

(No Model.)

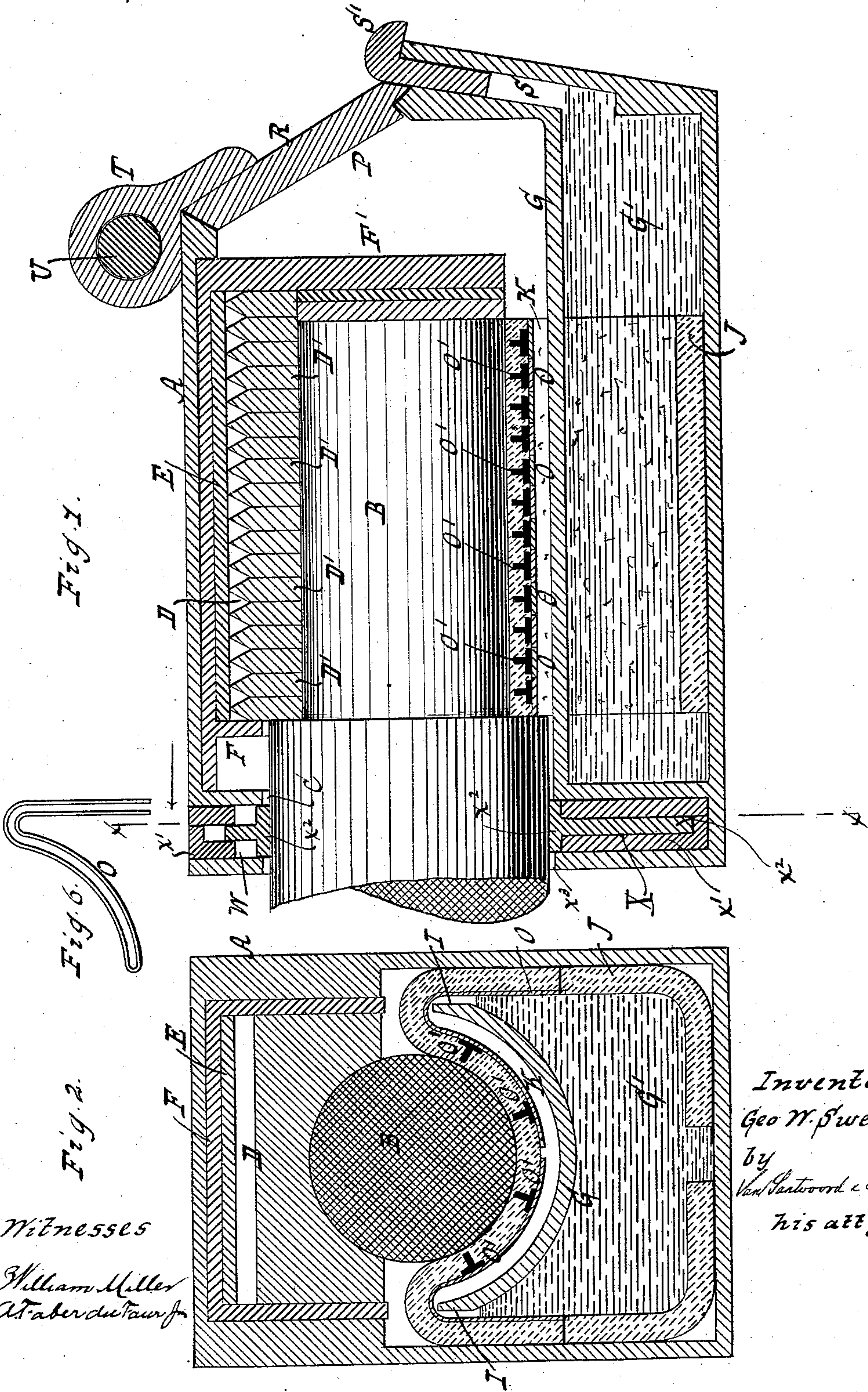
3 Sheets—Sheet 1.

G. W. SWEENEY.

CAR AXLE BOX.

No. 308,579.

Patented Nov. 25, 1884.



Witnesses

William Miller
Attest

Inventor
Geo W. Sweeney
by
Van Santvoord & Hauck
his attys

(No Model.)

3 Sheets—Sheet 2.

G. W. SWEENEY.

CAR AXLE BOX.

No. 308,579.

Patented Nov. 25, 1884.

