(No Model.)

3 Sheets—Sheet 1.

J. S. PATTEN.

DUST GUARD AND AXLE WIPER.

No. 600,797. Patented Mar. 15, 1898.

Fig. 1.

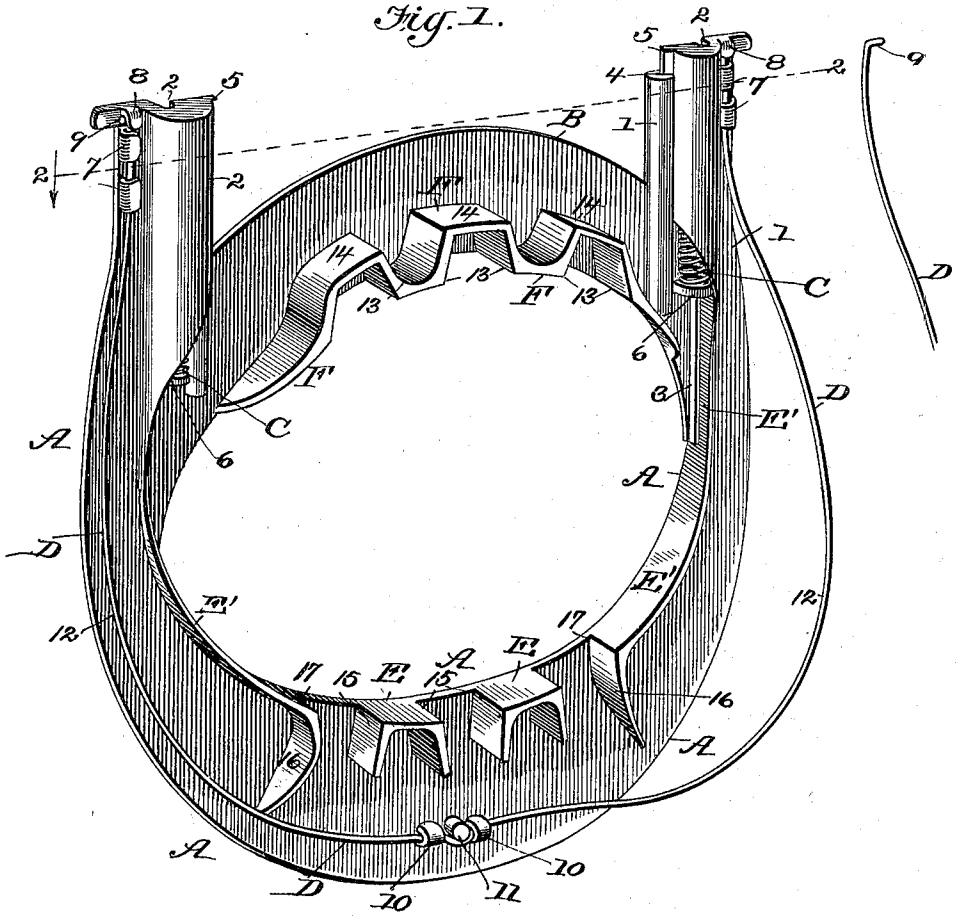
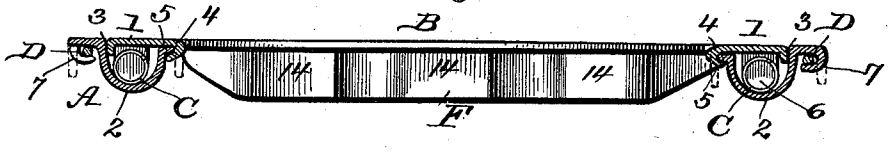


Fig. 2.



WITNESSES:

Jos. A. Ryan

Amos W. Hart

INVENTOR

James S. Patten

BY Munn & Co.

ATTORNEYS.

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

(No Model.) 3 Sheets—Sheet 2

J. S. PATTEN.

DUST GUARD AND AXLE WIPER.

No. 600,797. Patented Mar. 15, 1898.

Fig. 3.

