

No. 639,014.

Patented Dec. 12, 1899.

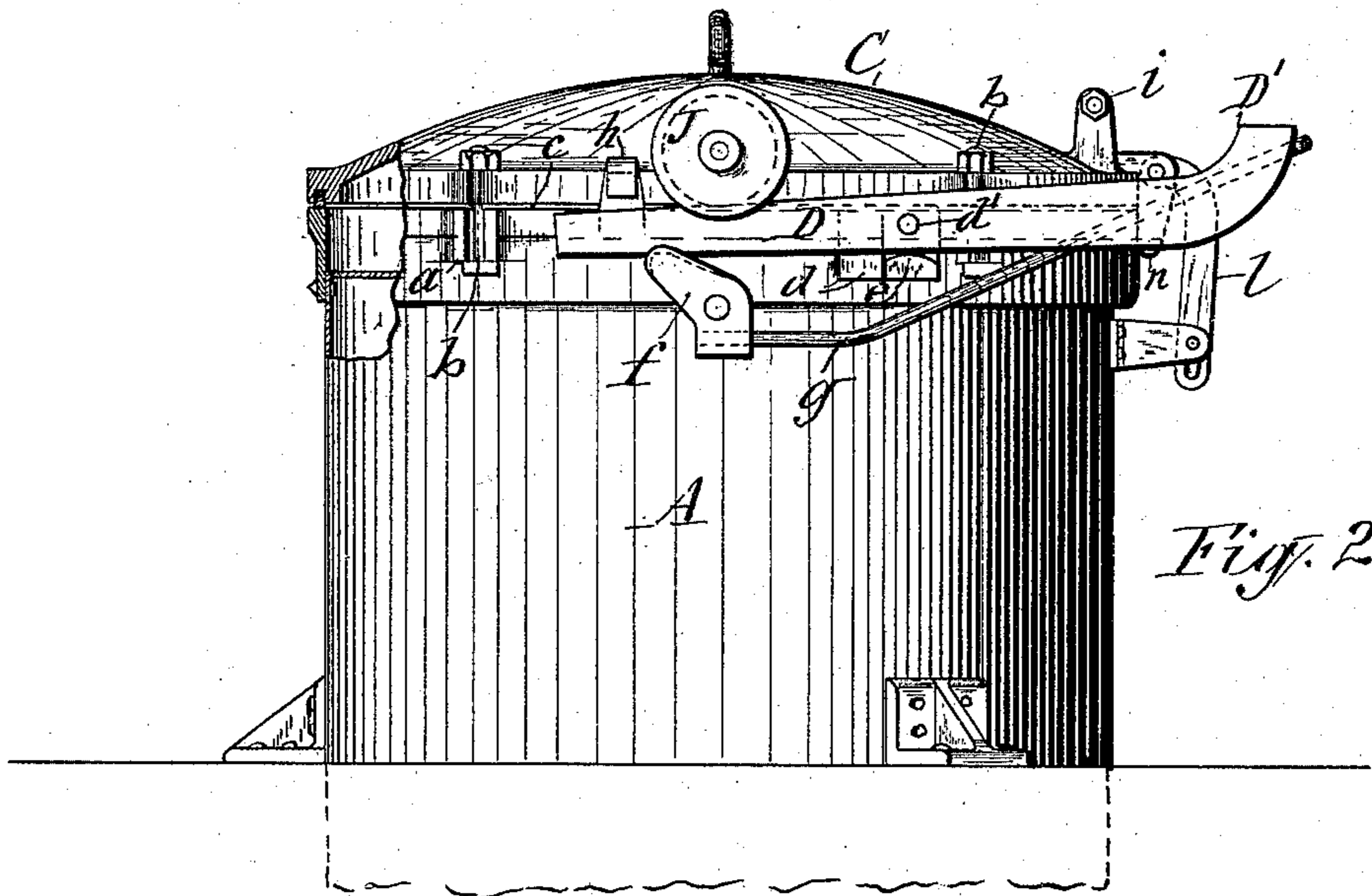
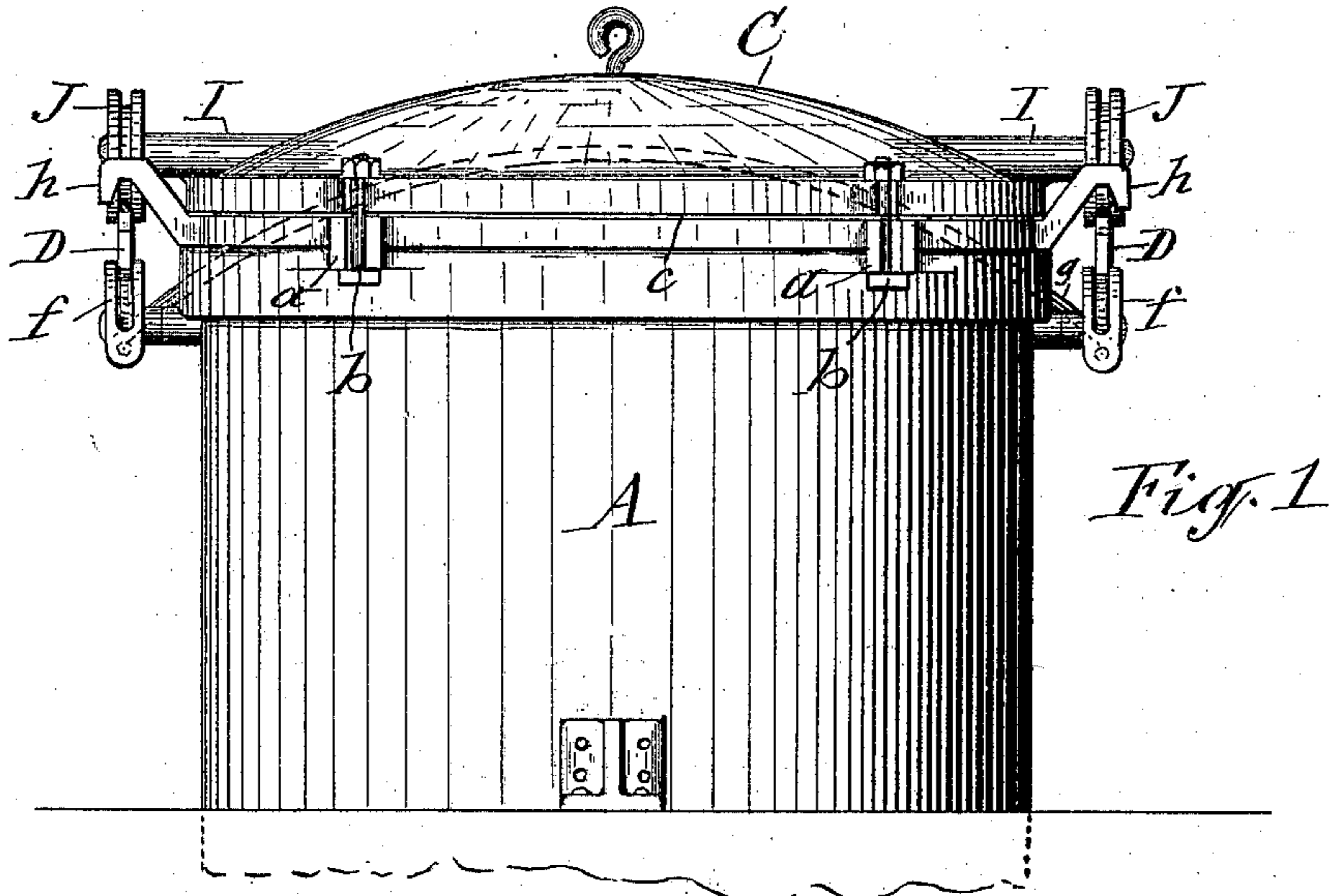
W. A. BRADLEY.