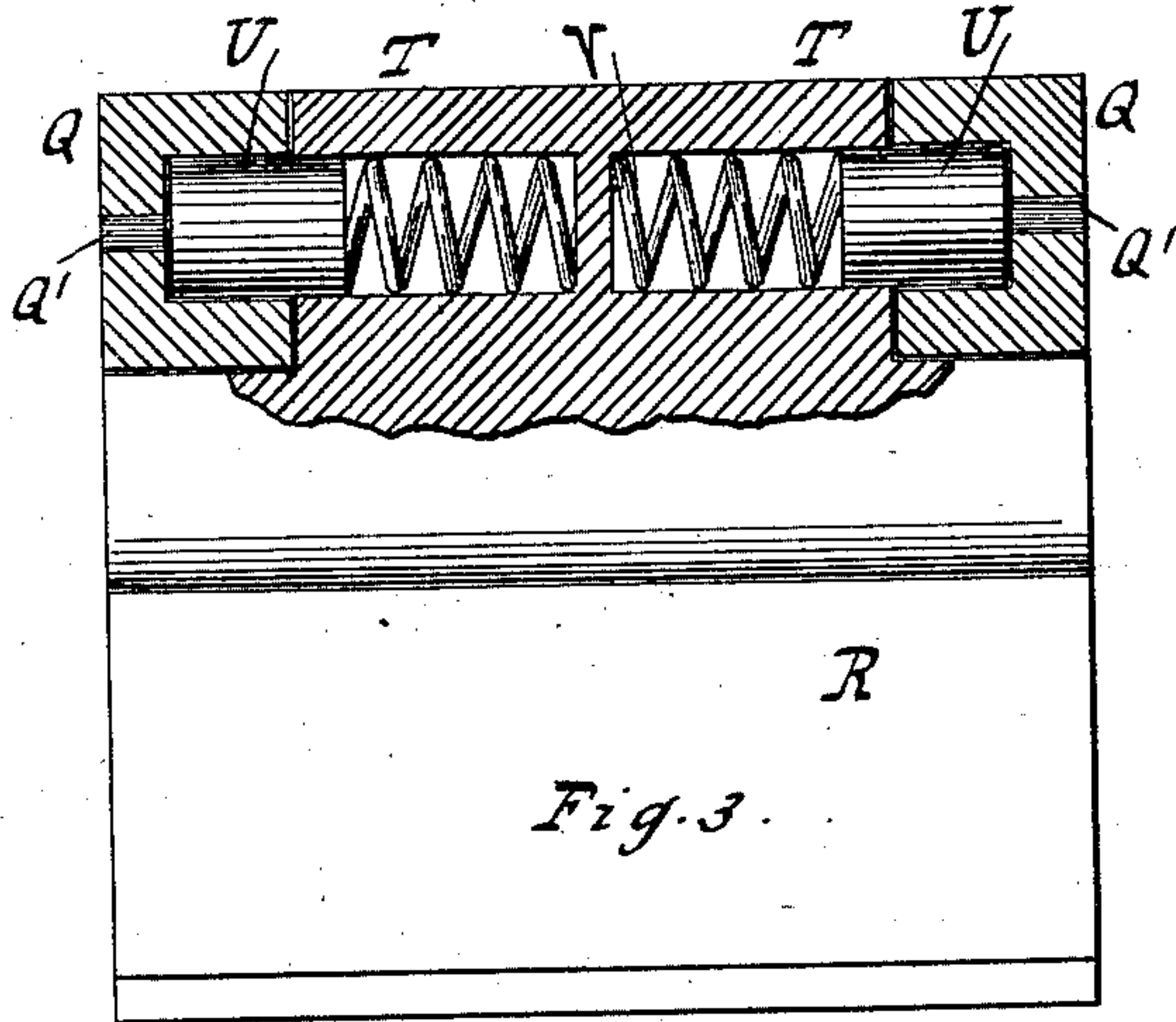


Fig. 3.

Fig. 4.