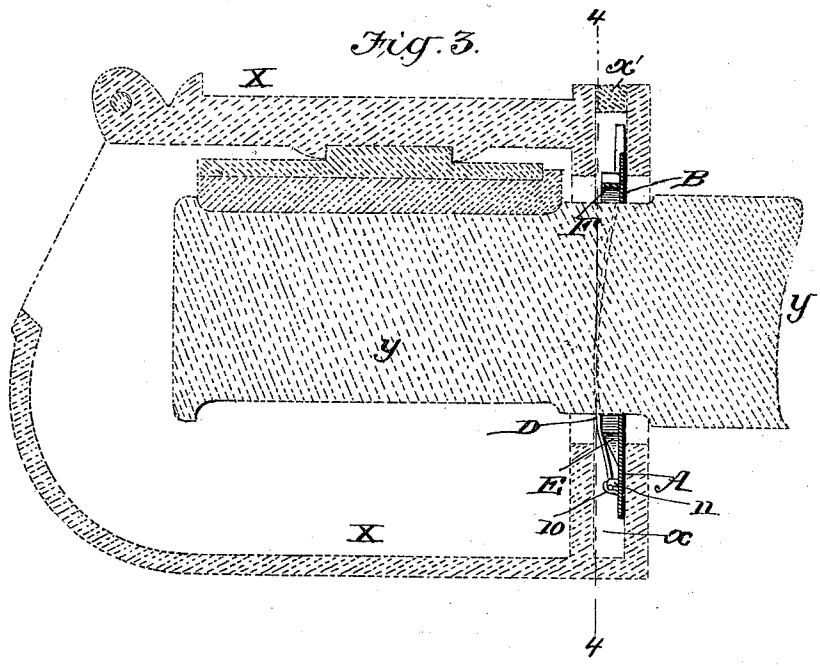


Fig. 4.

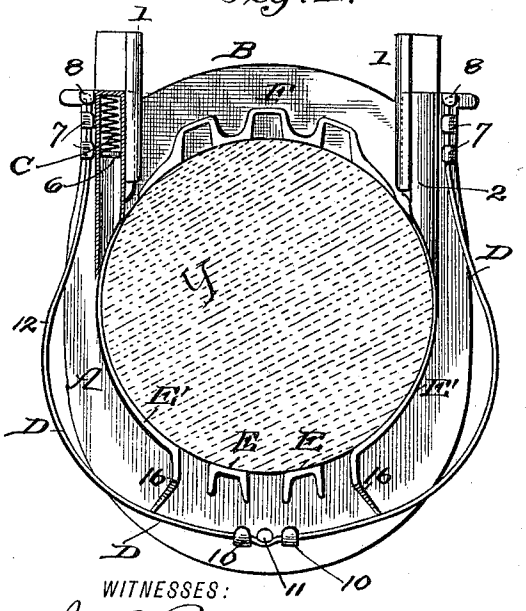
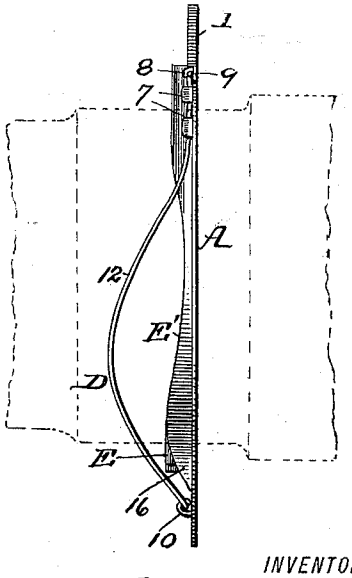


Fig. 5.



WITNESSES:

Jos. A. Ryan

Amos W. Hart

INVENTOR

James S. Patten.

BY Munn & Co.

ATTORNEYS.

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

(No Model.) 3 Sheets—Sheet 3.

J. S. PATTEN.

DUST GUARD AND AXLE WIPER.

No. 600,797. Patented Mar. 15, 1898.

Fig. 6.