DEVICE FOR MANIPULATING TANK COVERS.

(Application filed Oct. 4, 1899.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:
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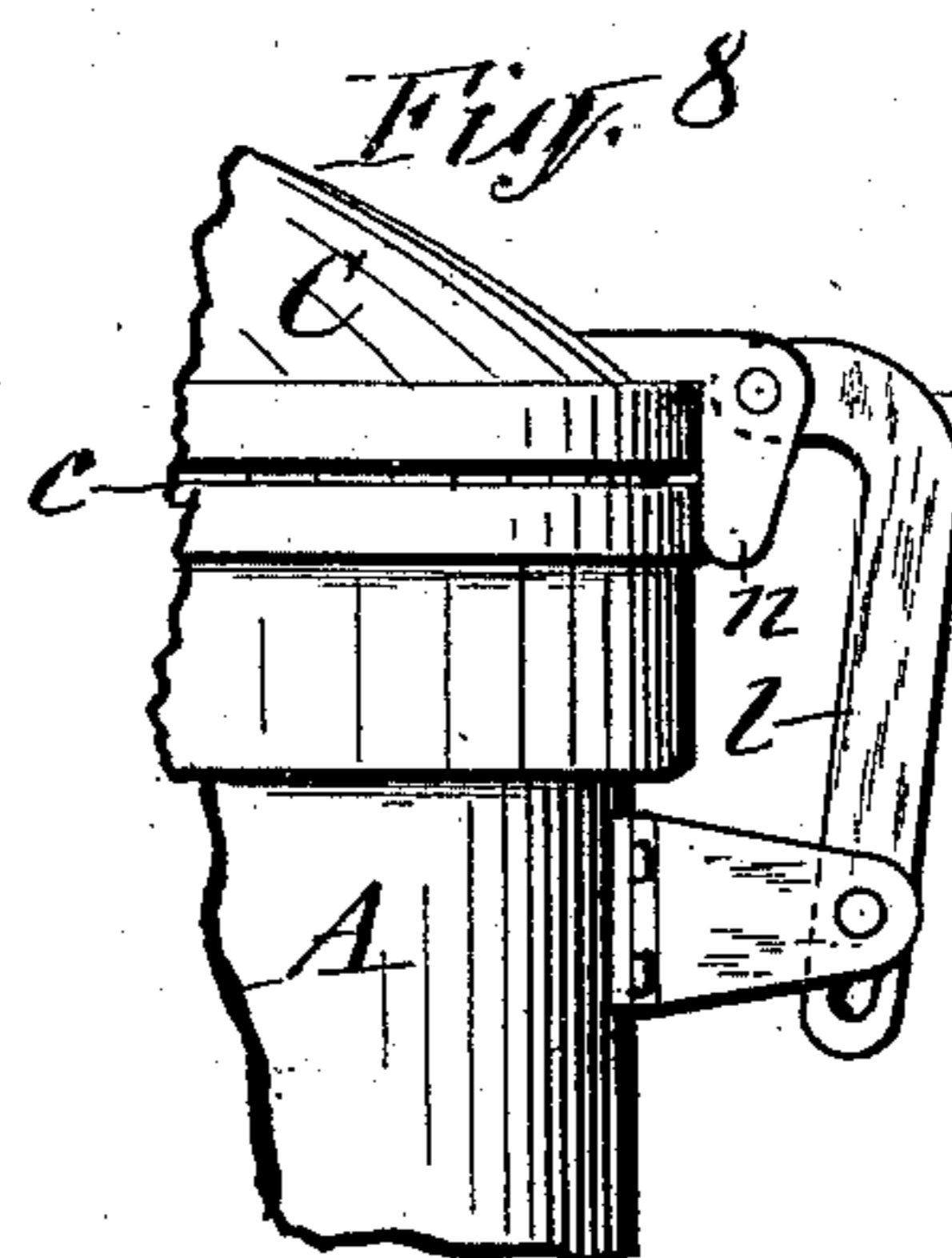
