(No Model.)

L. FREIDEL.

CAR AXLE BOX LID.

No. 406,721. Patented July 9, 1889.

Fig. 1.

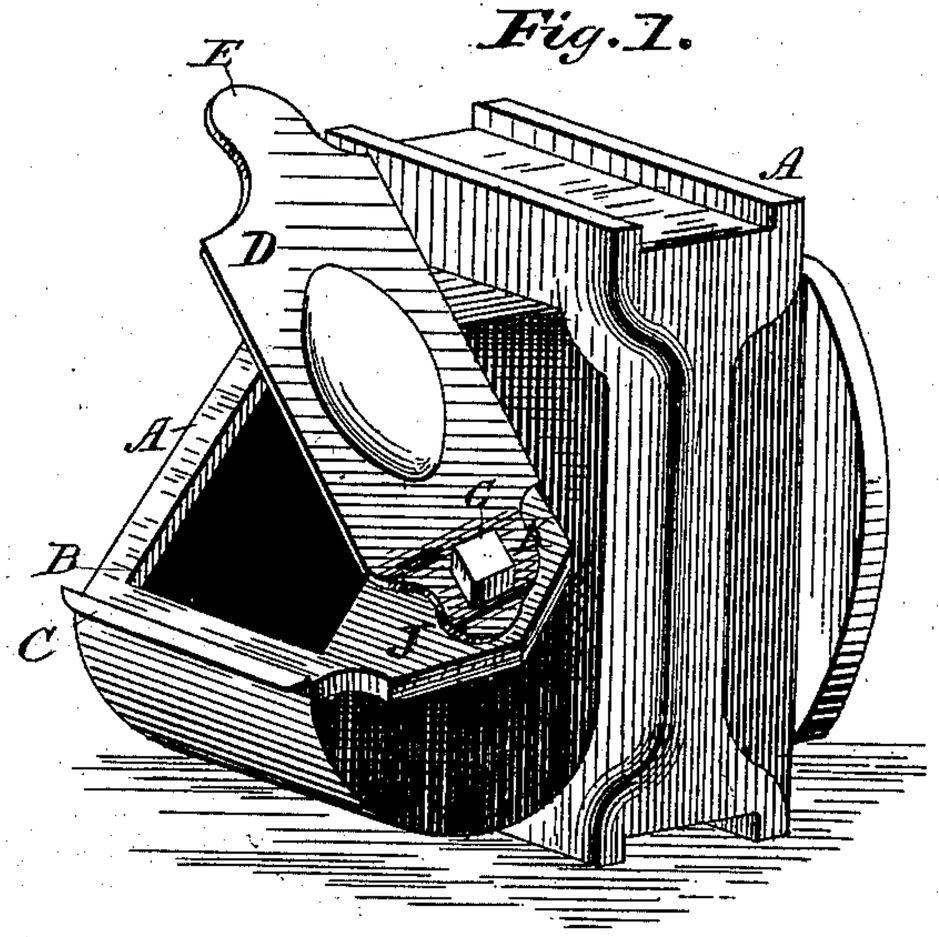

Fig. 2

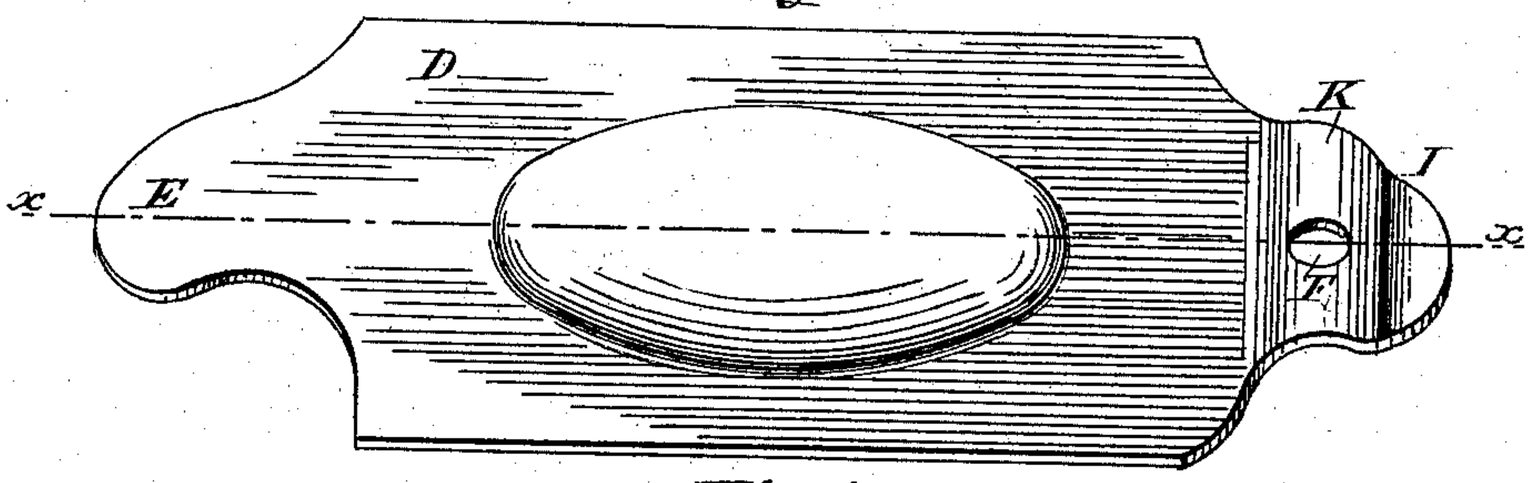

Fig. 3.

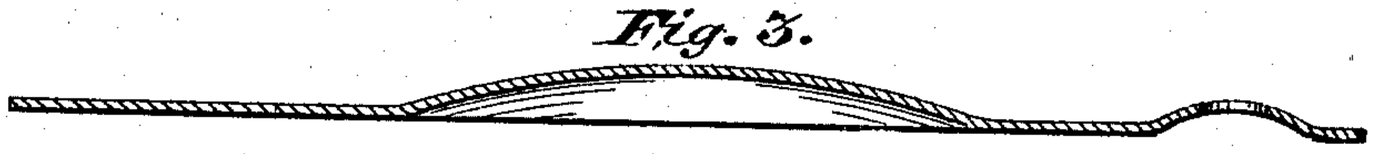

Fig. 4.

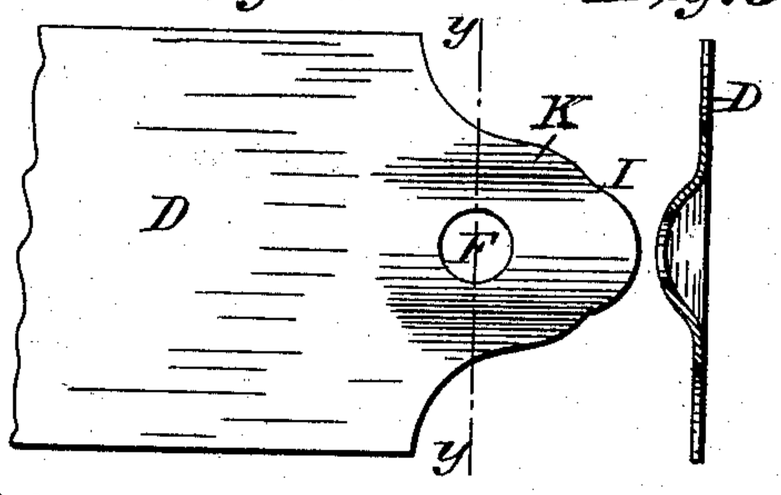

Fig. 5.

Fig. 6.

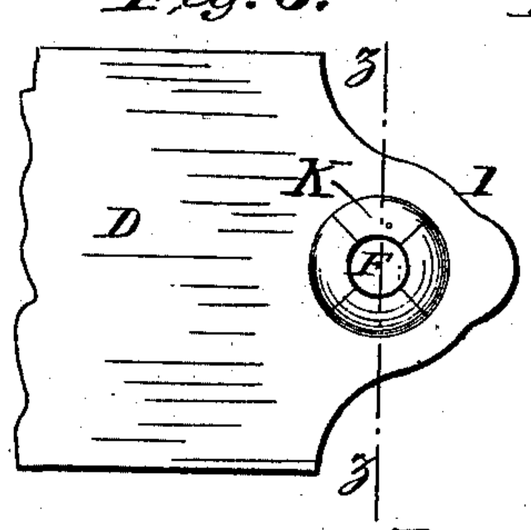

Fig. 7.

Witnesses:

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UNITED STATES PATENT OFFICE.

LEONARD FREIDEL, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE MORRIS BOX LID COMPANY, OF SAME PLACE.

CAR-AXLE-BOX LID.

SPECIFICATION forming part of Letters Patent No. 406,721, dated July 9, 1889.

Application filed May 16, 1889. Serial No. 310,994. (No model.)

To all whom it may concern:

Be it known that I, LEONARD FREIDEL, a citizen of the United States, residing at Pittsburg, county of Allegheny, and State of Pennsylvania, have invented new and useful Improvements in Car-Axle-Box Lids, of which the following is a specification.

