No. 764,162. PATENTED JULY 5, 1904.

T. H. SYMINGTON.

DUST GUARD FOR AXLE BOXES.

APPLICATION FILED DEC. 7, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1.

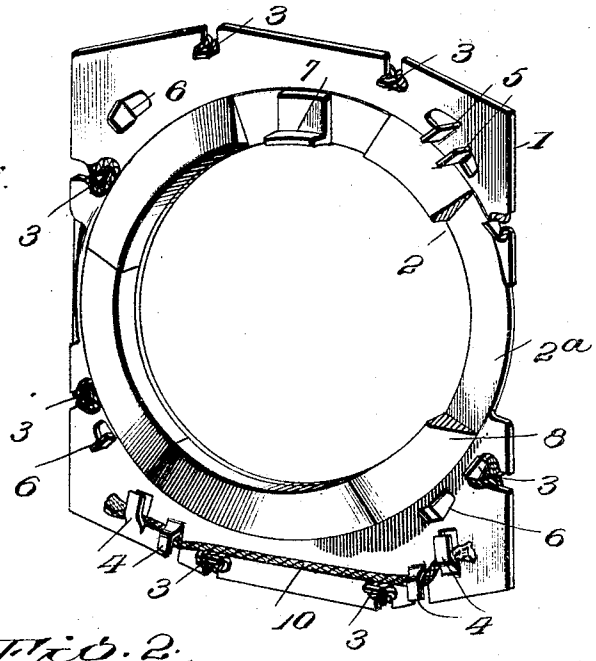


FIG. 2.

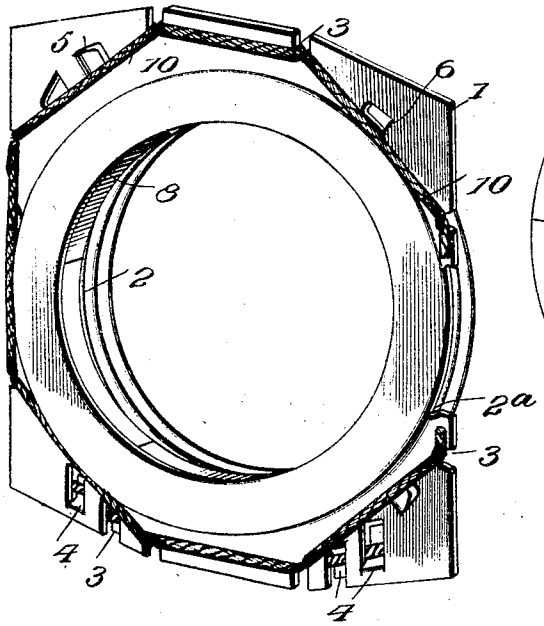
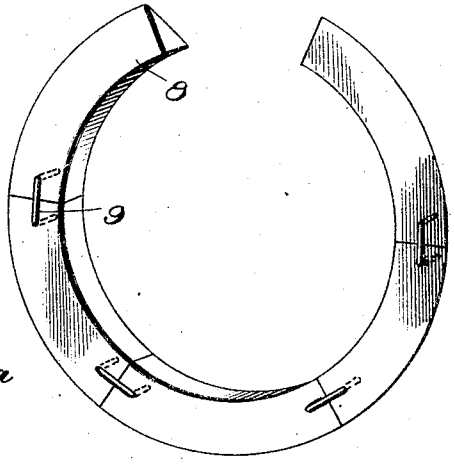


FIG. 3.



Witnesses:
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NO MODEL. 2 SHEETS—SHEET 2.