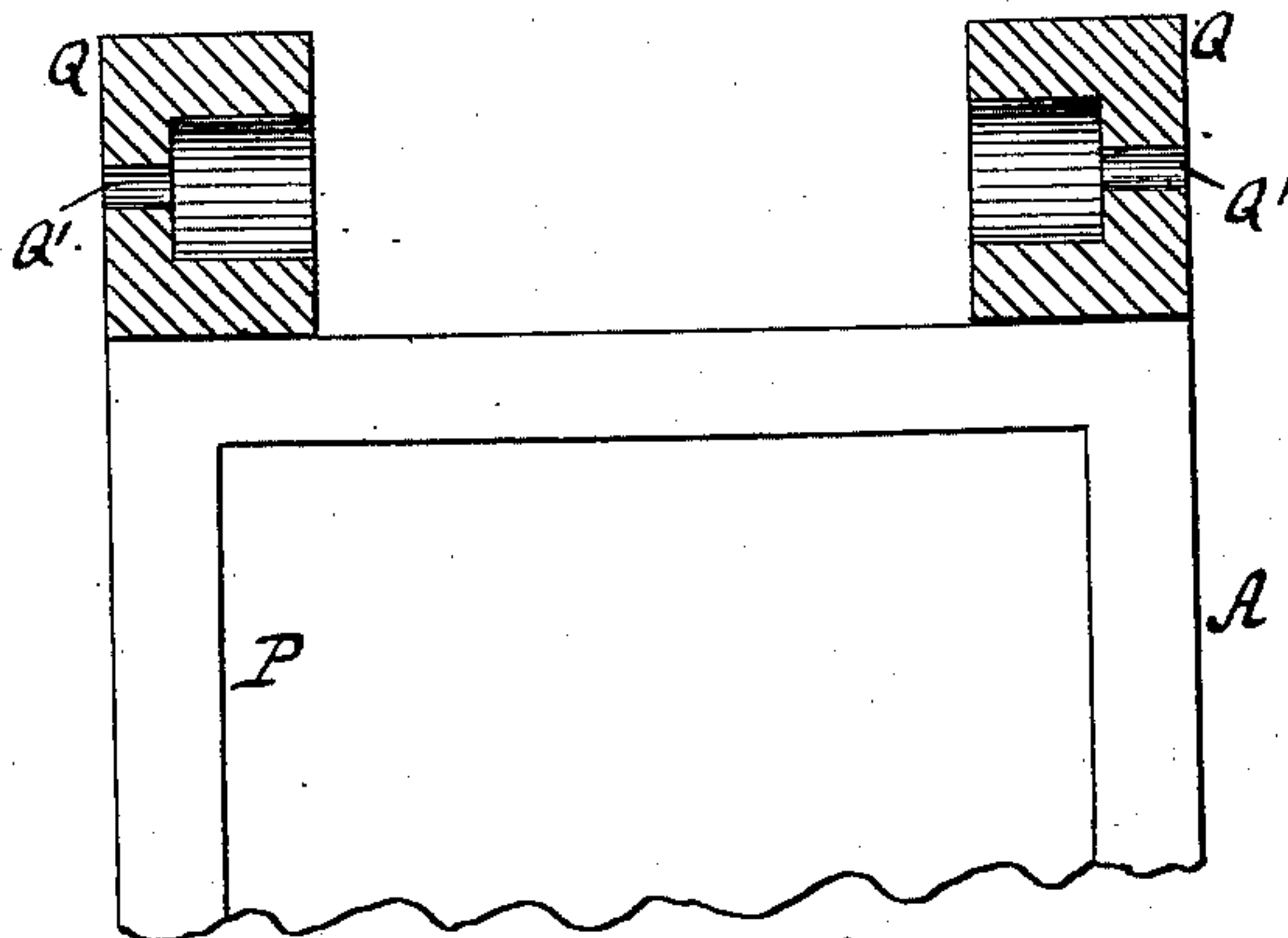
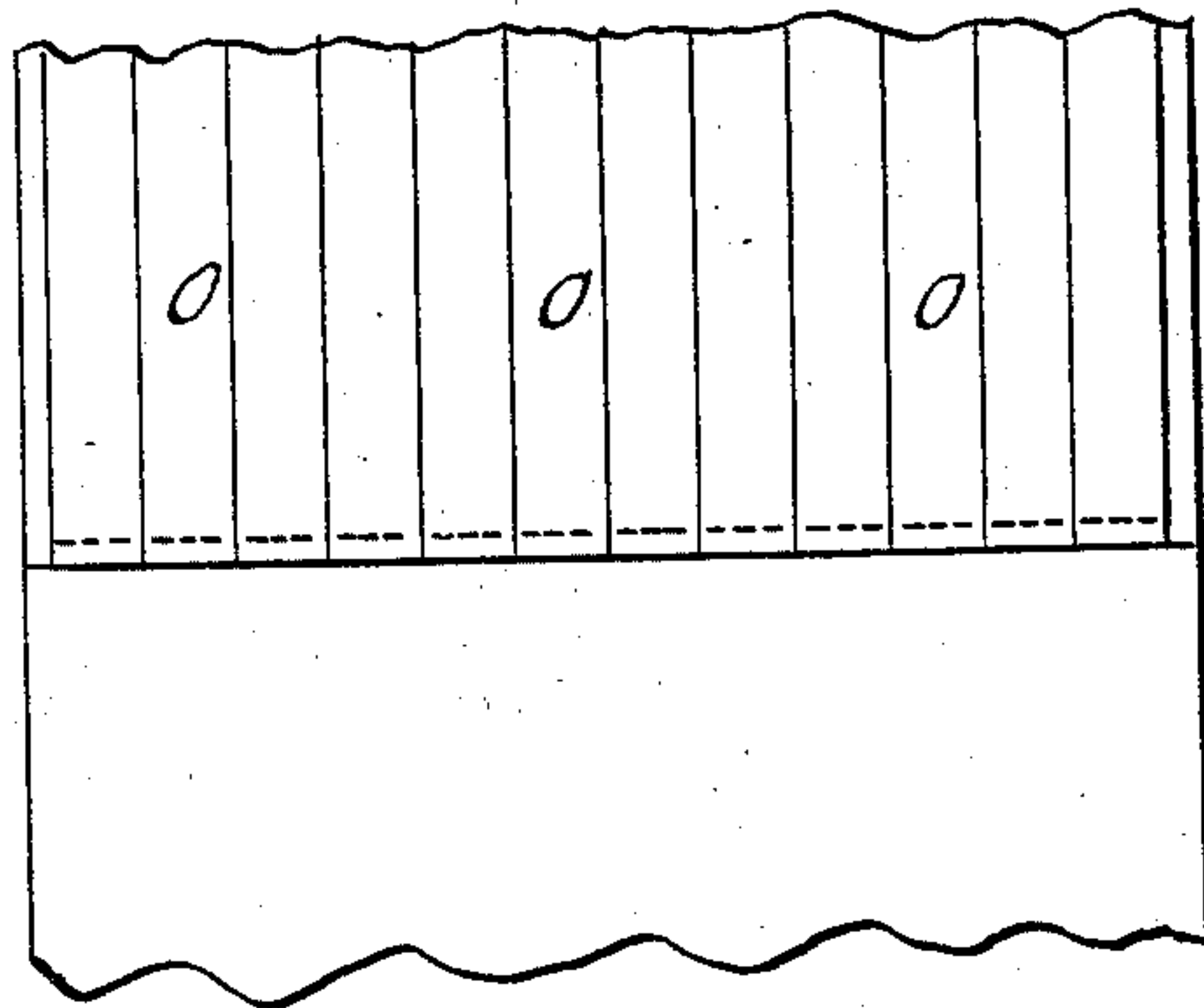


