

(No Model.)

E. U. BENEDICT.
CAR AXLE BOX.

No. 416,890.

Patented Dec. 10, 1889.

Fig. 1.

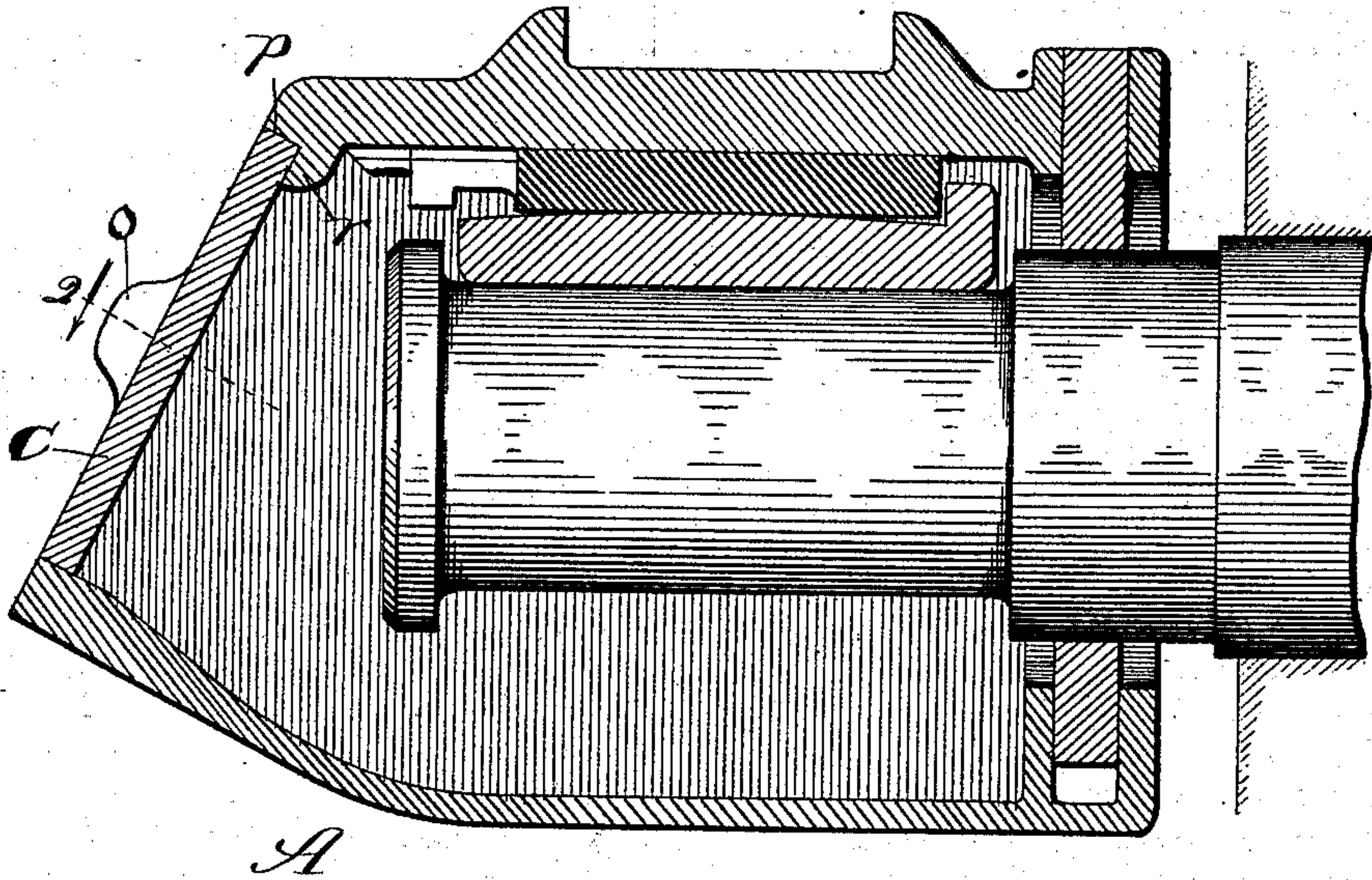


Fig. 2.

