No. 869,663. PATENTED OCT. 29, 1907.

F. C. SORENSEN.

JOURNAL BOX AND LID.

APPLICATION FILED APR. 15, 1907.

2 SHEETS—SHEET 1.

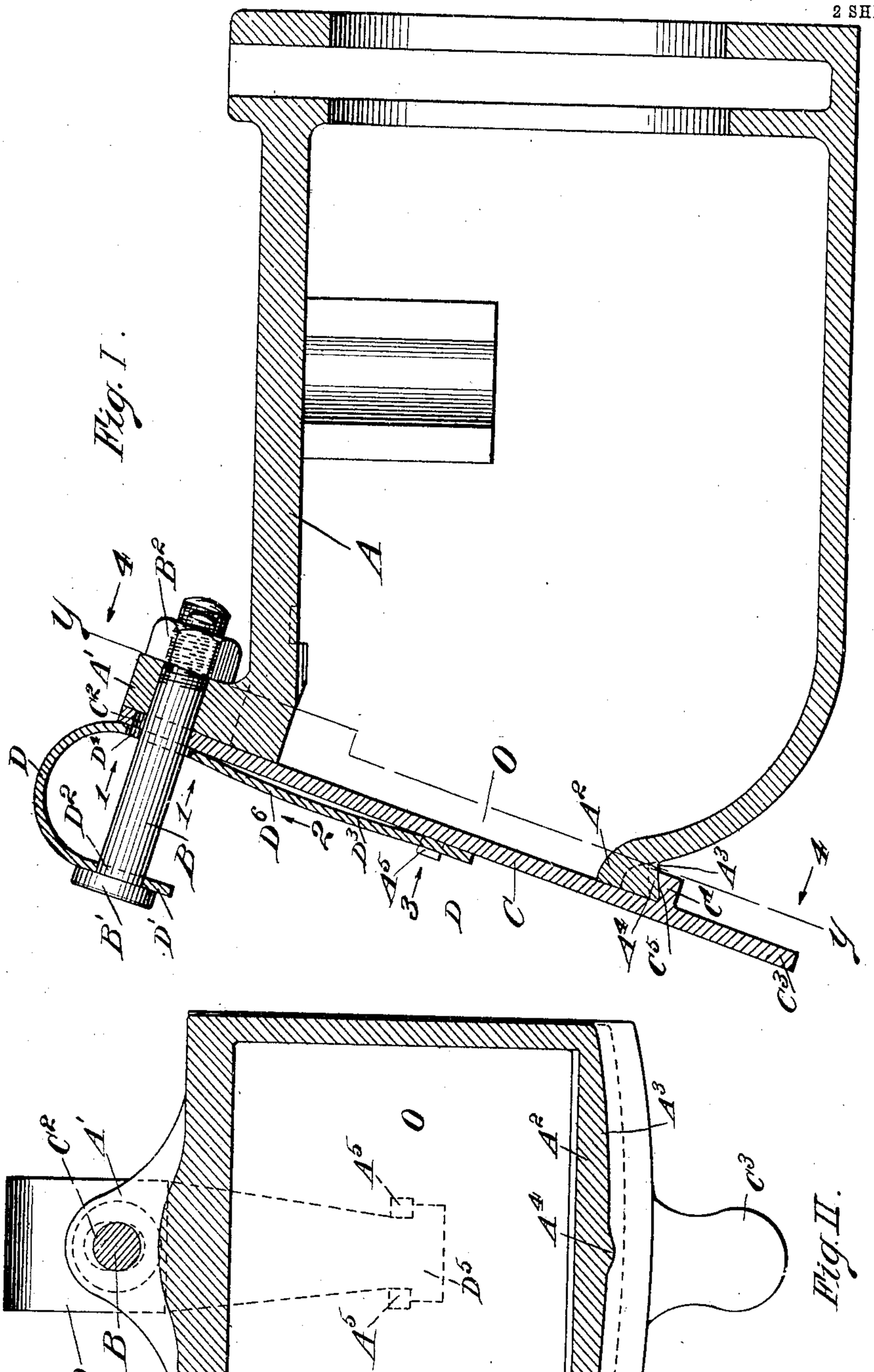

Fig. I.

Fig. II.