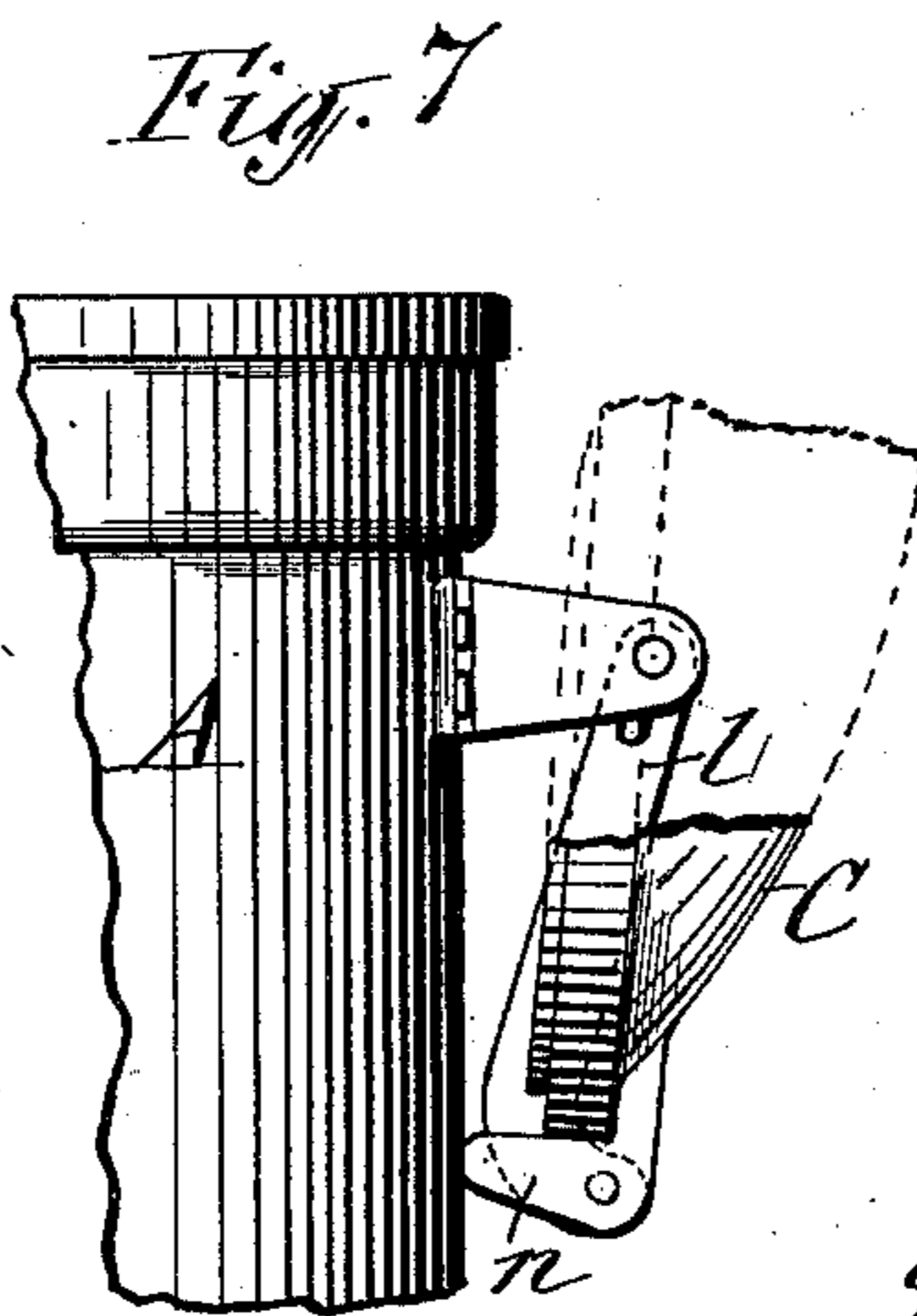
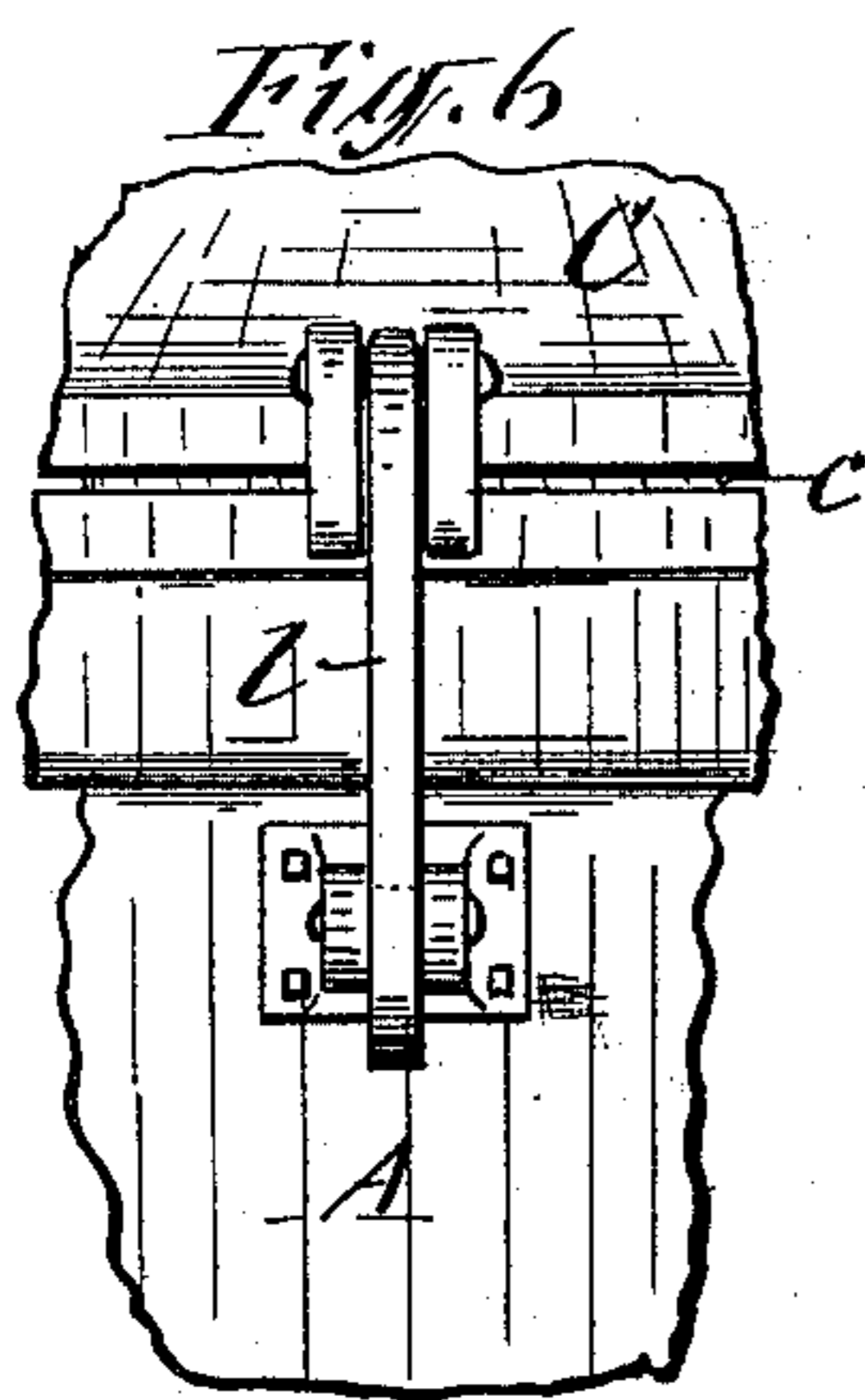