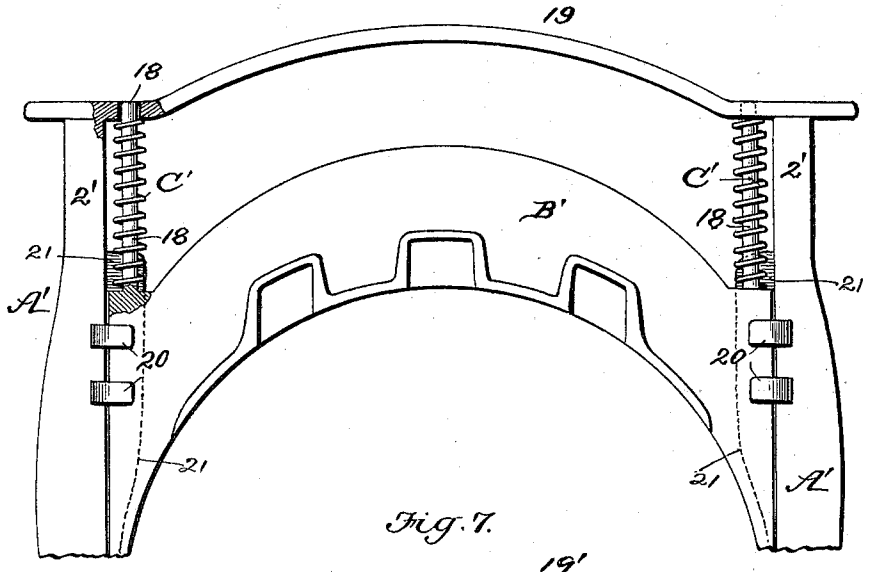
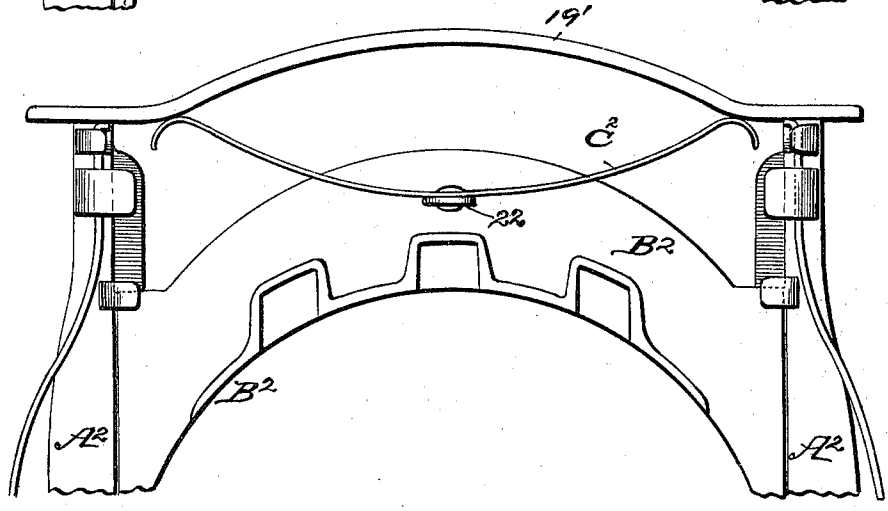


Fig. 7.



WITNESSES:
Jos. A. Ryan
Amos W. Hart

INVENTOR
James S. Patten
BY Munn & Co.
ATTORNEYS.

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

UNITED STATES PATENT OFFICE.

JAMES S. PATTEN, OF BALTIMORE, MARYLAND.

DUST-GUARD AND AXLE-WIPER.

SPECIFICATION forming part of Letters Patent No. 600,797, dated March 15, 1898.

Application filed April 26, 1897. Serial No. 633,985. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. PATTEN, of Baltimore city, in the State of Maryland, have invented a new and useful Improvement in Dust-Guards and Axle-Wipers, of which the following is a specification.

This invention is an improvement in the class of dust-guards which are formed of two parts adapted to embrace the car-axle and held in elastic contact therewith by means of springs, an example of which appears in my application for Letters Patent, filed December 26, 1896, Serial No. 617,069. In such former invention the two slidable members constituting the body of the device were constructed of wood and the springs for drawing the said members toward each other and supporting the guard as a whole were attached to a cap or top bar adapted to rest on the top of the axle-box.

My present invention embodies improvements in the form, construction, material, arrangement, and connection of parts, as hereinafter specified.

In the accompanying drawings, three sheets, Figure 1 is a perspective view of my improved dust-guard. Fig. 2 is a cross-section on line 2 2 of Fig. 1. Fig. 3, Sheet 2, is a longitudinal central section of a car-axle box and journal to which my dust-guard is shown applied. Fig. 4 is a vertical transverse section on line 4 4 of Fig. 3. Fig. 5 is a side view of the dust-guard. Figs. 6 and 7, Sheet 3, are inner side views of the upper portion of modified forms of dust-guard.