Fig. 5.

Witnesses
William Miller
Attest du Taur, Jr.



Inventor
Geo W. Sweeney
by Van Santvoord & Hauck
his attys.

(No Model.)

3 Sheets—Sheet 3.

G. W. SWEENEY.

CAR AXLE BOX.

No. 308,579.

Patented Nov. 25, 1884.

Fig. 7.

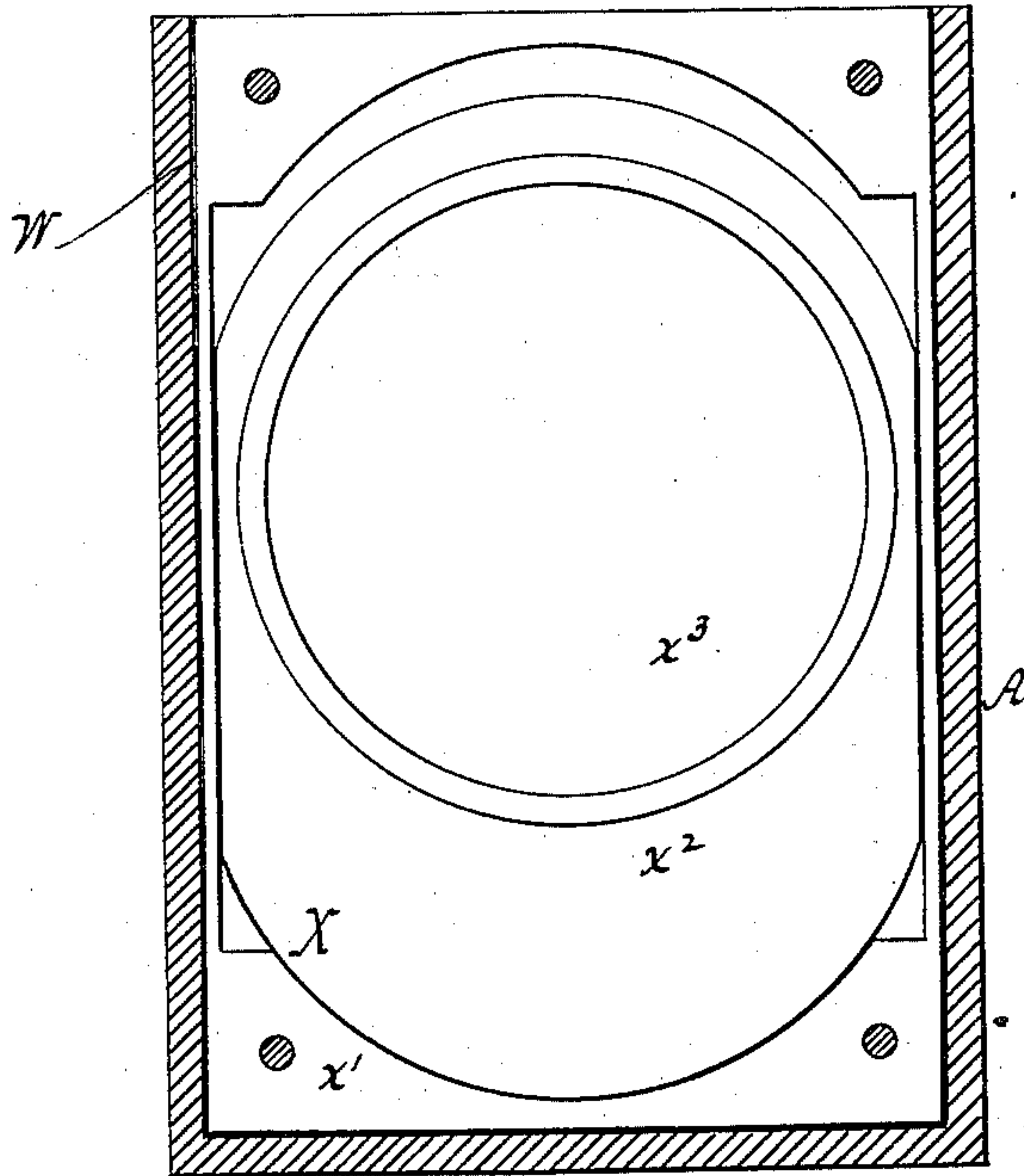


Fig. 8.