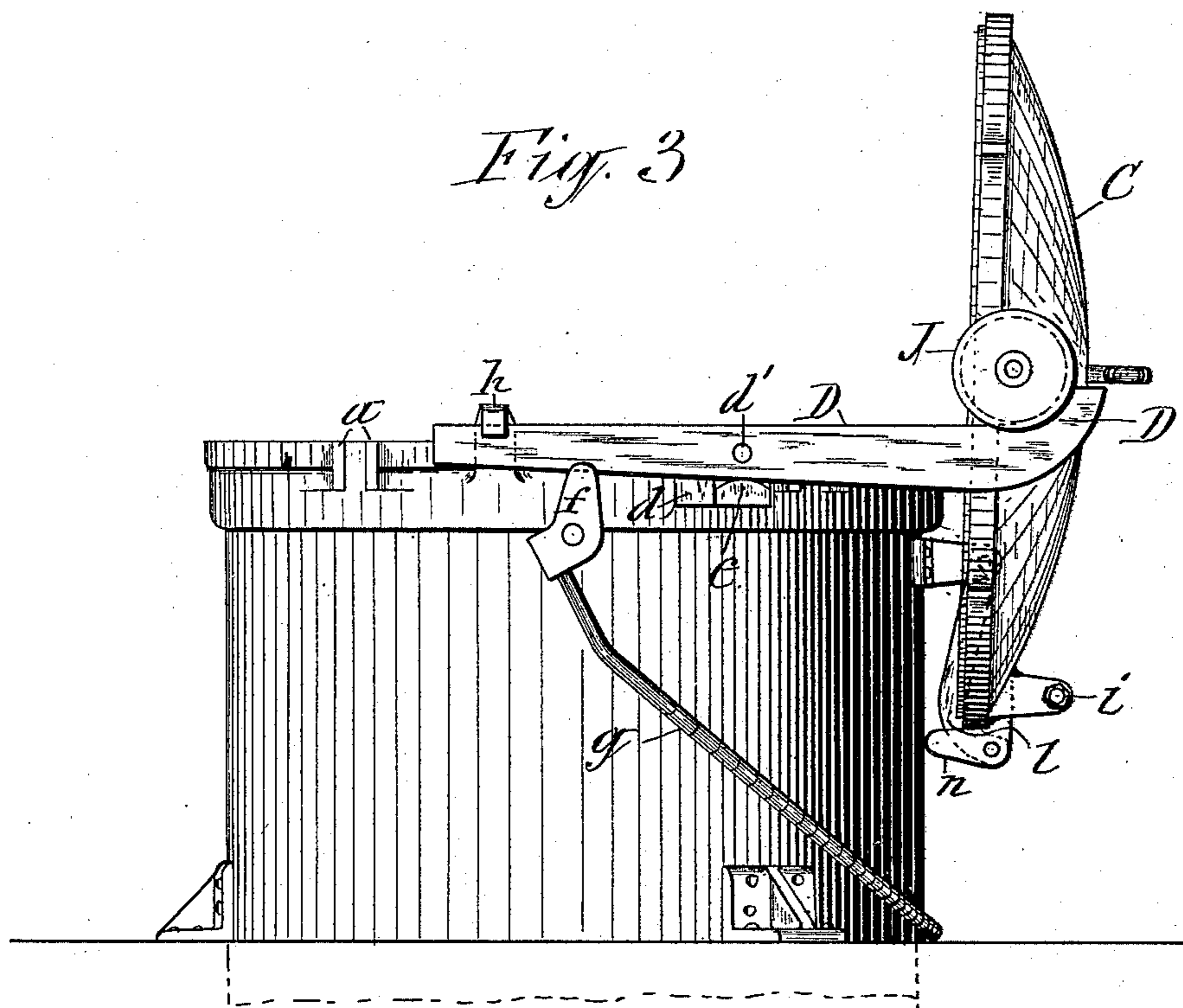
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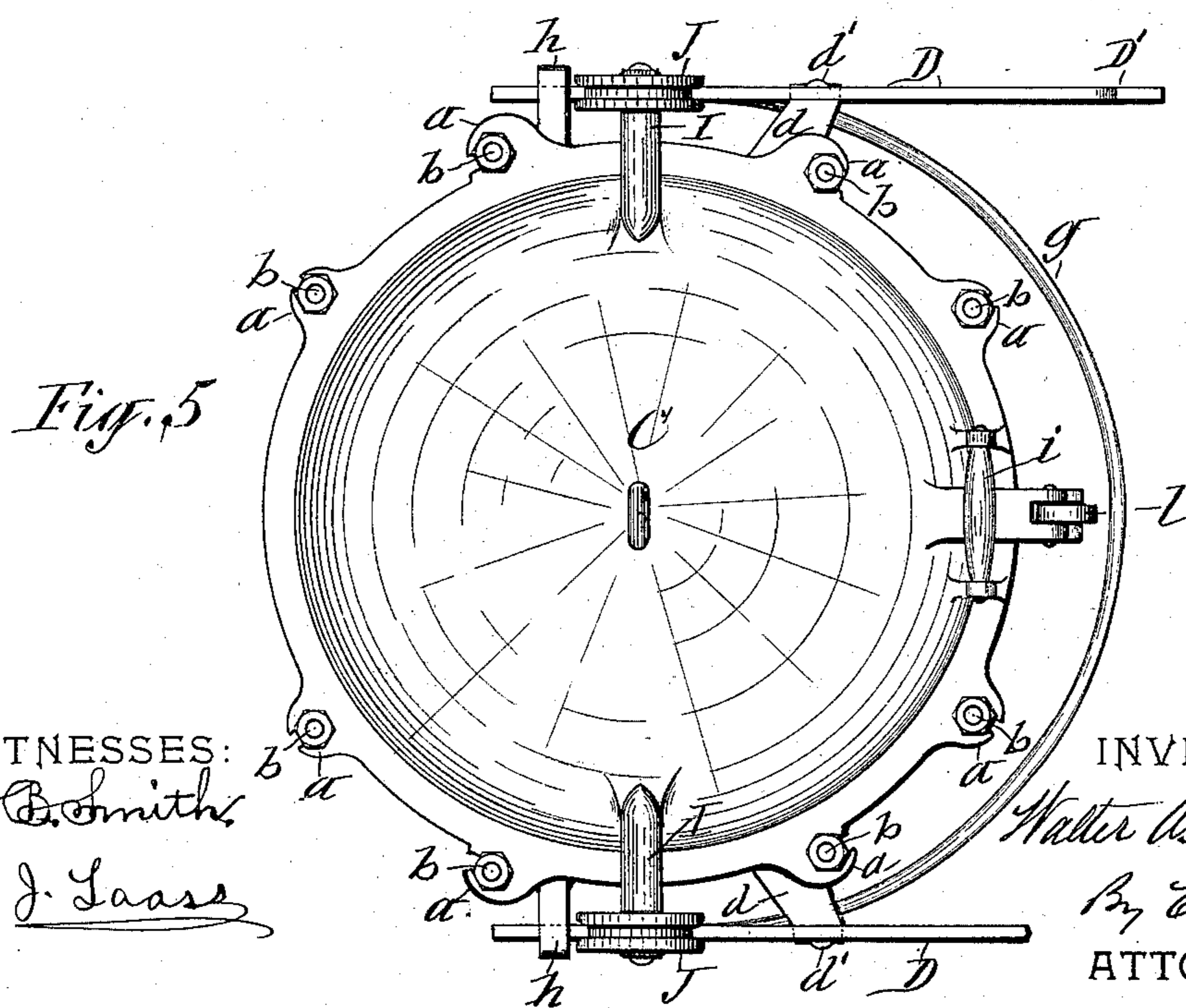