The car-axle box X and axle-journal Y are shown constructed and arranged in the usual way, and the dust-guard is also arranged, as usual, in the rear pocket or chamber x of the axle-box. When the dust-guard has been inserted in said pocket x, a wooden cap or filling-piece x' is forced tightly in at the top of the pocket for the purpose of excluding dust, &c., at that point. It may be easily removed when required.

I will first describe the preferred form of my invention, which is shown in Figs. 1 to 5, inclusive. The dust-guard proper, Fig. 1, is formed of a lower member A, whose inner edge is curved to fit the lower portion and sides of the axle Y, Fig. 4, and an upper member B, that slides between the vertical parallel arms 1 of said member A and whose concave inner edge fits upon the top portion of the axle. Springs C, Fig. 4, are interposed between certain parts of said members A B to force them toward each other and hold them in close contact with the axle. A wire spring D is attached to the lower member A for the purpose of holding the guard pressed tightly against the rear wall of the axle-box pocket x, as shown in Fig. 3, so as to more effectually exclude dust. Both members A and B are provided at their concave edges with internal lateral projections or flanges E F of peculiar construction, whose functions are to scrape or wipe oil from the axle and take the wear due to friction with the latter as well as strengthen the guard members. Each member A and B is constructed integrally of metal, preferably flexible cast-brass.

Having thus indicated the main portions of the device, I will describe the same with more detail.

The bodies or main portions of the members A and B are thin and flat and their outer faces, Figs. 2 and 5, are arranged flush or in the same plane and maintain such relative position under all the conditions of actual use. The lower member A has an approximately horseshoe shape, while the body of the upper member B is approximately segmental. Said member B has vertical ears 1 at its ends, which are suitably constructed to adapt them to engage and slide upon the parallel ears or arms 2 of member A—that is to say, the flat ears 1 have a right-angular rib or flange 3, Fig. 2, at their outer edges and a parallel hook-flange 4 at the opposite or inner side edges.

The upper ends of arms 2 of member A are extended inward and so constructed as to form hollow semicylindrical portions, which, together with the ears 1 of member B, serve as pocket-like keepers and protectors for the helical springs C, in which the springs are completely inclosed when the members A and B are adjusted in the position they occupy when the guard is applied to an axle-journal, as shown in Fig. 4. The inner edges of such spring-keepers 2 have lateral flanges 5, that fit beneath the hook-flanges 4 of ears 1, (see Fig. 2,) and the angular ribs or flanges 3 of the latter bear against the inner side of the semicylindrical spring-keepers 2. The springs C

bear against the upper ends of the keepers 2, Fig. 4, and upon lugs 6, projecting laterally from the ears 1 of member B. In other words, the springs abut opposite portions of the respective members, and thus press upon the latter in opposite directions and tend to force them together.

The spring D is formed of a single piece of wire, which is secured to member A by means of flexible prongs or clasps formed integrally with the latter—that is to say, when the member A is cast the several prongs project at right angles to it, as shown by dotted lines, Fig. 2, so that they offer no obstruction to drawing from the mold, and when the spring D is applied they are bent inward over it and clasp it tightly. It will be noted that there are three such prongs and clasps 7 and 8 arranged at upper end of arms 1, two, 7, clasping the body of the wire D, while the uppermost ones, 8, clasp the right-angular ends 9 of the same. At the bottom of member A there are two such clasping-prongs 10 and a stud or lug 11, arranged intermediately, for the purpose of confining the spring D, so that it cannot slide or shift laterally. The side portions 12 of the spring that intervene the upper and lower sets of clasps are bent outward, so as to form curves that stand off from both the rear face and side edges of member A, whereby they are adapted to press with due force against the inner wall and sides of the axle-box pocket *x*, and thus hold the dust-guard firmly in due position. It will be seen that the angular form of the upper ends 9 of said spring and the upper clasps 8, that engage them, serves to prevent rotation of the spring by reason of pressure on the bends or curves 12, and such resistance obviously stiffens the bends 12 without preventing such torsion and compression of the same as are required to enable the guard to be inserted in and removed from the axle-box pocket *x* without too great difficulty.