Witnesses:
C. H. Nelson
John P. Lepere.

Inventor:
Frederick C. Sorensen
by Albert Sidney Hawley
Atty.

No. 869,663. PATENTED OCT. 29, 1907.

F. C. SORENSEN.

JOURNAL BOX AND LID.

APPLICATION FILED APR. 15, 1907.

2 SHEETS—SHEET 2.

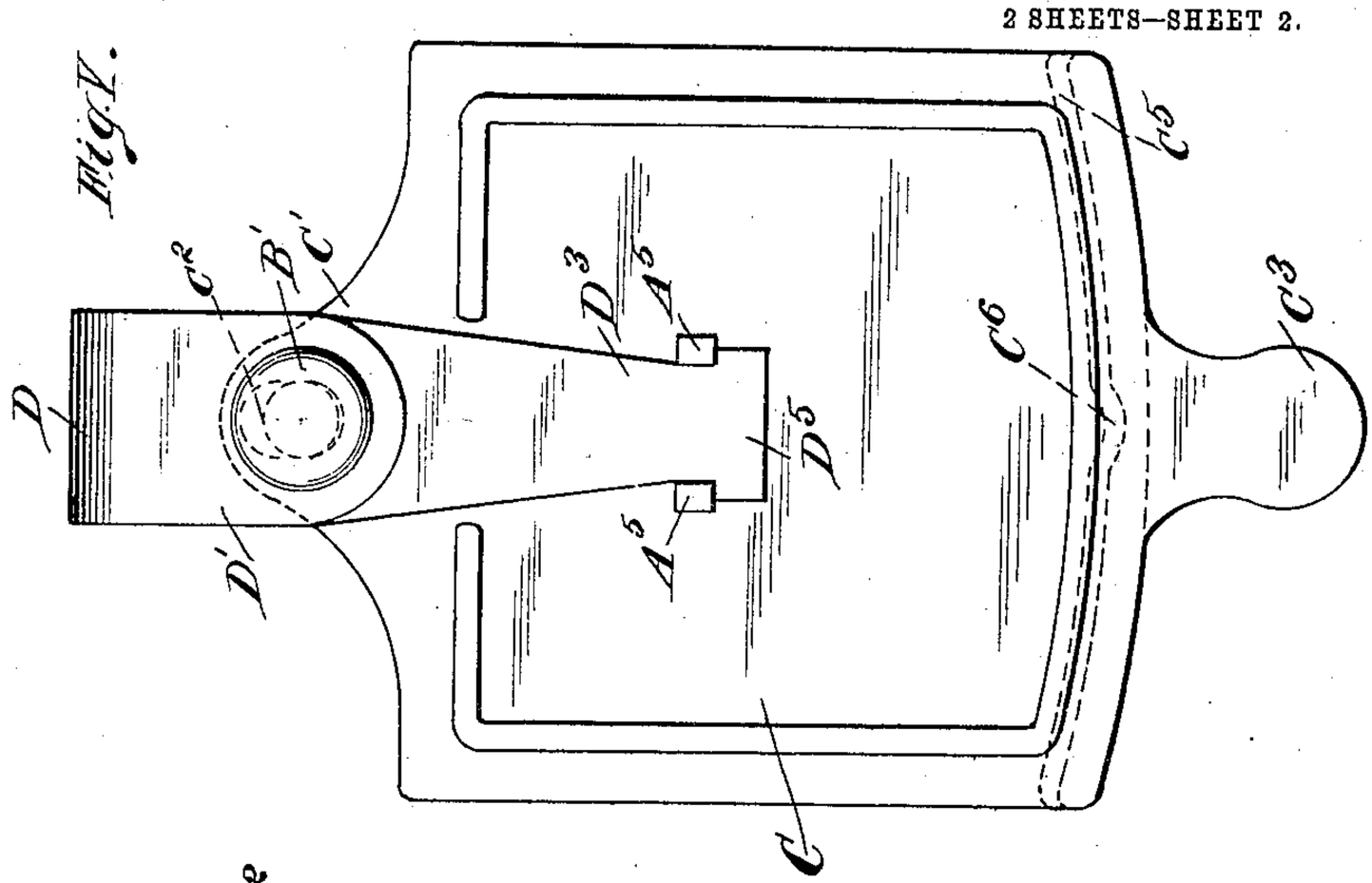

Fig. IV.