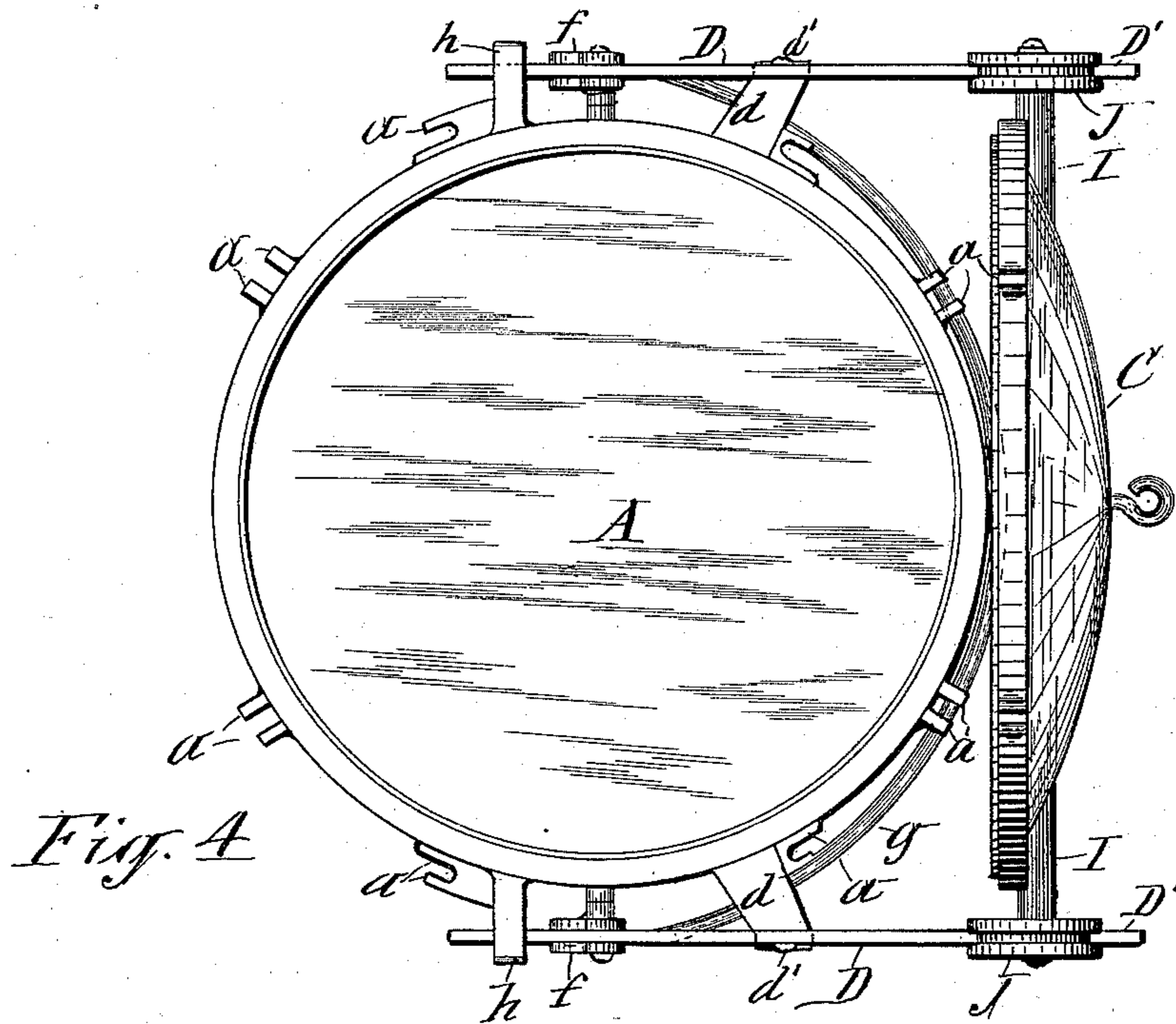
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

