No. 686,715. Patented Nov. 19, 1901.

S. A. CRONE.

DUST GUARD FOR CAR AXLE BOXES.

(No Model.) (Application filed Mar. 12, 1901.)

Fig. 1.

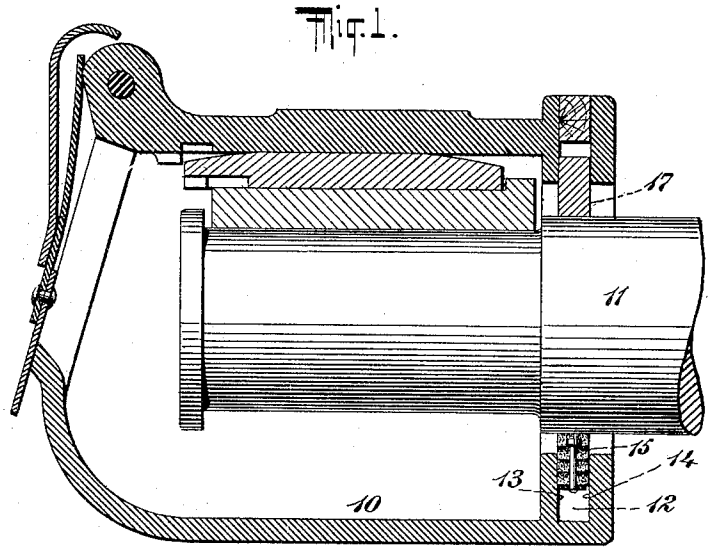


Fig. 2.

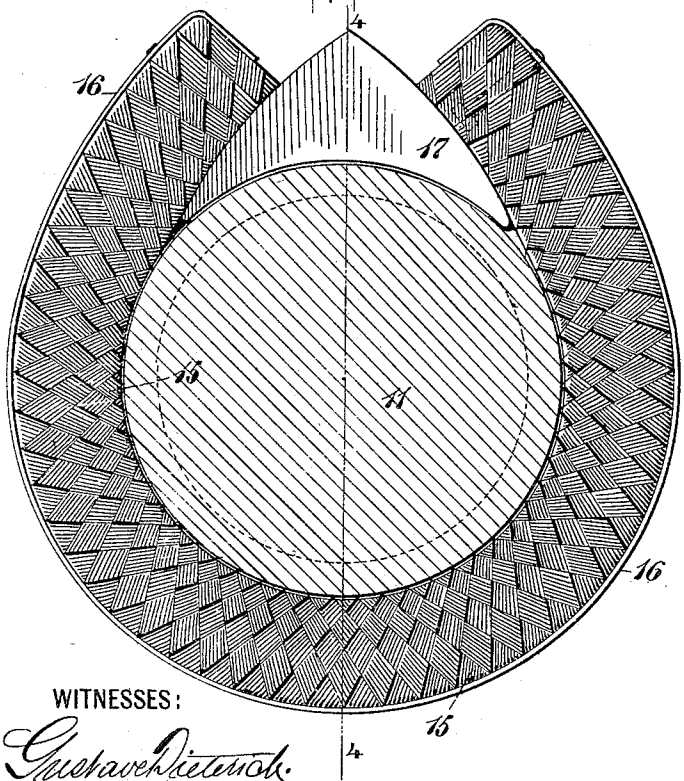


Fig. 3.

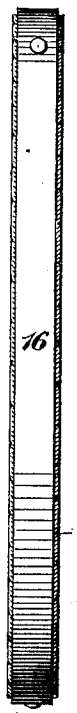
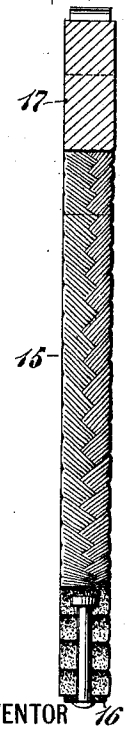


Fig. 4.



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UNITED STATES PATENT OFFICE.

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DUST-GUARD FOR CAR-AXLE BOXES.

SPECIFICATION forming part of Letters Patent No. 686,715, dated November 19, 1901.

Application filed March 12, 1901. Serial No. 50,803. (No model.)

To all whom it may concern:

Be it known that I, SETH A. CRONE, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Dust-Guards for Car-Axle Boxes, of which the following is a specification.

The invention relates to improvements in dust-guards for car-axle boxes; and it consists in the novel features and combinations of parts hereinafter described, and particularly pointed out in the claims.