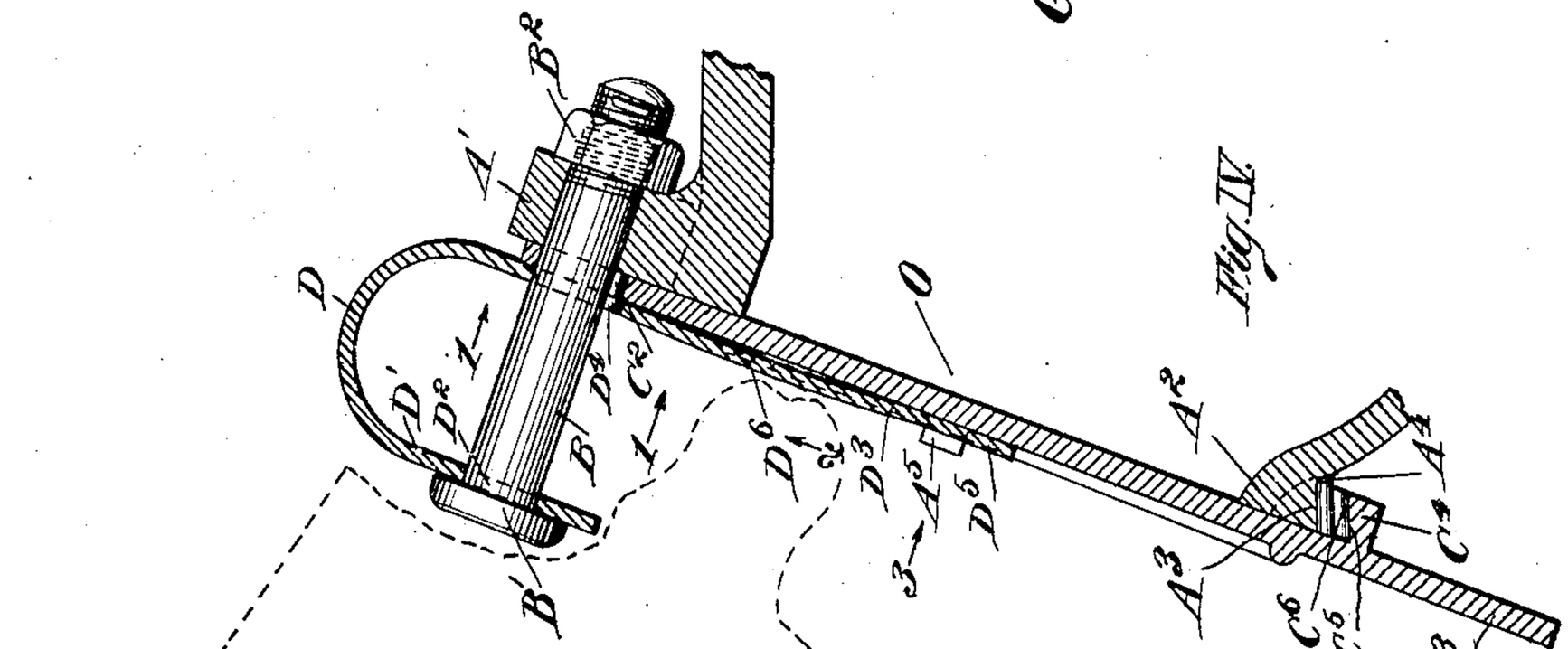

Fig. II.