The upper member B is provided with a corrugated or sinuous flange F on the inner side adjacent to its concave edge and conforming to the curvature thereof. The lateral angles 13 of the broad lower portions of such flange F as are in contact with the axle, Fig. 4, serve as scrapers or wipers for the upper position of the latter, while the intervening or bridging portions 14, that are removed from the axle, serve to strengthen the upper member B and also afford additional means for excluding dirt and dust from the intervening spaces. The lower member A is also provided with a flange, which is interrupted, so as to form disconnected axle scraping or wiping portions E, having angles 15. The spaces between such wipers allow oil removed by the latter to pass down freely between them. The side flanges E′ extend along the concave side edges of the member A, joining or merging at their upper ends with the spring-keepers 2, and terminating at their lower ends in wings 16, that are beveled or tapered downward, so that they may serve as guides in introducing the guard into pocket *x*, at which time they work in sliding contact with the front wall of the latter. They also brace and strengthen the thin body of the plate A transversely; but their main purpose is to prevent the under side of the flange E from being lodged upon the inner wall of the axle-box X and then mashed when the journal makes an end thrust.

In the modification shown in Fig. 6 the helical springs C′ encircle guide-pins 18, which are cast with or else rigidly attached to the member B′ and slide through holes in a cap or bridge 19, which rigidly connects the arms 2′ of member A′. This part 19, together with the clasps 20 and flange 21, takes the place of the means before described, and shown in Figs. 1 to 5, for connecting the members A B and guiding them in their sliding movement on each other. It will be seen that, as in the first case, the springs C′ are interposed between parts A B and arranged in rear of their flush faces.

In Fig. 7 a curved plate-spring C^2 is riveted to a central lug 22 of part B^2, and its curved free ends bear upward against the cap or bridge 19′. Thus the spring is arranged in rear of the flush faces of the members A^2 and B^2, as in the instances before described.

The parts A^2 B^2 are adapted to slide on each other, as shown in Fig. 6.

What I claim is—

1. The dust-guard proper, composed of two metallic members and helical springs arranged in inclosing keepers which are composed of integral, semicircular portions formed on one member, and integral face portions formed on the other member, such portions being arranged opposite and adapted to slide on each other, and the upper member having lateral lugs that form supports for the springs and slide with them into the keepers or pockets when the guard is adjusted to an axle-journal, as shown and described.

2. A dust-guard comprising upper and lower members provided with vertical, parallel guiding ears or arms having clasping or engaging portions that connect the members and yet permit them to slide on each other, the said clasping portions forming opposite sides of spring-inclosures and having opposing abutments, and helical springs arranged between and bearing against the abutments, substantially as shown and described.

3. The improved dust-guard comprising upper and lower slidable members having parallel guiding ears, or arms, the ears of the upper member having a hook-flange, and the lower member a semicircular portion whose lip or edge fits and works beneath said flange, helical springs that lie between and are held parallel to such guides, and end abutments for the same, substantially as shown and described.

4. The combined dust-guard and axle-wiper having its lower member constructed of metal

having a lateral, integral, interrupted flange, or series of separated projections whose upper sides are coincident or flush with the concave edge of said member, and having angular upper corners, substantially as shown and described.

5. The combined dust-guard and journal-wiper, whose lower member is constructed of metal and provided with the lateral, concave, integral flanges E, E', that terminate in the tapered and beveled guides and braces 16, extending down on the inner face of said member, as shown and described, for the purpose specified.

6. The combined dust-guard and axle-wiper whose upper member is provided with a flange having separated portions that are flush with its concave edge and formed with angular corners or lateral edges, as shown and described.

7. The combined dust-guard and axle-wiper whose upper member is constructed of metal and provided with an integral, lateral flange which is continuous, but corrugated or sinuous, the same having angular wiping portions that are flush with the concave edge, and intermediate bridging portions that serve as caps for the spaces between such wiping portions, as shown and described.

8. The combination of the wire spring with the dust-guard composed of two metallic parts or members, the upper member of the same having integral, flexible prongs or clasps at its upper ends, which confine the ends of the spring, and the lower member having similar clasps that hold the middle portion of said spring, as shown and described.

9. The combination with the dust-guard formed of flexible metal and having clasps 10, and an intermediate stud, of a wire spring for the purpose specified, the same being secured at its ends and intermediately by said clasps and stud, as shown and described.

JAMES S. PATTEN.

Witnesses:
AMOS W. HART,
JOS. A. RYAN.