In its preferred embodiment my invention consists in a dust-guard capable of being applied to or removed from its operative position within the journal-box while the end of the car-axle is therein and without disturbing said axle, and this preferred embodiment of my invention is the one illustrated in the drawings forming a part of this application, from which it will be seen that the body of the dust-guard is of plaited textile or fibrous material in the form of a split ring applied to and around the car-axle and held in position thereon by means of a spring-band, which is secured along the outer edges of said ring and operates by its own inherent tension to close the ring against the car-axle. In cross-section the ring of textile or fibrous material is substantially rectangular in outline and in use is intended to occupy the full width of the space provided in car-axle boxes to receive the dust-guard. It is desirable that the dust-guard ring shall closely fit against the car-axle; but it is also desirable that the ring shall not be capable of turning to any material extent with the car-axle, and hence in the embodiment of my invention illustrated in the drawings I provide at the upper side of the car-axle a block approximately of triangular shape whose lower edges are adapted to the circle of the axle and whose wedge-like side edges pass beneath the ends of the dust-guard ring, so that the dust-guard ring at its ends will not rest upon the car-axle, but will bind against the opposite inclined side surfaces of the said block. The block not only receives the ends of the dust-guard ring, but creates a suitable projection which during the turning of the car-axle will meet the edge walls of the dust-guard chamber and serve to prevent the dust-guard ring from being carried around with the car-axle, said dust-guard ring and block turning with the car-axle only until said projection reaches the edge wall of the dust-guard chamber, when the dust-guard ring and its interposed block will become arrested.

While I do not limit the invention to all of the details of form and construction illustrated in the drawings, the invention will be fully understood by reference thereto in connection with the description hereinafter presented.

Referring to the accompanying drawings, Figure 1 is a central vertical longitudinal section through a car-axle box equipped with a dust-guard constructed in accordance with and embodying my invention, the end of the car-axle being shown in position in said box. Fig. 2 is an enlarged side elevation of a dust-guard embodying my invention, the same being shown as applied to a car-axle, the latter being in cross-section. Fig. 3 is an edge view of same, and Fig. 4 is a vertical section of same on the dotted line 4 4 of Fig. 2.

In the drawings, 10 denotes a usual form of car-axle journal-box, and 11 a portion of a car-axle shown in position within said box. The axle-box 10 is provided at its inner end with the vertical dust-guard space 12, formed between the vertical walls 13 14, through suitable openings in which walls the car-axle passes, as shown in Fig. 1, and into which space 12 is placed the dust-guard of my invention to encircle said axle and prevent the entrance of dust or other foreign matter to the journal-box.

The dust-guard of my invention is illustrated in position in Fig. 1 within the dust-guard space 12, but is more clearly illustrated in Figs. 2, 3, and 4, in which it may be seen that the dust-guard comprises the strip of flexible material 15, the metallic spring-band 16, applied upon the outer edges of the strip or ring 15, and the block 17, which is interposed between the facing ends of the strip or ring 15 and also between the inner surfaces of the ends of said strip or ring 15 and the surface of the car-axle 11. The block 17 when viewed in side elevation is approximately of triangular shape and has its lower surface made concave to fit upon the car-axle 11, as

shown in Fig. 2, while its side portions are of wedge shape and pass between the surface of the car-axle and the inner surfaces of the ends of the dust-guard ring. The block 17 receives upon its opposite inclined edges the ends of the dust-guard ring and performs several functions, one being to keep the extreme edges of the ring from being engaged by and frayed or worn out under the action of the car-axle and another being to form a projecting portion, which, in connection with the ends of the dust-guard ring, will during the travel of the car engage the edge walls of the dust-guard space 12 and prevent the dust-guard from being carried around with the car-axle. The block 17 substantially fills the space between the vertical side walls 13 14 of the dust-guard chamber, as shown in Fig. 1, and in addition to its other duties serves as a bearing for the ends of the dust-guard ring and prevents the entrance of dust or other foreign matter through the space between the ends of the said ring, and also prevents the end edges of the dust-guard ring from being carried into the openings in the walls 13 14, through which the car-axle passes.

