

(No Model.)

O. S. STEARNS.
CAR AXLE BOX.

No. 282,796.

Patented Aug. 7, 1883.

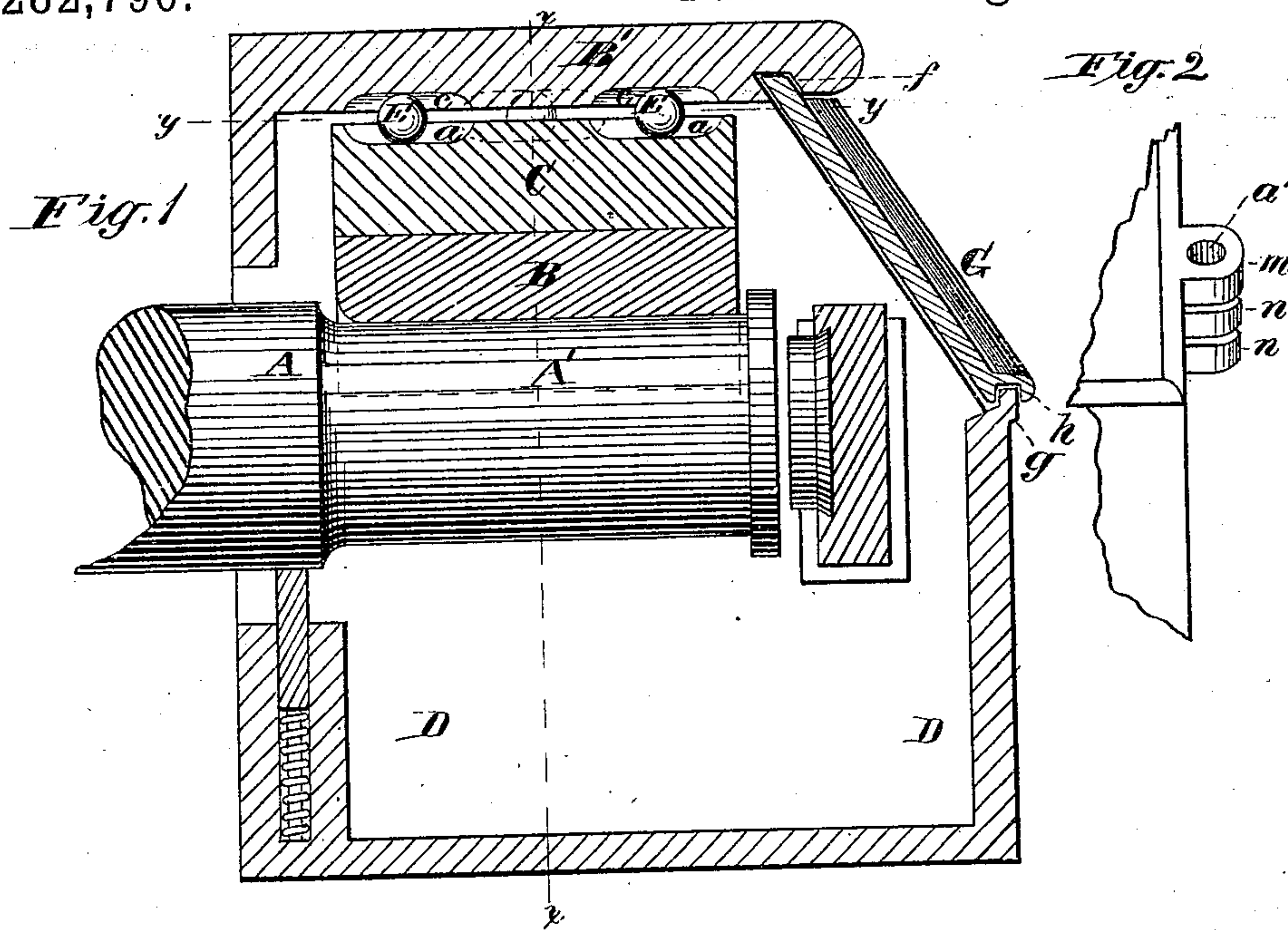


Fig. 3