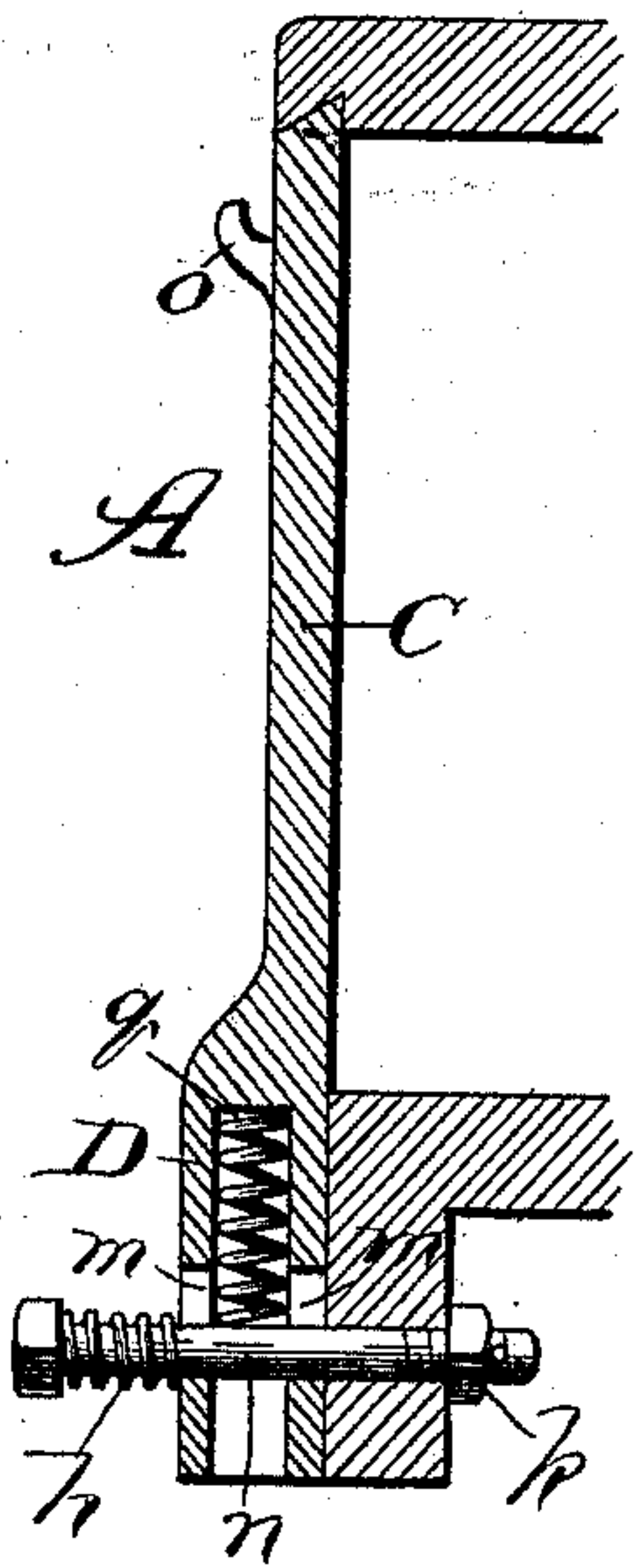
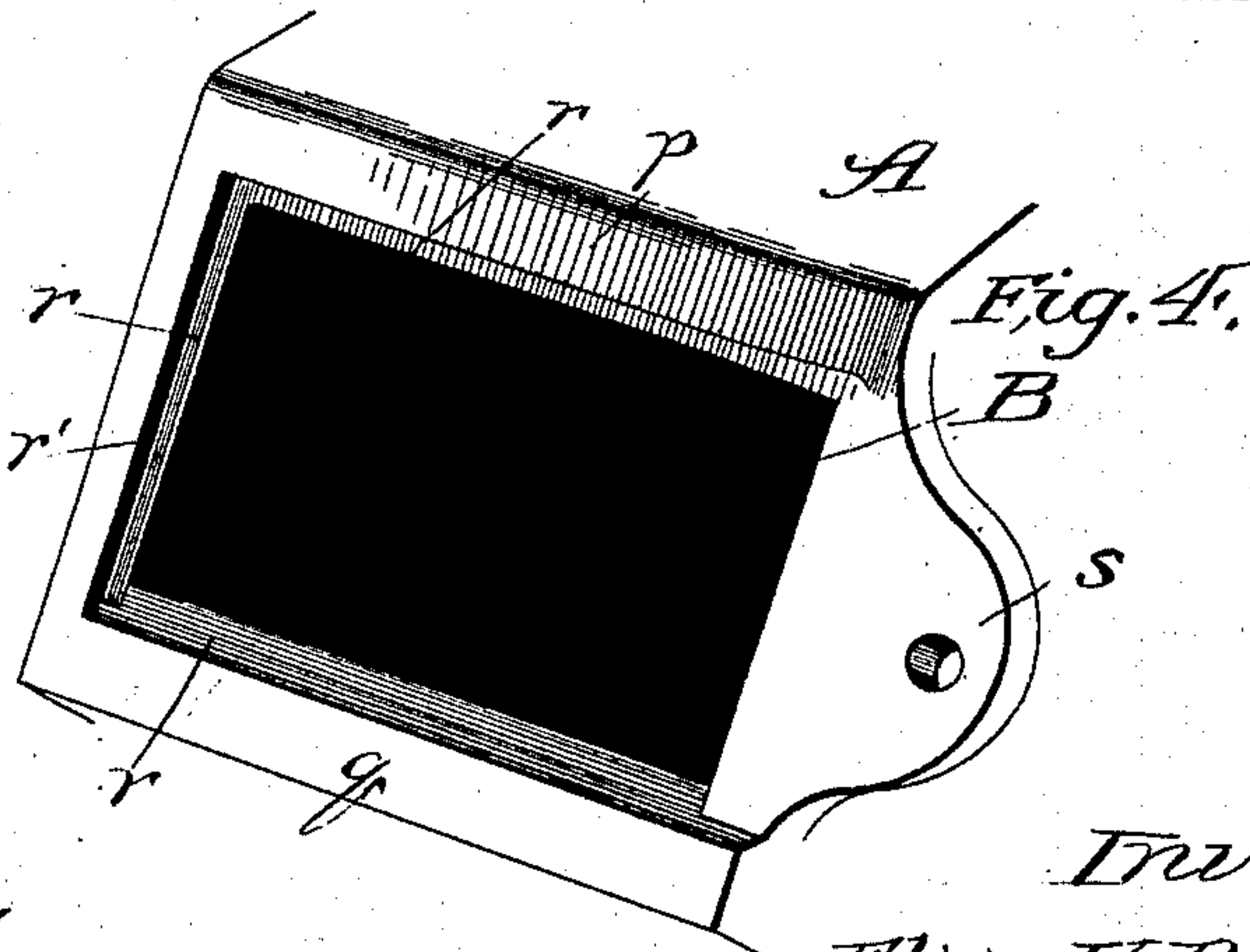