WALTER A. BRADLEY, OF OSWEGO, NEW YORK, ASSIGNOR TO THE AMES
IRON WORKS.

DEVICE FOR MANIPULATING TANK-COVERS.

SPECIFICATION forming part of Letters Patent No. 639,014, dated December 12, 1899.

Application filed October 4, 1899. Serial No. 732,507. (No model.)

To all whom it may concern:

Be it known that I, WALTER A. BRADLEY, a citizen of the United States, and a resident of Oswego, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Devices for Manipulating Tank-Covers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to devices for applying and removing heavy metallic covers to and from large tanks.

The object of the invention is to provide simple, convenient, and efficient means for manipulating the cover in shifting it to and from the tank and at the same time economize in room required to accommodate the cover in its removed position; and to that end the invention consists in the novel construction and combination of the cover-shifting devices hereinafter described and as illustrated in the annexed drawings, in which—

Figure 1 is a rear elevation of a tank with its cover closed thereon and equipped with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a side elevation showing the cover removed from the tank. Fig. 4 is a top plan view of the same. Fig. 5 shows the same with the cover applied to the tank. Fig. 6 is a face view of the link connection between the cover and tank, and Figs. 7 and 8 are side views of said link connection.

Similar letters of reference indicate corresponding parts.

A represents a large tank formed of metal and provided with a heavy metallic cover C. Each of said parts is formed with ears *a a* for the reception of bolts *b b*, by means of which the cover is secured to the tank. A gasket *c* is usually interposed to render the joint steam-tight or air-tight.

My invention resides in the means for shifting the cover to and from the tank, and consists of the following elements and combination and structural features of said elements.

From opposite sides of the tank A and in the same direction therefrom extend parallel tracks D D, which are pivoted intermediate their ends to brackets *d d*, projecting from

the sides of the tank at one side of and equidistant from a diametric line through the tank, as more clearly shown in Figs. 4 and 5 of the drawings. Beneath the pivots *d' d'* are auxiliary supports *e e*, formed on the brackets *d d*, to relieve the said pivots of the greater portion of the weight of the tracks and cover C carried thereon.