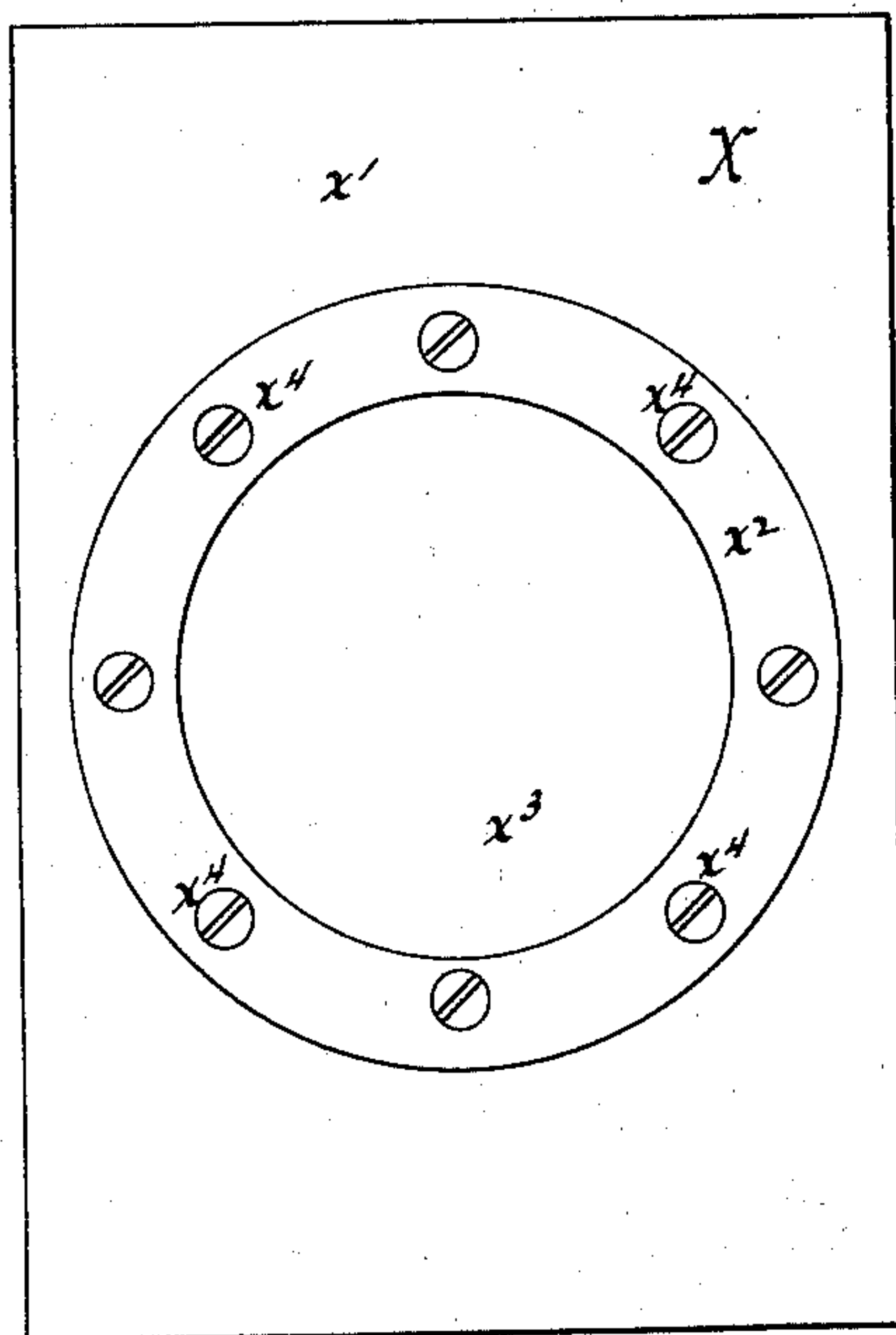
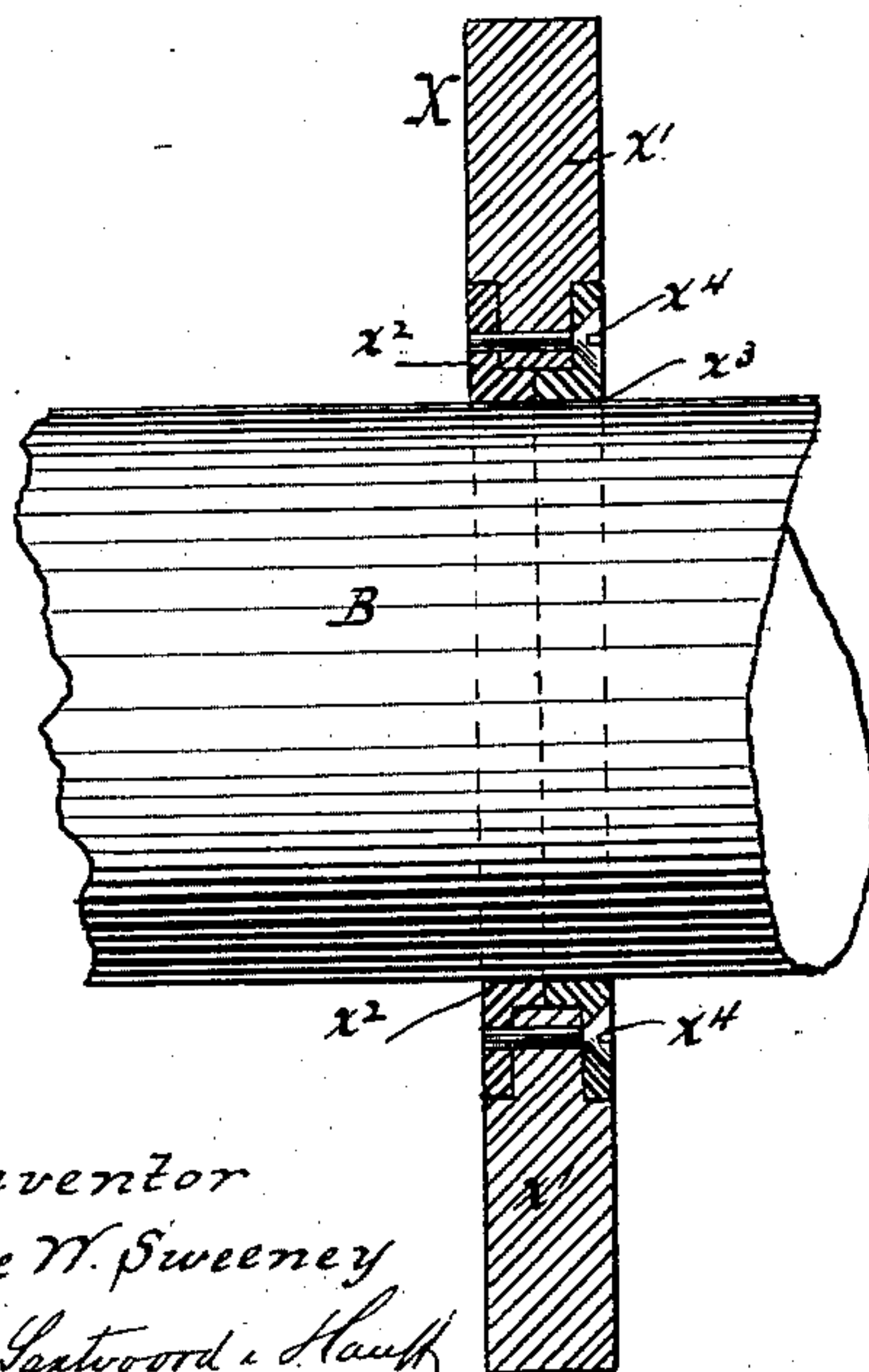


Fig. 9.



Inventor
George W. Sweeney
by Van Santvoord & Haugh
his attys

Witnesses
William Miller
Attest du Faur Jr.

UNITED STATES PATENT OFFICE.

GEORGE W. SWEENEY, OF NEW YORK, N. Y.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 308,579, dated November 25, 1884.