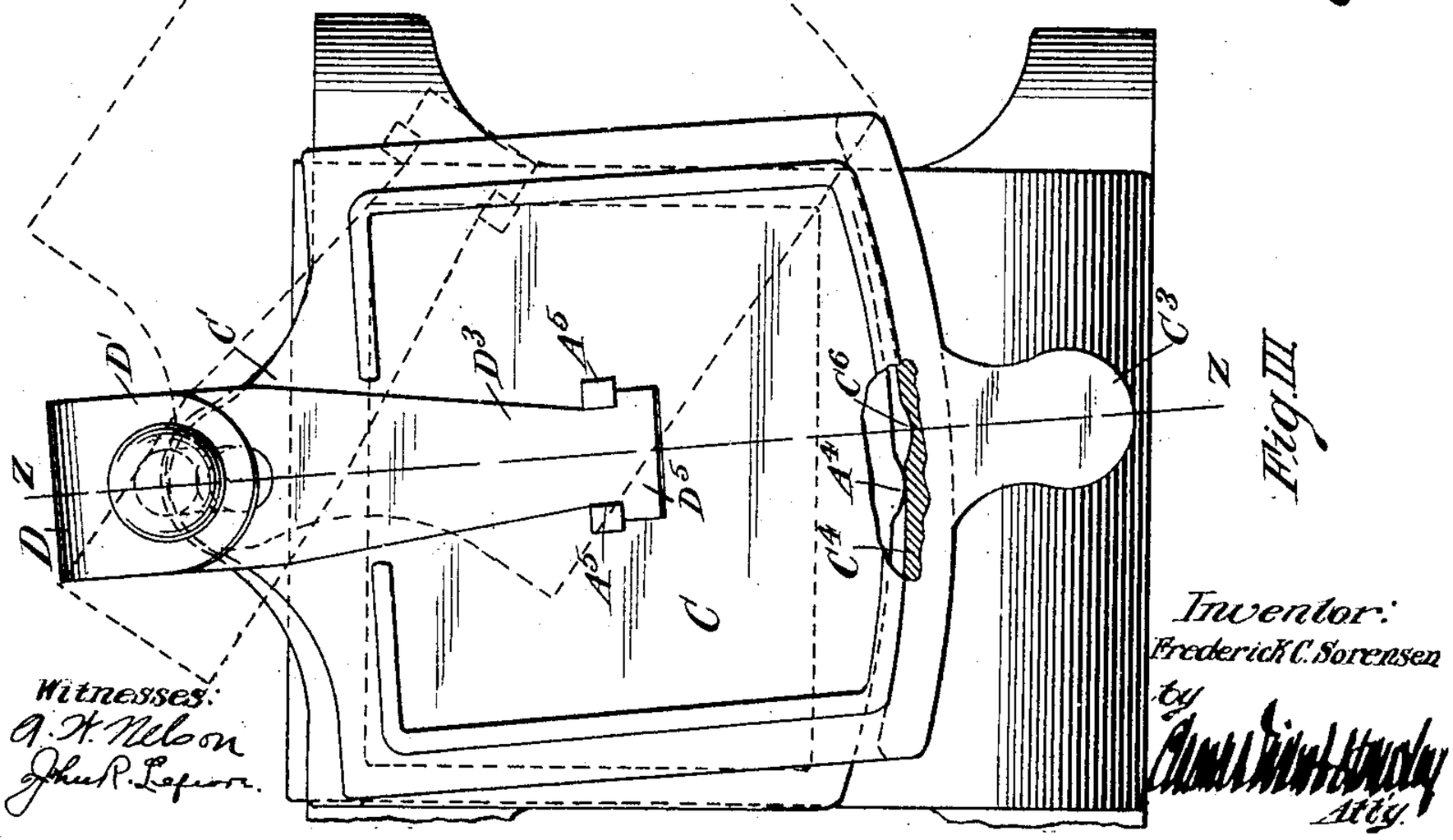

Fig. III.

Witnesses:
A. H. Nelson
John R. Lepson.

Inventor:
Frederick C. Sorensen
by
Atty.

UNITED STATES PATENT OFFICE.

FREDERICK C. SORENSEN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-THIRD TO JAMES A. CALEK AND ONE-THIRD TO RALPH C. WILLIAMS, OF CHICAGO, ILLINOIS.

JOURNAL-BOX AND LID.

No. 869,663. Specification of Letters Patent. Patented Oct. 29, 1907.

Application filed April 15, 1907. Serial No. 368,367.

To all whom it may concern:

Be it known that I, FREDERICK C. SORENSEN, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Journal-Boxes and Lids, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which the improvements appertain to make and use the same.

My invention relates to improvements in journal boxes for railroad car trucks and has special reference to improvements in means for closing such journal boxes to exclude dust therefrom.

The object of my invention is to provide more effectual means for closing car truck journal boxes to prevent the entrance of dust and dirt thereto and to prevent the loss of the lubricating materials in the boxes.