The cover C has rigidly projecting from it arms I I, which are diametrically opposite each other and are provided with suitable carriers J J, preferably of the form of rollers, pivoted to said arms and riding on the aforesaid tracks. These tracks are tilted on their pivots to facilitate the travel of the cover C in shifting the same to and from the tank. To effect said tilting in a convenient manner, I pivot to the exterior of the tank cams *f f*, to which is attached a two-armed lever *g* for operating said cams. By turning said cams in one direction on their pivots they are caused to lift the overlying ends of the tracks D D and thereby lift the cover C from the tank when released from the tie-bolts *b b*. To limit said tilting of the tracks, I provide the tank A with rigidly-projecting stops *h h* directly over the lifted end portions of the tracks, and when the tracks are in contact with said stops the tracks are in horizontal position, as shown in Fig. 3 of the drawings.

The cover is removed from the tank by the operator drawing the cover to the outer ends of the tracks, which are formed with stops *D'* to limit the travel of the cover and to support the same in a vertical position adjacent to the tank, as represented in Figs. 3 and 4 of the drawings. To facilitate the manipulation of the cover in shifting the same from the tank, I provide said cover with a suitable handle *i*.

It will be observed that by tilting the cover as aforesaid I economize in room required to accommodate the removed cover. To insure the said tilting movement of the cover, I connect the same to the tank central between the tracks D D by means of a link *l*, which swings into an inverted position and draws the cover into a vertical position when moved to the outer ends of the tracks D D, as illustrated in Figs. 3 and 7 of the drawings.

n denotes a lug which projects from the

cover and rests on the exterior of the tank when the cover is in its aforesaid vertical position.

What I claim is—

5 1. The combination, with the tank and its removable cover, of tracks extending parallel from the tank and movable to inclined position, and carriers riding on said tracks and supporting the cover during its transfer to
10 and from the tank.

2. The combination, with the tank and its removable cover, of tracks extending parallel from the tank and pivotally supported intermediate their ends, and rollers pivoted to the
15 cover and riding on the tracks during the transfer of the cover to and from the tank as set forth.

3. The combination, with the tank and its removable cover, of brackets projecting from
20 opposite sides of the tank at one side of and equidistant from a diametric line through the tank, parallel tracks pivoted to said brackets, and carriers riding on said tracks and supporting the cover during its transfer
25 to and from the tank as set forth.

4. The combination, with the tank and its removable cover, of brackets projecting from opposite sides of the tank at one side of and equidistant from a diametric line through the
30 tank, parallel tracks pivoted to said brackets, auxiliary supports for the tracks under the pivots thereof, and carriers riding on said tracks, and supporting the cover during its transfer to and from the tank as set forth.

5. The combination, with the tank and its removable cover, of brackets projecting from opposite sides of the tank at one side of and equidistant from a diametric line through the
35 tank, parallel tracks pivoted intermediate their ends to said brackets, arms extending from opposite sides of the tank at the aforesaid diametric line, and rollers pivoted to said arms directly over the tracks as set forth.
40

6. The combination, with the tank and its
45 cover, of tracks extending parallel from the tank and pivotally supported intermediate their ends, rollers pivoted to the cover and riding on the tracks, and cams disposed to tilt the tracks and thereby lift the cover from
50 the tank as set forth.

7. The combination, with the tank and its cover, of tracks extending parallel from the tank and pivotally supported intermediate their ends, rollers pivoted to the cover and

riding on said tracks, cams disposed to tilt 55 the tracks, and a lever operating said cams as set forth.

8. The combination with the tank and its cover, of tracks extending parallel from opposite sides of the tank and pivotally supported intermediate their ends, rollers pivoted to the cover and riding on the tracks, stops on the outer ends of the tracks limiting the travel of the cover, stops on the tank limiting the tilting movement of the cover, cams
60 pivoted to the tank for tilting the tracks, and a lever operating said cams as set forth. 65

9. The combination, with the tank and its cover, of tracks extending parallel from opposite sides of the tank, rollers pivoted to the
70 cover and riding on the tracks, and a link connecting the cover to the tank central between the tracks. 75

10. The combination, with the tank and its cover, of tracks extending parallel from opposite sides of the tank and pivotally supported to assume an inclined position, rollers pivoted to the cover and riding on the tracks, means for tilting the tracks and thereby lifting the cover from the tank, and a link connecting the cover to the tank central between
80 the tracks as set forth. 85

11. The combination with the tank and its cover, of tracks extending parallel from opposite sides of the tank and pivotally supported intermediate their ends, rollers pivoted to the cover and riding on the tracks, means for tilting the tracks and thereby lifting the cover from the tank, stops on the tank limiting the tilting of the cover, and a link
90 connecting the cover to the tank central between the tracks, as set forth. 95

12. The combination with the tank and its cover, of tracks extending parallel from opposite sides of the tank and pivotally supported intermediate their ends on the tank, rollers pivoted to the cover and riding on the tracks, cams pivoted to the tank for tilting the tracks, a lever for operating said cams, stops on the tank limiting the tilting of the
100 tracks, stops on the outer ends of the tracks limiting the travel of the cover, and a link connecting the cover to the tank central between the tracks as set forth and shown.

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Witnesses:

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