FIG. 4

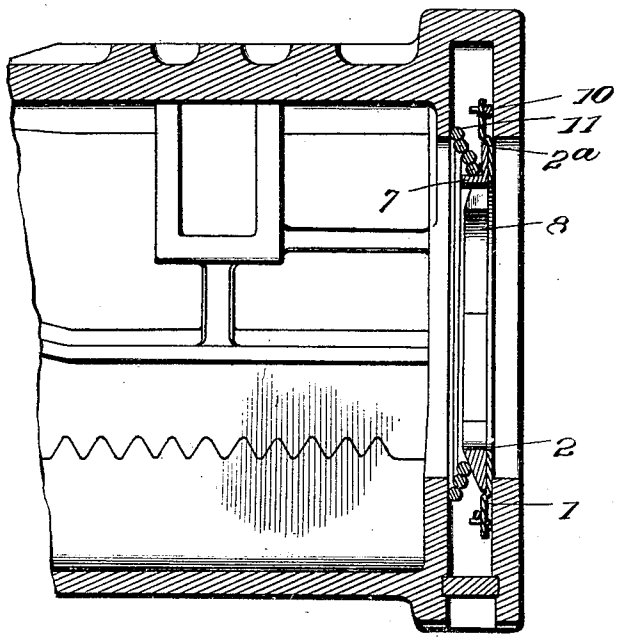
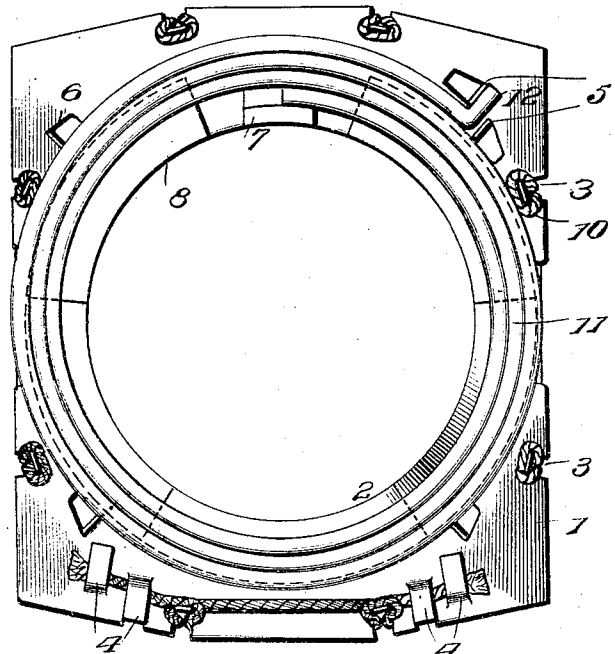


FIG. 5.



Witnesses:

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No. 764,162. Patented July 5, 1904.

UNITED STATES PATENT OFFICE.

THOMAS HARRISON SYMINGTON, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE T. H. SYMINGTON COMPANY, A CORPORATION OF DELAWARE.

DUST-GUARD FOR AXLE-BOXES.

SPECIFICATION forming part of Letters Patent No. 764,162, dated July 5, 1904.

Application filed December 7, 1903. Serial No. 184,113. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HARRISON SYMINGTON, a citizen of the United States of America, and a resident of Baltimore city, Maryland, (my post-office address being Calvert Building, Baltimore city, Maryland,) have invented certain new and useful Improvements in Dust-Guards for Axle-Boxes, of which the following is a specification.

My invention relates to a dust-guard for a railroad axle-box, and is designed to be inserted in the well of the axle-box, to fit tightly upon the axle, and to close the rear opening in the axle-box, so as to prevent the admission of dust to the journal.

This invention is an improvement upon the dust-guard patented by me on the 17th day of April, 1894, No. 518,288.

In the drawings the same reference-numerals indicate the same parts in all of the figures.

Figure 1 is a perspective view of one side of my dust-guard, the parts being assembled with the exception of the spring, which is removed. Fig. 2 is a perspective view of my dust-guard, taken from the opposite side to that shown in Fig. 1. Fig. 3 is a perspective view of the dust-guard ring. Fig. 4 is a vertical longitudinal section of an axle-box and vertical section of the dust-guard in position in its well. Fig. 5 is a full elevation of the dust-guard with all of the parts in position thereon.

Referring to Fig. 2, 1 is a plate having a central aperture 2 and a concentric recess 2^a. 3 3 3 are a series of peripheral notches and lugs cut into the edge of the plate and turned up to a right angle for the purpose of lacing upon the plate a packing-cord. 4 4, 4 4 are two pairs of lugs stamped out of the body of the plate and turned in opposite directions to each other, so as to form a securing device for the opposite ends of the packing-cord. 5 5 are a pair of lugs stamped out of the body of the plate and turned up to a right angle therewith to form a holding device for the hooked end of a volute spring used in the dust-guard. 6 6 6 are a series of lugs stamped out of the body of the plate and turned up to a right angle to form guides for the sides of the volute spring. 7 is a lug secured to the surface of the plate and having an interior edge projecting from the face of the plate in line with the edge of the interior aperture of the plate. The lug 7 is right-angular in form. It is located, preferably, at the top of the aperture in the plate. 8 is a segmental ring triangular in cross-section, made, preferably, of wood and shown in detail in Fig. 3. The sections of the ring are screwed together by staples 9, and the ring is not quite a full circle, the ends of the ring standing about one-tenth of the circumference apart. The ring 8 rests upon the surface of the plate 1 in the recess 2^a, surrounding its central aperture, having one of its walls perpendicular to the face of the ring and its third wall forming a bevel-seat for the volute spring, which surrounds the axle. The lug 7 is located between the ends of the ring and prevents the rotation of the ring with the rotation of the axle. 10 is a cord, one end of which is made fast to one of the pairs of lugs 4 4. It is then passed through the notches 3 and around the lugs cut out of those notches, the cord lying on the face of the plate opposite to that on which the ring 8 is located. It is then passed all round the face of the plate, as shown in Fig. 2, and the opposite end of the cord is attached to the other pair of lugs 4 4 on the opposite side of the body of the plate. 11 is a volute spring, having one end bent at a right angle to its coil to form a hook 12, which is on the end of the exterior coil, the opposite end of the coil approaching the apex of the volute and the coils being suitably separated to give the desired tension to the volute. The coil is of such a size as to admit of the free passage through it of the axle and to rest when coiled in the position shown in Fig. 5 upon the inclined surface of the ring 8. The hook 12 is held between the lugs 5 5, and when compressed upon the ring 8 the opposite end of the spring will rest upon the lug 7, which will support it.