The band 16 is of spring metal and extends along the entire periphery of the flexible strip or ring 15 and over the ends of said ring, and said band 16 is secured at its ends to the ring 15 and at one or more intermediate points as may be necessary. The band 16 exerts a spring tension to close the strip or ring 15 against the car-axle, and without pulling, straining, or distorting the strip or ring 15 causes the same throughout its entire contacting surfaces to closely and uniformly hug against the axle. The band 16 will be slightly less in width than the dust-guard space 12, so as not to bind against the walls 13 14 thereof. During the insertion of the strip or ring 15 around the car-axle the band 16 will by reason of its tendency to curl around the axle aid in directing the said strip or ring to position, and after said strip or ring has been applied around the axle the band 16 will maintain it in proper position.

The strip or ring 15 may be applied to its operative position shown by first inserting one end thereof downward along one side of the car-axle and then feeding and pushing the ring in the direction of said end until said end has passed below and arisen along the opposite side of the car-axle to about the position shown, the block 17 being placed in position on the axle either before or after the ring 15 has been applied around the axle. The spring-band 16 causes the ring 15 to cling to and follow along the surface of the axle during the application of said ring to its operative position. The ring 15 will swell somewhat while in use, due to the oil taken up by it, but can be removed from the axle by pulling upward on one of its ends.

The flexible strip or ring 15 in its preferred form is rectangular in cross-section and of substantial proportions and formed from plaits each composed of a series of textile strands, as shown in Fig. 2. The plaiting of the strip or ring 15 is done a little loosely—that is, so that the body of the strip or ring 15 shall not be a rigid plaited body, but one capable of having an inherent yielding or spring-like action and adapted to absorb grease or oil and swell with such absorption to a sufficient extent to fill the space between the adjacent walls 13 14 of the dust-guard space without becoming unduly wedged in said space. The plaited strip or ring 15 is of great efficiency and durability and forms an absorbent body which as a dust-guard ring is highly advantageous.

I do not, of course, limit the invention in every particular to the employment of the loosely-plaited strip or ring 15, since the invention is one of merit apart from the special formation of the said strip or ring; but I do claim as a part of my invention the dust-guard strip or ring 15 when formed of the textile plaits and possessed of the characteristics hereinbefore described.

The invention is not limited in every instance to the employment of the spring-band 16, as will be understood from the claims hereinafter presented; but a part of the invention is limited to said spring-band 16 in the combinations in which said band is hereinafter claimed.

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

1. The dust-guard comprising the flexible strip 15 adapted to encircle the car-axle within the dust-guard space of the axle-box, said ring being substantially rectangular in cross-section and formed of loosely-plaited textile strands, so as to form a yielding and absorbent body, said strip or ring being of substantial proportions so as to effectually constitute the dust-guard proper, combined with a spring connected with said strip or ring and exerting its tension to keep said strip or ring against the car-axle; substantially as set forth.

2. The dust-guard comprising the flexible strip or ring adapted to the car-axle, and composed of the plaited textile strands, combined with the spring-band encircling the outer edges of said strip or ring and exerting its force to keep said strip or ring against the car-axle; substantially as set forth.

3. The dust-guard comprising a flexible strip or ring 15 of substantial proportions and constituting the dust-guard proper, said ring being of a width substantially equal to that of the space in the axle-box to receive it, combined with the spring-band 16 secured on the periphery of said strip or ring and having a normal tension to close said strip or ring with a uniform pressure around the car-axle, said spring-band 16 being also of sufficient flexibility and proper proportions to enable the strip or ring carrying it to be applied to and removed from its operative position without disturbing the car-axle; substantially as set forth.

4. The dust-guard comprising a flexible strip or ring 15 of substantial proportions and constituting the dust-guard proper, combined with the spring-band 16 secured on the periphery of said strip or ring and having a normal tension to close said strip or ring with a uniform pressure around the car-axle, and the approximately triangularly shaped block 17 interposed between the car-axle and the ends of said strip or ring, the said ends of said strip or ring being extended upon the opposite sides of said block; substantially as set forth.

5. The dust-guard comprising the flexible strip or ring 15 of plaited textile strands, the spring-band 16 on the outer edges on said strip or ring and exerting its force to close said strip or ring around the axle, and the block 17 interposed between the ends of said strip or ring and the car-axle; substantially as set forth.

6. The dust-guard comprising the flexible strip or ring 15 of textile plaits, and the block 17 interposed between the ends of said strip or ring, combined with a spring connected with said strip or ring and exerting its force to draw said strip or ring against the car-axle; substantially as set forth.

Signed at Topeka, in the county of Shawnee and State of Kansas, this 8th day of March, A. D. 1901.

SETH A. CRONE.

Witnesses:
GEO. W. HOWARD,
D. B. NEVINS.