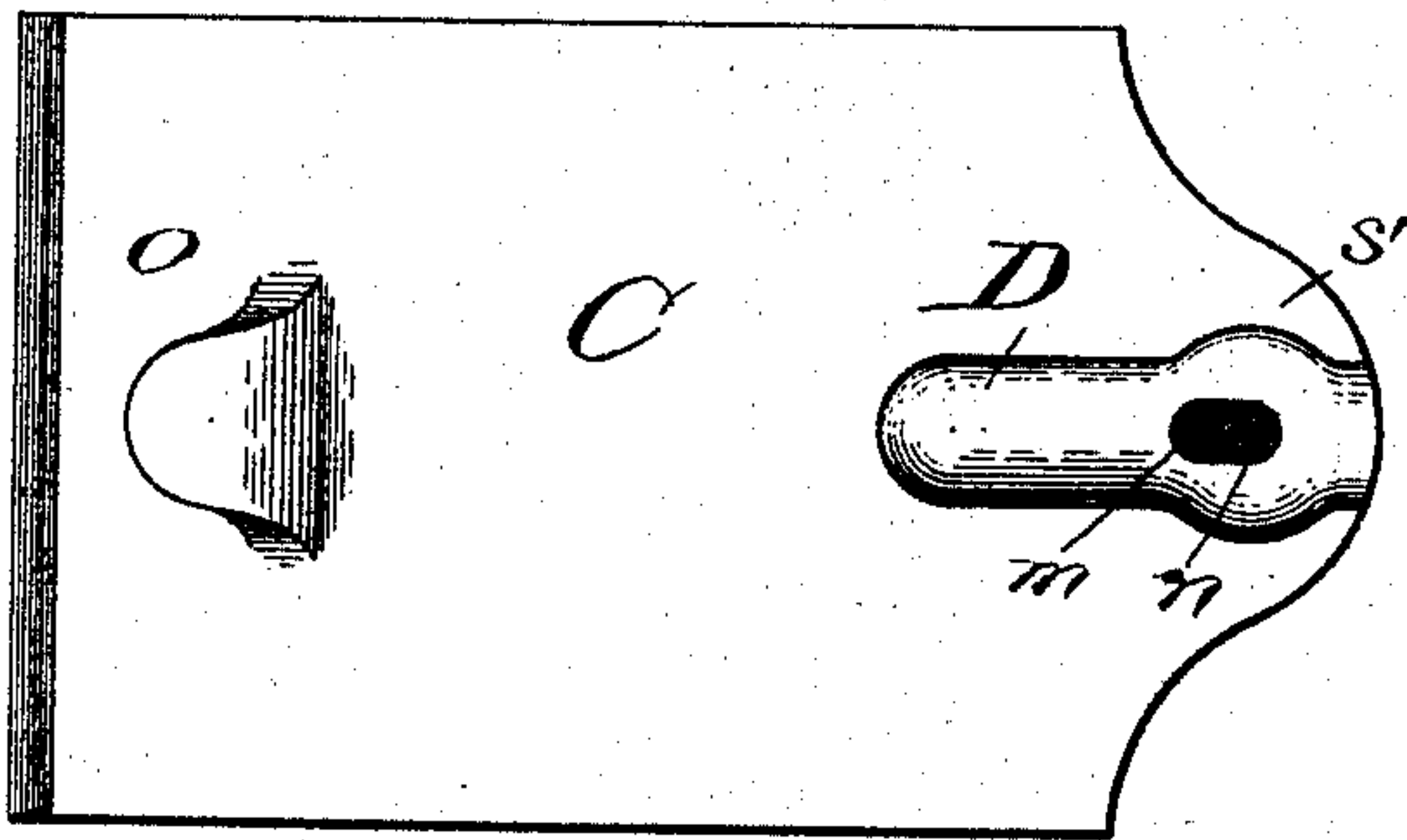