Referring to Fig. 4, it will be seen that when the parts are assembled as described and the dust-guard is inserted in its well in the axle-box the aperture in the plate 1, the ring 8, and the spring 11 will all register with the

axis of the axle, and the axle may be passed through them when inserted into the axle-box by the expansion of the ring 8 and the spring 11. The packing-cord 10, which is made, preferably, of soft rope saturated with tar, will rest against the outer wall of the well and make a tight closure between the packing-cord and the exterior of the box, so lying as that plate 1 is pressed firmly against the interior wall of the well. The outer coil of the volute spring 11 will rest against the interior wall of the well and the inner coil of the spring, which rests upon the incline of the ring 8. The pressure of the spring communicated to the plate 1 through the ring 8 will press the packing-cord 10 against the outer wall of the well and will at the same time contract the ring 8 upon the axle, forming a tight bearing around the axle and at the same time pressing the ring against the plate 1 in the recess 2^a. Thus it will be seen that the opening through which dust could enter the journal-box will be closed, the packing-cord 10 will close the joint between the plate and the wall of the well on one side, and the ring will close the joint between itself and the plate 1 on the opposite side and will also be pressed tightly upon the axle upon its bearing-surface and will be continually contracted upon the axle as it wears by the spring 11.

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

1. In a dust-guard for axle-boxes, the combination of a plate having a central aperture, a packing-cord lying and secured upon one of its faces surrounding the central aperture, a ring triangular in cross-section resting upon the opposite face of the plate and surrounding the central aperture, and a volute spring suitably mounted and bearing upon the beveled face of the ring, substantially as described.

2. In a dust-guard for journal-boxes, a plate having a central aperture, a series of notches and lugs on its periphery for lacing and fastening a packing-cord, a packing-cord laced on said lugs and notches and lying upon the face of the plate surrounding its central aperture, a segmental ring triangular in cross-section having a portion of its circumference cut away, and being adapted to rest upon the plate surrounding the central aperture upon the opposite side from the packing-cord, and a volute spring suitably mounted and bearing upon the incline of the triangular ring, substantially as described.

3. In a dust-guard for journal-boxes, a plate having a central aperture, a series of notches and lugs on its periphery for lacing and fastening a packing-cord, a series of lugs upon one side of the plate for securing and guiding a volute spring, and a lug located upon one side of the plate upon the edge of the central aperture, a packing-cord laced on the notches and lugs of the plate and lying upon one of its faces surrounding the central aperture, a segmental ring of triangular cross-section having a portion cut away located upon the opposite side of the plate from the packing-cord and surrounding the central aperture, the lug upon the edge of the central aperture being between the ends of the ring, a volute spring suitably mounted and bearing upon the incline surface of the ring, as and for the purpose specified.

4. In a dust-guard for journal-boxes, a plate having a central aperture, a series of notches and lugs on its periphery for lacing and fastening a packing-cord, a series of lugs upon one side of the plate for securing and guiding a volute spring, and a lug located upon one side of the plate upon the edge of the central aperture, a packing-cord laced on the notches and lugs of the plate and lying upon one of its faces surrounding the central aperture, a segmental ring of triangular cross-section having a portion cut away located upon the opposite side of the plate from the packing-cord and surrounding the central aperture, the lug upon the edge of the central aperture being between the ends of the ring, a volute spring having a hook on one end adapted to engage suitable lugs on the plate, and when compressed to rest upon the incline of the segmental ring, the free end of the spring resting upon the lug on the plate at the edge of the central aperture, as and for the purpose specified.

Signed by me at Baltimore city, Maryland, this 9th day of November, 1903.

THOMAS HARRISON SYMINGTON.

Witnesses:
T. BAYARD WILLIAMS,
THORVALD A. LEE.