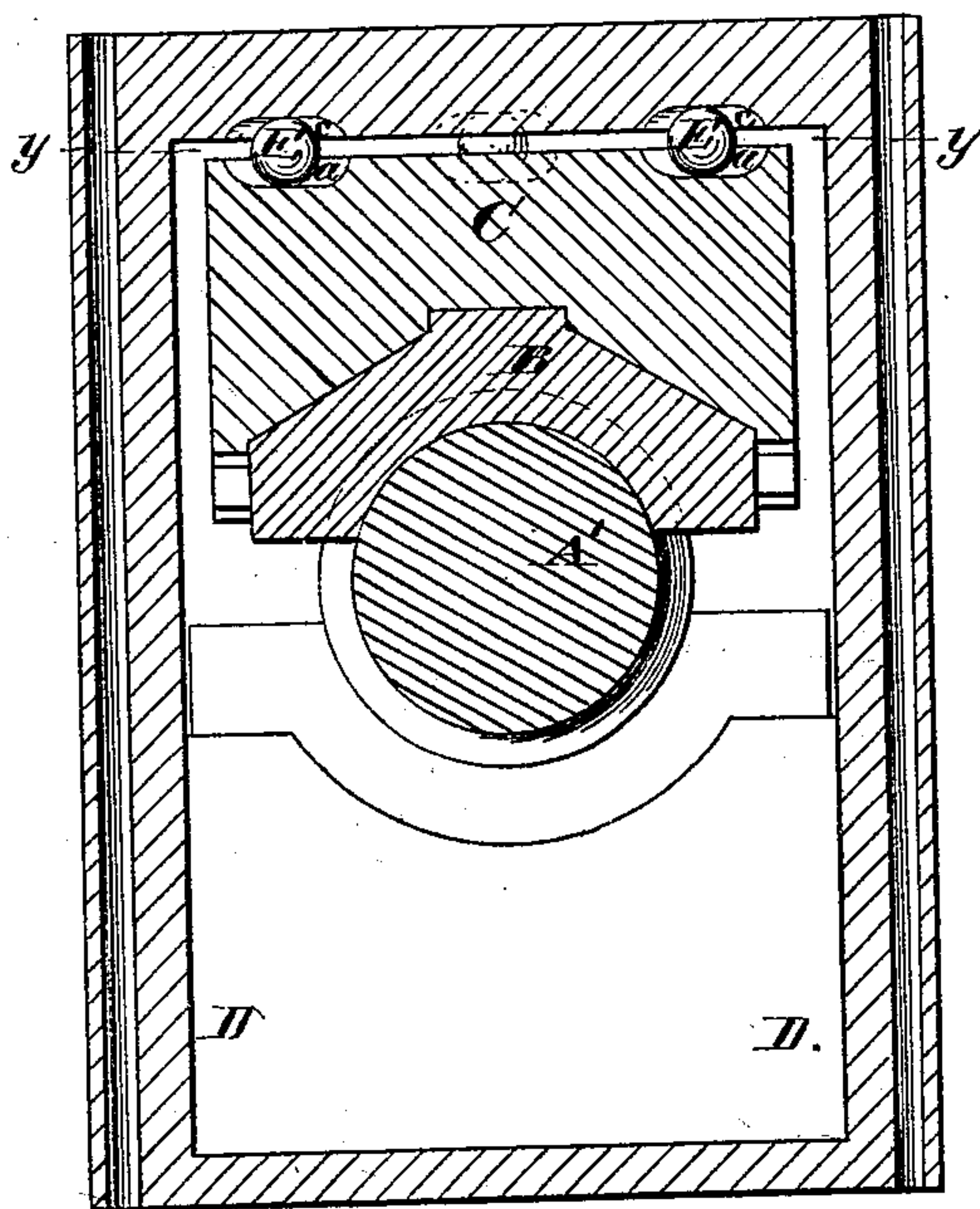
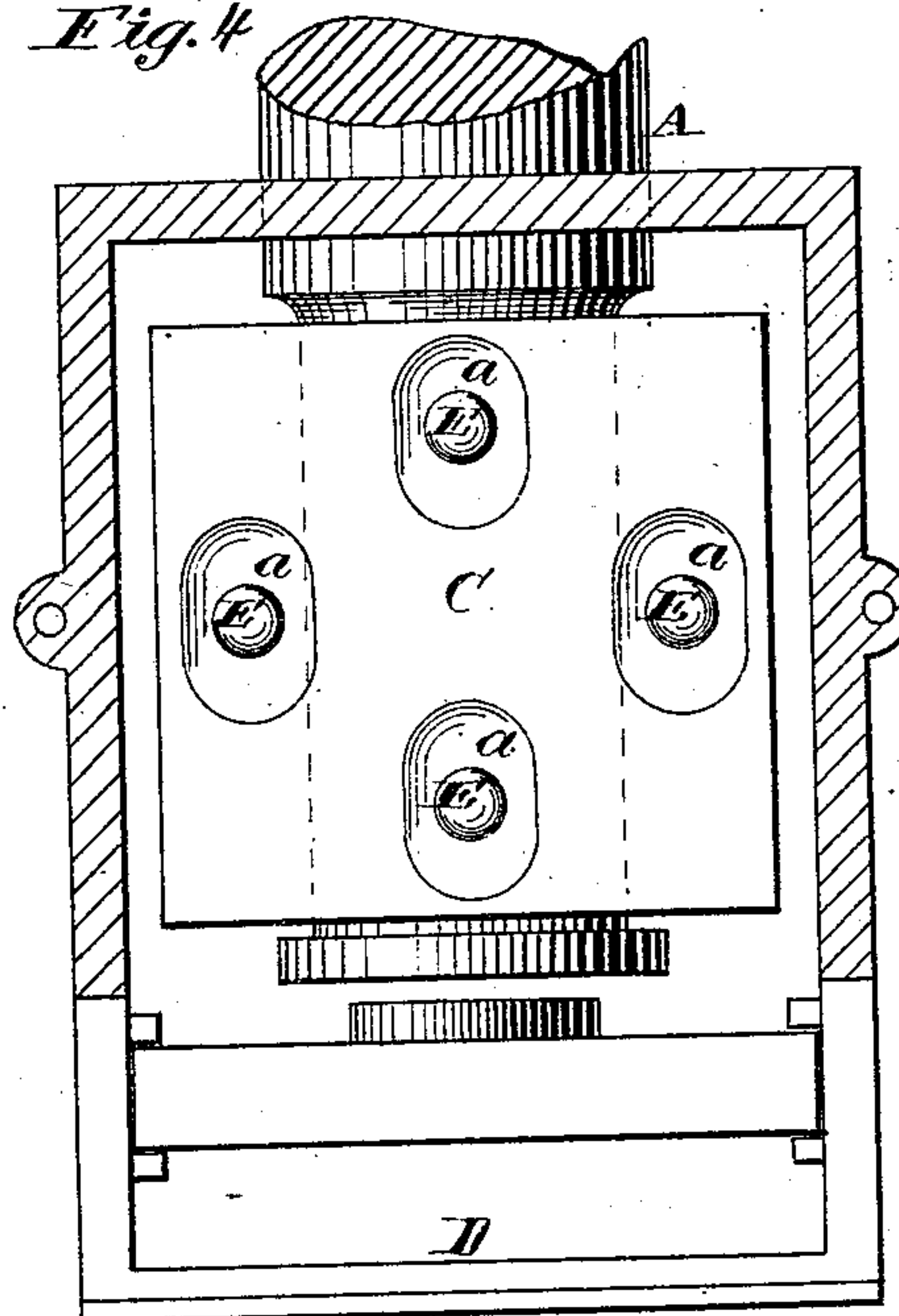


