjusting packing-ring *c'*. The plates *c* are of rectangular form and fit snugly within the slot *b*. They are spaced and rigidly connected by rivets c^2, shouldered as shown in Fig. 7 and have registering perforations c^3 of ample size to receive the journal and permit transverse movement thereof (either vertically or forwardly or backwardly) with relation to itself. As the main play of the axle in its journal-box is in a vertical direction, the openings are elongated vertically, as shown. The ring *c'* comprises two forwardly and rearwardly swinging sections c^4 c^5, joined together at their lower ends by a pivot c^6 and a vertically-slidable (with relation to the other two sections) section c^7. The members c^4 c^5 have their adjacent ends reduced and rounded to form pivotal tongues c^8 of half thickness, whereat the members are pivotally joined. Each tongue is provided with an oil-hole c^9, through which a lubricant can pass to the adjacent surfaces of said tongues. The member c^7 is provided at its ends with tenons c^{10}, which fit freely within mortises or slots c^{11}, with which the upper ends of the members c^4 c^5 are provided. The slots c^{11} are of such depth (see dotted lines, Fig. 3) and the shoulders at the bases of the tongues sufficiently removed from the members c^4 c^5 to permit contraction of the ring, thus allowing for wear. The ring-sections are held together, and the ring is properly centered by opposed upper and lower springs *d* and opposed lateral springs *d'*. The springs *d* are bowed away from each other slightly and held by pins d^2, about which their ends hook loosely, the member c^7 bearing against the central portion of the upper spring and the joint between the members c^4 c^5 bearing against the central portion of the lower spring. The springs *d'* are secured at their upper ends to

rivets d^3 and bear adjacent to their upper ends against rivets d^4, the lower extremities of said springs bearing against the upper portions of the members c^4 c^5.

From the foregoing description it will be perceived that the ring c' collapses automatically to compensate for wear and also is movable as a whole forwardly, backwardly, upwardly, or downwardly to compensate for relative movement between the journal-box and journal. The dust-guard is applied to the journal-box by driving or forcing it into the cavity, which receives it in such manner that the casing or guide is immovably fixed in said cavity, thereby affording smooth guide-surfaces between which the packing-ring moves. Preferably the heads of the rivets are allowed to project at the inner side of the casing, thereby aiding in wedging the casing firmly within the dust-guard cavity, the contact at the other side of the casing being as close as possible to prevent dust from entering there. In addition the upper end of the cavity may be closed by a dust-tight stopper f.

It will be understood that the journal-box may be raised to permit the brass and wedge to be removed and replaced, as usual, the casing moving upwardly with the journal-box while the axle and ring remain stationary.

Changes in details and arrangement within the spirit of our invention are contemplated. For instance, the dust-guard may be inserted in its cavity the opposite end up and will give good results in this position, and the construction of the ring c' and the arrangement of the springs may be varied, while still retaining the feature of movability in any direction in its own plane within an immovable separately-formed casing.

What we regard as new, and desire to secure by Letters Patent, is—

1. The combination with a journal-box having a dust-guard cavity, of a casing comprising suitably-spaced rigidly-connected metallic plates immovably secured within said cavity, and a spring-held automatically size-adjusting packing-ring movable in any direction in its own plane within said casing, for the purpose set forth.

2. A dust-guard of the character described, comprising a suitable casing, and a packing-ring within said casing comprising two pivotally-connected sections and a third section slidably jointed to the free ends of said first-named sections and movable with relation thereto, for the purpose set forth.

3. A dust-guard of the character described, comprising a suitable casing, opposed upper and lower springs supported thereon, opposed lateral springs and an automatically size-adjusting packing-ring confined between said springs and capable of movement in any direction in its own plane, for the purpose set forth.

4. A dust-guard comprising a suitable casing, a packing-ring within said casing comprising two pivotally-connected sections and a third section having slidably-jointed connection with the free ends of said first-named sections, and opposed springs bearing upon said ring at the point of connection between said two first-named sections and at said second-named section, for the purpose set forth.

5. A dust-guard, comprising a suitable casing, a packing-ring comprising two pivotally-connected ring-sections and a third section having slidably-jointed connection with the free ends of said first-named sections, opposed springs bearing upon said last-named ring-section and the diametrically opposite portion of said ring and lateral springs bearing against the free end portions of said first-named ring-sections.

6. A dust-guard comprising two plates provided with journal-openings, rivets equipped with spacing-shoulders serving to space and rigidly connect said plates, upper and lower springs having bearings in said casing near their extremities, a packing-ring comprising two pivotally-joined sections and a third section having tongue-and-groove connection with the free extremities of said first-named sections, said third section bearing upon one of said springs, and lateral springs connected with said casing and having their extremities bearing against the free end portions of said first-named ring-sections, for the purpose set forth.

7. The combination with a journal-box having a dust-guard cavity, of a dust-guard casing having suitably-spaced rigidly-connected sides and immovably fixed in said cavity, and a packing-ring movable in its own plane within said casing, and immovable laterally with relation to the casing for the purpose set forth.

8. A dust-guard comprising a suitable casing, and a packing-ring within said casing comprising two pivotally-connected sections suitably concaved to engage more than one-half of the periphery of the journal engaged by the packing-ring, and a third section completing the packing-ring and opposite the pivotal connection of said first-named sections and movable toward said pivotal connection, for the purpose set forth.

9. A dust-guard comprising a casing with suitably-spaced rigidly-connected sides, a packing-ring comprising two sections pivotally connected at their adjacent ends and suitably concaved to embrace more than one-half of the periphery of the journal engaged by the packing-ring, and a third section having slidable connections at its extremities with the adjacent extremities of said first-named

sections, springs bearing upon said first-named sections near their pivotal connection and said third section, and lateral springs bearing on said first-named sections near the free ends thereof, for the purpose set forth.

10. The combination with a journal-box having a dust-guard cavity, of a dust-guard casing having suitably-spaced rigidly-connected sides and rivets whose ends project beyond one of the sides, said casing driven into and immovably fixed in said cavity, and a packing-ring moving within said casing in its own plane and immovable laterally with relation to the casing, for the purpose set forth.

JACOB J. BUSENBENZ.
EMIL LANGE.

Witnesses as to Jacob J. Busenbenz:
A. C. KITTLESON,
L. HEISLAR.
Witnesses as to Emil Lange:
F. C. KROSGER,
ADOLPH PINSTER.