Fig. 3.



Witnesses:
Chas. E. Gaylord,
J. A. Dyrenforth

Inventor:
Elias V. Benedict,
By Dyrenforth & Dyrenforth,
Attys

UNITED STATES PATENT OFFICE.

ELIAS U. BENEDICT, OF AURORA, ILLINOIS.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 416,890, dated December 10, 1889.

Application filed July 13, 1889. Serial No. 317,413. (No model.)

To all whom it may concern:

Be it known that I, ELIAS U. BENEDICT, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Car-Axle Boxes, of which the following is a specification.

My invention relates particularly to an improvement in the lid for covering the opening leading to the interior of the axle-box for a railroad-car, and it relates especially to an improvement on the construction of lid for the inclined box-opening secured in position by a pivot-bolt surrounded by a spiral spring confined between a head on the bolt and the outer surface of the lid, and designed to exert pressure against the latter and thereby tend to maintain it when closed against its seat, the lid being thus adapted to be turned on its pivot to open and close the box.

The object of my invention is to provide a construction of axle-box which when closed shall effectually cover the opening of the box it is designed to shield, which shall tend to prevent oil thrown from the axle by its rotation against the inner surface of the box-lid from escaping to and running down the outside of the box, and which shall be capable of ready manipulation for opening and closing the axle-box.

In the accompanying drawings, Figure 1 is a sectional view in side elevation of an axle-box shown as in position on the axle and provided with a lid of my improved construction; Fig. 2, a section taken on the line 2 of Fig. 1 and viewed in the direction of the arrow; Fig. 3, an upper plan view of the lid, and Fig. 4 a broken perspective view showing the outer inclined end of the box and the seat for the box-lid.

A is an axle-box of ordinary or suitable construction, and having a seat *r* at three inner sides of its opening B, and a perforated lug *s*, extending from the end at which the lid is pivoted, as hereinafter described, the upper surface of the lug and end from which it extends being flush with that of the seat *r*. The lateral upper and lower margins *p* and *q* may be, so far as their guiding function is concerned, the same as on other axle-boxes, though I prefer that the latter should serve as a stop to the turning of the lid, hereinafter

described, downward or toward the left from its closed position, and that the former should be beveled on its front side from near its left hand to its opposite end to permit the lid to pass over it the more readily in being turned to open the box. The left-hand margin *r'* of the opening B should be somewhat oblique on its inner side, as shown, or otherwise adapted to fit the free edge of the box-lid.