Application filed August 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SWEENEY, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Car-Axle Boxes, of which the following is a specification.

This invention relates to the construction and arrangement of the journal-bearings, the lubricators, the dust-shields, and the lid-locking devices of car-axle boxes, the novel features being hereinafter fully described, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of a box embodying my invention. Fig. 2 is a cross-section thereof. Figs. 3 and 4 are detail views of the lid and its hinge. Figs. 5 and 6 are detail views of a pad composing the lubricator. Fig. 7 is a transverse section of the axle-box in the plane $x x$, Fig. 1. Fig. 8 is a face view of a modification of the dust-shield detached. Fig. 9 is a transverse section of the same.

Similar letters indicate corresponding parts.

The letter A designates the axle-box, and B the journal, of a car-axle projecting into the box through the usual rear opening, C. The letter D indicates the bearing of the journal. This bearing has substantially the usual shape, but is composed of a series of transverse plates, D', which are left detached from each other, and on the upper edges of which rests a pad, E, of lead or other soft metal, the whole being retained in position by a gib, F, which is constructed to engage the plates together with the pad, and in this example is also constructed with an abutment, F', for the end of the journal. The detached condition of the plates D' adapts them to move independently of each other, and since the soft-metal pad E allows the plates to yield in an upward direction they adjust themselves to the journal, while the pad at the same time holds the plates in position thereon, so that the bearing preserves the proper condition in relation to the journal, especially in the deflection thereof by the swaying of the axle-box. Another effect of the plates D' is that the bearing can be renewed in part without destroying the whole in the event of an uneven wear.

In order to facilitate the self-adjustment of the plates D', the upper edges thereof are pointed, and preferably by beveling such edges from both sides, as shown in Fig. 1, so that the plates may readily penetrate the soft-metal pad.

At a distance below the journal B the axle-box has a diaphragm, G, which is concentric to the journal, and provided with openings I, adjacent to the sides of the box. The purpose of this diaphragm G is to form an oil-well, G', in the bottom of the box; and to convey the oil from this well to the journal I employ a wick, J, the ends of which are inserted in the openings I, to lap the intermediate portion thereof around the axle from a downward direction, as shown in Fig. 2, the wick being of a sufficient length to reach the bottom of the box. A space, K, is left between the diaphragm G and the journal B, to receive the wick J, and also to permit the required play of the journal in introducing or removing the bearing D and its concomitants.

To the wick J are attached metal strips O, which extend transversely thereto on the part which is opposite to the journal and to the edges of the openings I of the diaphragm, side by side with each other, Fig. 5, so that the wick is re-enforced on the part named, and thereby held in proper relation to the journal. The metal strips O may be composed of wire or sheet metal, and each is provided with spurs O', which project inwardly therefrom on the part opposite to the journal to equal distances, thus tending to counteract the wear of the wick by the journal. Two sets of the metal strips O are used, they being arranged on opposite sides of the center of the wick, and by this means the wick is permitted to yield to a deflection of the journal without losing its position. When the metal strips O are arranged in sets, they may be doubled, as shown in Fig. 6.

On the top edge of the front opening, P, of the box are cast or otherwise formed sockets Q, Fig. 4, which open horizontally inward and coincide with each other, and each of which is provided with a hole, Q', in the end thereof. These sockets Q form part of a hinge for connecting the lid R to the box, the re-

mainder of the hinge consisting of sockets T of the lid, adapted to register with the sockets of the box; further, of bolts U, which are fitted into the sockets, and of springs V, which are arranged in the lid-sockets, to hold the bolts in normal positions, the length of the bolts being such that when, under the impulse of the springs, they are forced outward into the sockets of the box, the bolts intersect the joints of the lid-sockets and box-sockets, as shown in Fig. 3, while if the bolts are forced inward into the lid-sockets against the action of the springs the outer ends of the bolts are substantially flush with the joints named, and the lid is free to be removed. To force the bolts inward, a pin or other suitable instrument is inserted in the end holes, Q', of the box-sockets.

In the front wall of the axle-box is a channel, S, for supplying the well G' with oil, and into the mouth of this channel is fitted a stopper, S', for closing it. The free edge of the lid R is arranged to coincide with the channel S, and consequently when the stopper S' is put in place it engages such edge and serves to hold the lid in a closed position.

If desirable, the wick J may be divided centrally into two sections—one to each set of re-enforcing strips.

The axle-box A is provided at its back end with a chamber, W, for the reception of the dust-shield X. This dust-shield is constructed of a support, x' , and a lining, x^2 . The support is by preference made of wood, and it is provided with a hole amply large enough to admit the body of the axle inside of its journal. The lining x^2 is made of metal, and it is provided with a hole, x^3 , which fits closely the body of the axle, as shown in Figs. 1 and 9.