A further and particular object of the invention is to provide a journal box which shall have a lid of the swinging or pivoted type so improved and arranged that it will remain in any position in which it is left when opened, and when closed will be securely held, latched or locked in such position, to prevent the accidental opening of the box.

Still another object of the invention is to provide a journal box and lid therefor which shall be of most simple construction and of minimum cost.

Other objects of my invention will appear hereinafter.

My invention consists, generally, in a journal box having a slightly inclined outer end, containing the usual opening, in combination with a hinge or pivot pin projecting perpendicularly from the end of the box, a lid hinged or pivoted on said pin and adapted to close the opening of the box, coacting latch parts upon the said box and the said lid and a spring attached to said pin and operating to press said lid against the end of the box, and also to move the lid toward the pin to hold the coacting latch portions on box and lid in engagement.

The invention also consists in various novel details of construction and in combinations with parts all as hereinafter described and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure I is a vertical longitudinal section of journal box and lid embodying my invention. Fig. II is a vertical transverse section on the line Y Y of Fig. I viewed in the direction of the arrows. Fig. III is an end view of the box and lid, showing the lid unlatched ready to be opened. Fig. IV is a vertical longitudinal section on the line Z Z of Fig. III, and Fig. V is a face view of the lid, as seen from points perpendicular to the plane thereof.

I have chosen to illustrate herein that form of my invention in which the pivot pin is placed at the top of the box, the lid occupying a corresponding position and being arranged to swing sidewise, but I desire that it shall be understood that another and obvious modification and form of my invention consists in substantially the same lid and coacting members pivoted at the side of the box. In the latter form the free end of the lid is raised and lowered to respectively open and close the journal box. In other respects it is not modified, save this, a stop is provided to limit the downward, or closing movement of the lid.

Referring now to the drawings, A, illustrates a journal box, which, in form, meets the requirements of the Master Car Builders' rules and regulations. In the main, it is like other journal boxes, differing therefrom in only two respects; first, it is provided with a pivot pin lug, A', on its top; and second, it is provided with a curved rib or projection, A^2, beneath the journal box opening. The lug, A', contains a hole for the pivot pin or bolt, B, which projects outwardly therefrom and is perpendicular to the inclined end of the box, *i. e.*, the end containing the opening, O. The hinge pin is preferably a bolt having a head, B', and is fastened by a nut, B^2. The underhanging ledge, or rib, A^2, conforms to the arc of a circle which is concentric with the pivot pin, B. The under surface, A^3, of the ledge, A^2, is rearwardly and upwardly inclined with respect to the face of the box, as clearly shown in Figs. I and IV. At the middle of the curved surface, A^3, I provide a latch lug, or swell, A^4, to be engaged by the lid, as hereinafter explained.

My improved lid, C, is little more than a flat plate which takes its shape from the end of the journal box. It is provided with a lug or extension, C', which conforms to the lug, A', on the box, and this lug, C', contains a short slot, C^2, whereby the lid is pivoted on the pin, B, and at the same time is allowed slight vertical sliding movement on the face or end of the box. Upon the lower edge of the lid is a handle, or depending lug, C^3, for swinging the lid, and on the under side of the lid is a curved rib, C^4. The latter is provided with an inwardly and upwardly inclined curved surface, C^5, adapted to fit the curved surface, A^3, of the box ledge, A^2. The surface, C^5, contains a recess C^6, to receive or fit the lug or projection, A^4, on the ledge, A^2. These are adapted to coact to lock the lid in its closed position. The slot in the lid is of sufficient length to permit the lid to drop down out of engagement with the lug, A^4, whereupon it may be swung to one side, as indicated by full and dotted lines, in Fig. III. To cause the effective engagement of the inclined surfaces of the box and lid, and to hold the lid in engagement with the latch lug of the box, I employ a spring which exerts a lifting force upon the lid, thereby drawing the rib of the