Fig. 4



Witnesses.

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att'y.

UNITED STATES PATENT OFFICE.

OSCAR S. STEARNS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO AMOS ROGERS, OF SAME PLACE.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 282,796, dated August 7, 1883.

Application filed December 2, 1881. Renewed May 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, OSCAR S. STEARNS, of the city, county, and State of New York, have invented certain Improvements in Railway Axle-Boxes, of which the following is a specification.

The object of this invention is to provide for the swerving of railway-axle with reference to the housing of the axle-box, which ordinarily bears a certain fixed relation with reference to the body of the truck, the said swerving motion permitting the journal and its bearing to retain their normal position with reference to each other irrespective of any ordinary movement, in any direction, of the aforesaid upper part of the housing—such, for example, as always occurs in the rounding of curves and other like exigencies in the travel of railway-trains.

Figure 1 is a central vertical sectional view of an apparatus embraced in my said invention, taken in a plane coincident with the length of the axle. Fig. 2 is a detailed view of one part of said apparatus. Fig. 3 is a vertical transverse sectional view of said apparatus, taken in the line *xx* of Fig. 1. Fig. 4 is a horizontal sectional view thereof, taken in the line *yy* of Figs. 1 and 3.

A is the axle, and B is the bearing, of brass, gun-metal, or other suitable material, placed upon and surrounding the upper half of the journal A' of said axle. This bearing B is fitted into and secured to the under side of a saddle, C, as more fully represented in Fig. 3. In the upper side of this saddle are formed recesses or cavities *a*, (shown in longitudinal section in Fig. 1, in cross-section in Fig. 3, and in plan in Fig. 4,) the greatest diameter of these recesses or cavities *a* being parallel to the axle A. The form, however, is merely a matter of judgment, inasmuch as said recesses or cavities may, when preferred, be of circular or other form.

D is the housing, which, except as hereinafter indicated, may be of the usual configuration and construction. In the under side of the top B' of said housing are formed cavities or recesses *c*, which are coincident with the recesses or cavities *a* of the saddle C, the said saddle being situated immediately underneath the

said top, and the recesses or cavities *c* substantially corresponding in shape and size to the cavities *a* of the saddle.

E are rollers, which are preferably of spherical shape, but which may be of any other appropriate form, and which are placed in the cavities *a c*, and of course between the saddle C and the top B' of the housing D. The diameter of these rollers E is such as to keep the top B' entirely out of contact with the saddle C below, and the size and configuration of the cavities *a* and *c* being so proportioned to that of the rollers E that within certain limits the rollers E may move horizontally in any direction. When the axle A, and consequently its journal A', its bearing B, and the attached saddle C, are moved with reference to the housing D, such movement is permitted practically without friction and wholly without torsion or wrenching exerted upon the housing D, inasmuch as the rollers E, yielding in any direction—in other words, being capable of a universal horizontal movement—accommodate themselves by a rolling motion to any change of position caused by the irregular or varying movement of the axle A and its journal A'.

From its simplicity of construction the apparatus, constructed for operation as above described, is rendered comparatively inexpensive in manufacture and less liable to become injured or deranged under the heavy strain incident to actual use than has been found feasible with other structures hitherto designed for similar purposes.

In order that more effective provision may be made to prevent the access of dirt, cinder, &c., to the internal working part of the apparatus than is afforded by the usual hinged lid, I provide to the housing D closing devices of a novel construction, as follows: The front or outer end of the top B' of the housing B is grooved on its under side, as shown at *f*. The front of the said housing D, along the lower edge of the usual opening thereof, is formed with a rib or guide, *g*. The lid or door is shown at G, and, when in position to close the opening, has its upper edge slid into the groove *f*, while its lower edge, being itself grooved, as shown at *h*, is slid upon the rib or guide *g*,

so that the said lid or door G is firmly held above and below. In order to prevent the longitudinal movement of said lid or door from the jarring to which it is subjected when in actual use, there is provided near one end thereof a lug, *m*, in which is a vertical hole, *a'*. Provided underneath the lug *m*, and upon the adjacent external portion of the housing D, are one or more corresponding lugs, *n*. A suitable bolt being dropped through the holes of the lugs *m* and *n* effectually holds the lid or door G against longitudinal movement.

To afford access to the interior of the apparatus it is only necessary to withdraw the bolt and slide the lid or door G longitudinally from its place.

It may be remarked, as concerns the recesses or cavities *c*, that, for convenience in manufacture, &c., they may, instead of being formed directly in the under side of the top B' of the housing D, be formed in a plate separately made and then fixed to and underneath the said top B', the position and relative arrangement of the recesses or cavities *c* with reference to said top B' being the same in the one case as in the other.

What I claim as my invention is—

1. The combination, in a railway axle-box, of the following elements, to wit: the housing D, having the cavities *c* in the under side of its top B', the journal A' of the axle A, the saddle C, having the bearing B and provided at its upper side with the recesses or cavities *a*, and the rollers E, placed between the top B' and the saddle C, and so proportioned to the shape and size of the cavities *a c* as to be capable horizontally of a universal movement therein, all substantially as and for the purpose herein set forth.

2. The housing D, constructed with the groove *f* and guide *g*, in combination with the sliding door G, having one of its edges formed to slide in the groove *f* and its opposite edge grooved to slide upon the guide *g*, all substantially as and for the purpose herein set forth.

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Witnesses:

THOMAS E. CROSSMAN,
ROBERT W. MATTHEWS.