In the example shown in Figs. 8 and 9 the support x' consists of a piece of board which fits the chamber W in the axle-box; and the lining x^2 is made in two halves, which are secured to the support x' by screws or rivets x^4 , as shown in the figures last named.

In the example shown in Figs. 1 and 7 the support x' consists of a casing, which fits the chamber W, and which is made in two halves. In the interior of this chamber is placed the lining x^2 , which is free to move up and down in the casing, and the opening of which hugs the body of the axle.

By constructing the dust-shield of a rigid support, x' , and a metallic lining, x^2 , the wear of the opening of the dust-shield is considerably reduced, and an article can be produced which is cheap and durable.

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

1. The combination, substantially as hereinbefore described, with a car-axle and axle-box, of the journal-bearing composed of a series of transverse detached plates, and the soft-metal pad resting on the upper edges of the plates.

2. The combination, substantially as hereinbefore described, with a car-axle and axle-

box, of the journal-bearing composed of a series of transverse detached plates having pointed upper edges, and the soft-metal pad resting on such edges of the plates.

3. The combination, substantially as hereinbefore described, with a car-axle and axle-box, of the journal-bearing composed of a series of transverse detached plates having the upper edges beveled from both sides to a point, and the soft-metal pad resting on such edges of the plates.

4. The combination, substantially as hereinbefore described, with a car-axle and axle-box, of the journal-bearing composed of a series of transverse detached plates, the soft-metal pad resting on the upper edges of the plates, and the gib constructed to engage the bearing together with the pad.

5. The combination, substantially as described, of the car-axle box and the longitudinal concentric diaphragm extending from side to side of the box, and formed with recesses or openings adjacent to said sides, the diaphragm dividing the box, to form an oil-chamber in the lower portion, with the lubricating-wick extending across the diaphragm, and having its end passed downward through the side recesses or openings thereof.

6. The combination, substantially as hereinbefore described, of the car-axle box and the longitudinal concentric diaphragm extending from side to side of the box, and formed with recesses or openings adjacent to said sides, the diaphragm dividing the box, to form an oil-chamber in the lower portion thereof, with the lubricating-wick extending across the diaphragm, and having the ends passed downward through the side recesses or openings thereof, and the metal re-enforcing strips extending through the body of the wick transversely thereto, and also transversely to the edges of the side recesses in the diaphragm.

7. The combination, substantially as hereinbefore described, of the car-axle box and the longitudinal concentric diaphragm extending from side to side of the box, and formed with recesses or openings adjacent to said sides, the diaphragm dividing the box, to form an oil-chamber in the lower portion thereof, with the lubricating-wick extending across the diaphragm, and having the ends passed downward through the side recesses or openings thereof, and the metal re-enforcing strips extending through the body of the wick transversely thereto and also transversely to the edges of the side recesses in the diaphragm, said re-enforcing strips being each provided with spurs projecting into the wick toward the car-axle.

8. The combination, substantially as hereinbefore described, of the car-axle box and the longitudinal concentric diaphragm extending from side to side of the box, and formed with recesses or openings adjacent to said sides, the diaphragm dividing the box, to form an oil-chamber in the lower portion thereof, with the lubricating-wick extending across the dia-

phragm, and having the ends passed downward through the side recesses or openings thereof, and the metal re-enforcing strips extending through the body of the wick transversely thereto and also transversely to the edges of the side recesses in the diaphragm, said re-enforcing strips being arranged in the body of the wick in two sets, which are respectively on opposite sides of the wick-center, for permitting the wick to yield to a deflection of the axle-journal.

9. The combination, substantially as hereinbefore described, of the box having coincident sockets, provided with end holes on the top edge of the front opening, the lid having sockets adapted to register with the sockets of the box, the bolts fitted into the sockets, and the springs arranged in the lid-sockets, to hold the bolts in normal positions.

10. The combination, substantially as hereinbefore described, with a car-axle box having an oil-well on the bottom and a supply-channel in the front wall thereof, of the lid having its free edge arranged to coincide with the sup-

ply-channel, and the stopper fitted into the mouth of the channel to close it, and simultaneously hold the lid in a closed condition.

11. The rigid dust-shield X, constructed of a single piece of wood or other rigid material, having an opening for the car-axle journal and a metallic lining to the edge of the said opening of the rigid shield, substantially as described.

12. The combination, substantially as hereinbefore described, with an axle-box and with the chamber W, formed in the inner end thereof, of a casing, x' , fitting said chamber, and metallic lining x'' , fitting the casing, and constructed to rise and fall in said casing, which fits the chamber in the axle-box.

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

GEORGE W. SWEENEY. [L. S.]

Witnesses:

W. HAUFF,
E. F. KASTENHUBER.