lid firmly into engagement with the coacting part of the box. This spring, D, as shown in the drawings, is U-shaped in form, having one short leg D′, containing a hole, D^2, which fits the pin, B, and another longer leg or arm, D^3, containing a slot, D^4, which permits the same to move transversely with respect to the pin. The lower end, D^5, of the spring is T-shaped, and engages two lugs, A^5, on the lid. The normal positions of the parts are shown in Fig. I, from which it will be seen that the end of the spring is drawn down and placed under tension when it is engaged with the lugs, A^5. It therefore tends to raise the lid; which action causes the inclined surfaces, A^3, and C^5, to impinge, with the result that the lower end of the lid is firmly crowded or drawn down upon the end of the box. The spring is also compressed between the head of the bolt, or pin, B, and the lid. Therefore its upper portion serves to hold the upper end of the lid against the box. The intermediate portion, D^6, of the spring, is bowed outwardly away from the face of the lid, and thus the lower end of the spring is made to press against the center of the lid. The three directions in which the spring acts are indicated by the arrows, 1—1, 2, and 3.

It will be obvious that in lieu of the two lugs, A^5, on the lid, I may use a single lug and provide the lower end of the spring with a single hole to fit it.

When in use, and when the lid is in closed position, it tightly closes the opening in the box, for, as explained, the pressure of the spring upon the upper and central portions of the lid, and the draft or pull of the spring, operating through the inclined or wedge surfaces, firmly seats the lid at all points around the box opening, *i. e.*, upon the seat which surrounds said opening. At such times the draft of the spring forcibly interengages or interlocks the coacting lugs or surfaces of the ledge A^2, and the rib C^4, and swinging movement of the lid is prevented by the lug or projection, A^4. The force of the spring is such that considerable effort must be exerted upon the handle of the lid to wedge it downwardly against the projection, A^4, as shown in Figs. III and IV. But once having disengaged the lid from the lug or projection, A^4, the person operating the same may quite easily open the lid the rest of the way, being opposed only by the friction between the parts. When the lid is swung upwardly it will be held in open position by the pressure of the spring, which constantly forces the lid against the end of the box.

As various modifications of my invention will suggest themselves to others, and as such may be made without departing from the spirit of my invention, I do not confine the invention to the specific structures herein shown and described.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. A journal box containing an opening in its end, in combination with a pivot pin projecting perpendicularly from the end of the box, a lid fitted to the box and pivoted on said pin, said lid adapted to transverse movement with respect to the pin, there being coacting latch parts upon the box and the free end of said lid, and a spring operating to move the lid toward said pin and thereby holding said latch parts in engagement, substantially as described.

2. A journal box having an opening in its end, in combination with a hinge pin projecting perpendicularly from said end, a lid containing a slot and thereby pivoted on said pin, there being coacting latch parts on said box and lid, a U-shaped spring held by said pin and having its intermediate portion pressed against the lid by said pin, and the free end of said spring being attached to the central part of said lid and exerting draft upon said lid to hold said latch parts in engagement, substantially as described.

3. A journal box having an opening at its end, in combination with a hinge pin perpendicularly arranged on said end, a lid loosely pivoted on said pin, there being correspondingly inclined curved ledges upon said box and lid, and a spring held by said pin, and at once exerting draft upon said lid and pressing same against the end of the box, substantially as described.

4. A journal box having an opening in its end, in combination with a pivot pin extending perpendicularly from the end of the box, adjacent to said opening, a lid loosely pivoted on said pin to close said opening, and a U-shaped spring through both legs of which the pin extends, the opening in the intermediate portion of the spring being of greater size than the pin, and the lower end of the spring being in tensioned engagement with the center of the lid, there being curved interlocking ledges upon the free end of the lid and upon the box, substantially as described.

5. A journal box having a pivot pin lug at one side of its opening and provided with a curved inwardly and upwardly inclined ledge at the opposite side of said opening, in combination with a pivot pin projecting from said lug, a lid loosely pivoted on said pin and provided with a curved and inclined ledge, corresponding to the ledge on the box, a latch lug and recess being formed in the said curved ledges, and a U-shaped spring having its outer end pivotally fixed on said pin and exerting draft upon said lid, the intermediate portion of said spring pressing upon the lid adjacent to said pin, substantially as described.

In testimony whereof, I have hereunto set my hand, this 12th day of April, 1907, in the presence of two subscribing witnesses.

FREDERICK C. SORENSEN.

Witnesses:

CHARLES GILBERT HAWLEY,

GEORGE J. READ.