My improvement relates to what is known as the "steel box lid or cover" for car-axle boxes, in which the lid is pivoted to the box so that it may be swung or turned edgewise thereon to uncover it, and in which the lid is held firmly in its closed and in its open position upon the box by means of the clamping action of a spring integral with the lid; and the object of my improvement is to provide such clamping-spring, of simple and effective construction, in the body of the lid, at the perforation for the pivot-bolt, by means of an outward swell or bulge which bounds said perforation and which forms the bearing for the pivot-bolt head, as illustrated in the accompanying drawings, and as I shall now describe, and particularly point out in the claims concluding this specification, the particular matter of my improvement.

Referring to the drawings, Figure 1 represents a view in perspective of a car-axle box provided with my improved lid; Fig. 2, a view of the lid; Fig. 3, a longitudinal section of the same on the line *x x*, Fig. 2; Fig. 4, a view of a modified form of the swell clamping-spring of the lid; Fig. 5, a transverse section of the same on the line *y y*, Fig. 4; Fig. 6, a view of another modified form of the swell clamping-spring of the lid; and Fig. 7 a transverse section of said lid on the line *z z*, Fig. 6.

In the drawings, the letter A indicates the axle-box, which may be of any desired or suitable construction, and which is formed with the usual opening B in its front. The upper and lower edges of said opening may be formed with horizontal ribs or shoulders C, for confining the lid in position when closed.

The lid D is formed of sheet-steel, with a suitable handle E at its free end, and has a hole F in the other end for the insertion of the pivotal bolt G, upon which the lid swings edgewise and which pivotally secures said lid to the axle-box. The end of the lid which has the hole F is properly cut or trimmed to form a tongue I, which is narrower than the lid, so as to form a bearing upon a perforated bearing J, which projects from the side of the axle-box and to which the lid is pivoted.

The lid-tongue I is formed with a bulge or corrugation K, bounding the hole F, and the convex side of said bulge or corrugation faces outward, so that the head of the pivotal bolt may bear against the same.

The lid is made from sheet metal—such as sheet-steel—and consequently the bulge or corrugation K is possessed of sufficient elasticity to admit of the lid being sufficiently raised against the head of the bolt from between the ribs or shoulders of the axle-box to be swung open and held and to admit of the lid springing back into and being retained with a close joint in its seat when swung closed.

The form of the bulge may be changed without changing its function. Thus it is shown as longitudinal to the lid in Figs. 4 and 5 of the drawings and round or dome-shaped in Figs. 6 and 7, in which latter figures a form of bulge is shown which is spherical, or nearly so, and has the hole for the bolt formed through its center. As the bulged edges of the hole of the spherical swell would not possess sufficient freedom to yield when the lid is raised, said bulged edges have radial slits, which give a perfect freedom for the elasticity of the bulge to admit of opening and closing the lid.

It will be obvious that this car-axle-box lid may be manufactured at a comparatively small cost, inasmuch as the lid and its spring-bulge may be stamped into shape in one operation. The lid with its spring-bulge thus formed will be strong and durable, and the spring formed as a border at the perforation gives compactness.

Referring to Fig. 1 it will be seen that the end of the tongue I forms a bearing upon the box projection J, and that the corrugation or bulge K is formed transversely in said tongue and extends to its edges, so as to give it the function of a spring, while in Figs. 4 and 5 the corrugation or bulge is formed in the line of the length of the lid and extends to the

end of the tongue, so as to give it the function of a spring; but, however formed, it must bound or border the eye or perforation F in the body of the lid itself.

The lid may be formed with a central swell to give it greater stiffness and strength.

I claim as my improvement—

1. A car-axle-box lid formed with an elastic or spring bulge or swell bounding or bordering the perforation for the pivotal bolt of said lid, substantially as described.

2. A car-axle-box lid formed of sheet spring metal and with an elastic swell or bulge at the pivotal end and a hole through said bulge, substantially as described.

3. A car-axle-box lid formed of sheet spring metal and with an outward bulge or corrugation transverse to its length at one end and with a hole through said bulge or corrugation, substantially as described.

4. In combination with a car-axle box, a lid formed of sheet spring metal and with an outward bulge at one end bounding or bordering a hole through said bulge, and a pivotal bolt inserted through said hole into the box and bearing with its head against the convex side of the bulge, substantially as described.

5. In combination with the car-axle box having the opening B and rib or shoulder C at the lower edge of said opening, a lid formed of sheet-steel and with a tongue at one end having an outwardly-bulging transverse corrugation, and a hole through the same, and a bolt inserted through said hole into the box and bearing with its head against the convex side of the corrugation, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LEONARD FREIDEL.

Witnesses:
HENRY PETER,
WALTER F. WEITERSHAUSEN.