C is the lid, conforming in general shape to that of the opening B, and having formed on its outer side, near one end, a lug *s'*, like the lug *s* on the box, and a pocket D, and it is somewhat beveled, by preference, or otherwise adapted at its opposite end to fit against the correspondingly-beveled margin *r'*, and provided near its beveled end with a hook *o* or analogous means, to serve a purpose hereinafter explained.

A bolt *n* or pin is passed through elongated openings *m*, formed in the top and base of the pocket, and through an opening in the lug *s* of the box-opening B, being fastened by a nut *k* on its inner end and provided with a head *i* at its outer end, between which head and the surface of the pocket is confined a compressed spiral spring *h* around the bolt. Inside the pocket is a spring confined at opposite ends, respectively, between the pivot-bolt *n*, thus affording a stop, and the forward wall of the pocket, which thus constitutes a spring-seat, and may be modified as to construction without impairing it for its purpose.

When the lid is closed, the spring (which has been compressed by opening it) holds it with its free edge against the margin *r'*, and if the latter and the lid be beveled, as described, and as it preferably is, the lid is also thereby confined against being forced outward by pressure against its inner side, and thus assures tight closure of the box. To open the box, the operator, who should employ a suitable instrument for the purpose, as a rod with a hook formed on one extremity, applies the instrument to the hook *o*, to pull the lid against the spring *g*, at the same time slightly raising it toward the free end from its seat to clear the margin *p*, when it is free to be turned to the right to uncover the opening B. The spring *h* serves to tend to maintain the lid while being turned against its seat toward its pivoted end. To effect closing of the box, the

lid is again pulled against the spring g and turned on its pivot till coincident with its seat, when it is released and shot forward by the resilience of the spring compressed by the withdrawal of the lid.

The point of pivoting the lid need not be at the right-hand side of the box, but may be, if desired, at the top of the box-opening, when of course the beveled margin p could be provided at the right-hand side of the opening, the margin q at the opposite side and the margin r' at the base of the opening.

A further advantage, due to my improved construction, consists in the tendency of the lid C to retain in the box all oil thrown against its inner side from the axle by its centrifugal action, by causing the oil thus thrown to drip down inside the box, thereby saving it and tending to keep the outside of the box clean. As the covers of axle-boxes have hitherto been commonly constructed the inside surface of the cover is on the outside of the box, whereby oil thrown against the inner side of the cover runs down on the outside of the oil-box and is not only thus wasted, but tends to produce accumulation of dust. As will be clearly seen on inspection of Fig. 1 of the drawings, the lower edge of the lid C is flush with the inner surface of the base of the oil-box, the downward inclination of which is regular from the opening B in the sense that it is devoid of such irregularities as would afford lodgment to oil trickling down the lid, and would lead the oil to the exterior of the box.

With my improved construction obviously all the oil which is thrown against the inner side of the box-lid must run back into the box and be saved.

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

1. An axle-box lid having a lug s' , extending from one end, a pocket D , formed on the top of the lid and lug and provided with an elongated opening m , extending transversely

through it and the lug s' , a bolt n , extending through the elongated opening and having a spring h , confined upon its outer projecting portion, and a spring q , confined in the pocket between an end thereof and the bolt n , substantially as and for the purpose set forth.

2. In combination, an axle-box A , having a perforated lug s at one side of its opening B , and a lid C , having a lug s' , extending from one end, a pocket D , formed on the top of the lid and lug s' and provided with an elongated opening m , extending transversely through it and the lug s' , a bolt n , extending through the elongated opening and perforated lug s and having a spring h , confined upon its outer projecting portion, and a spring q , confined in the pocket between an end thereof and the bolt n , substantially as and for the purpose set forth.

3. In combination, an axle-box A , having an opening B , and its base regularly inclining downward from the opening, and a lid C , adjusted to cover the opening, with its inner surface entirely within the box and with its lower edge flush with the lower inclined inner surface of the box, substantially as and for the purpose set forth.

4. In combination, an axle-box A , having a seat r for the lid and a margin r' at one side of its opening B , a stop-margin q at the base, a beveled margin p at the top and a lug s at the opposite side thereof, and a lid C , provided toward one end with a lug s' and with a pocket D , containing a spring g and having elongated openings m , a pin n , extending through the openings m and lug s and pivotally securing the lid to the box, and a hook o or the like on the lid, substantially as described.

ELIAS U. BENEDICT.

In presence of—

J. W. DYRENFORTH,
C. N. WHITE.