

S. A. LARSSON.

DUMPING CAR.

APPLICATION FILED JUNE 18, 1908.

903,295.

Patented Nov. 10, 1908.

3 SHEETS—SHEET 1.

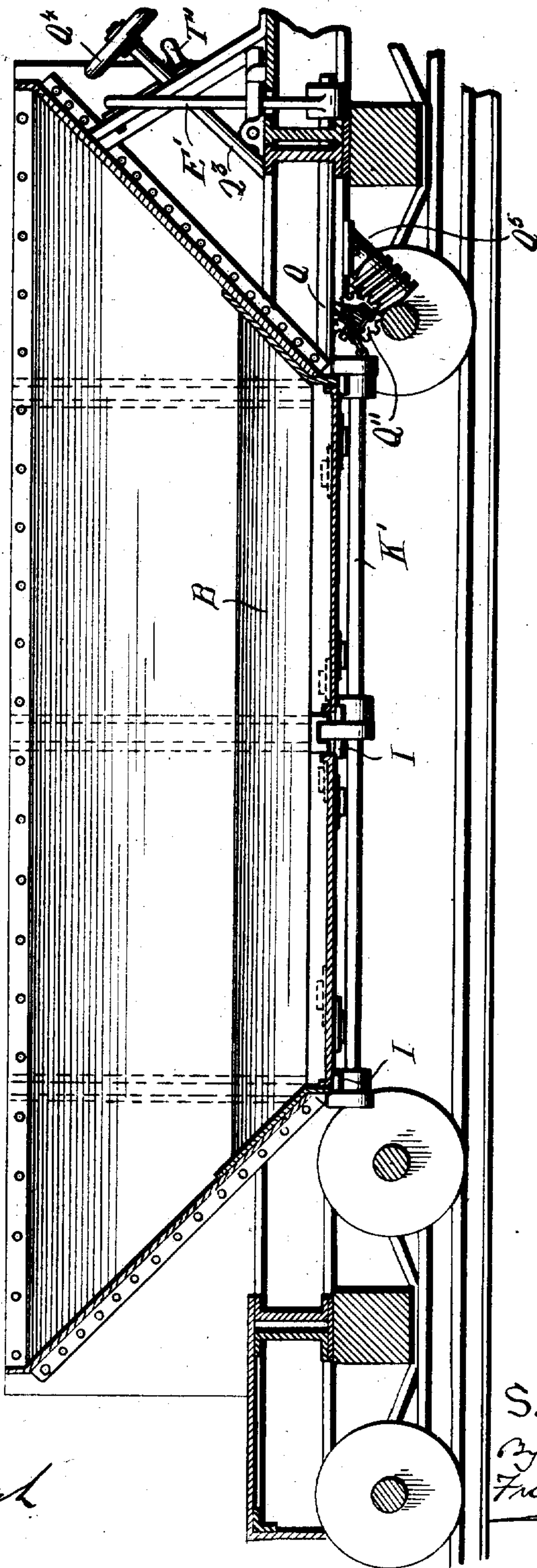


Fig. 1.

WITNESSES:

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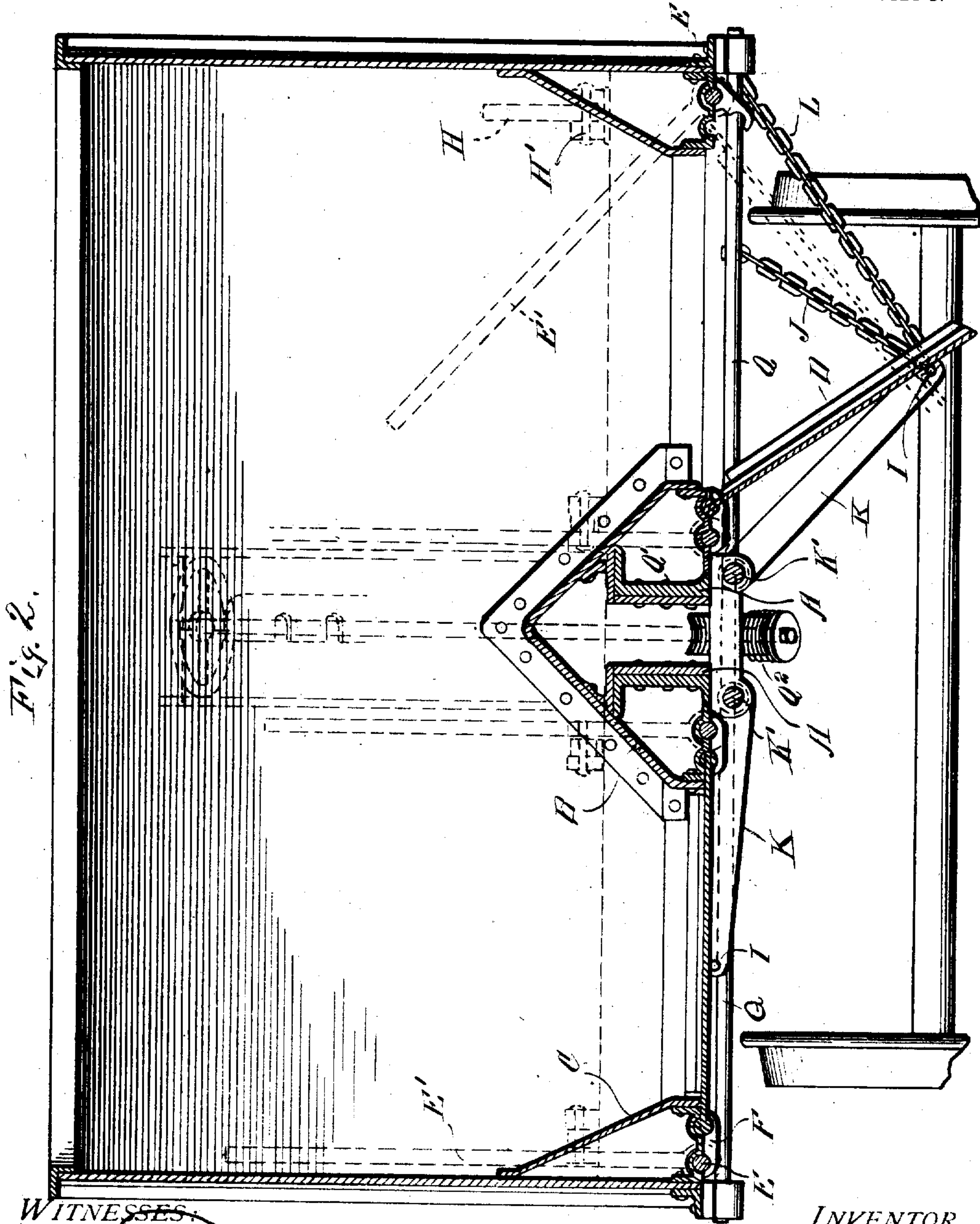
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8 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 4.

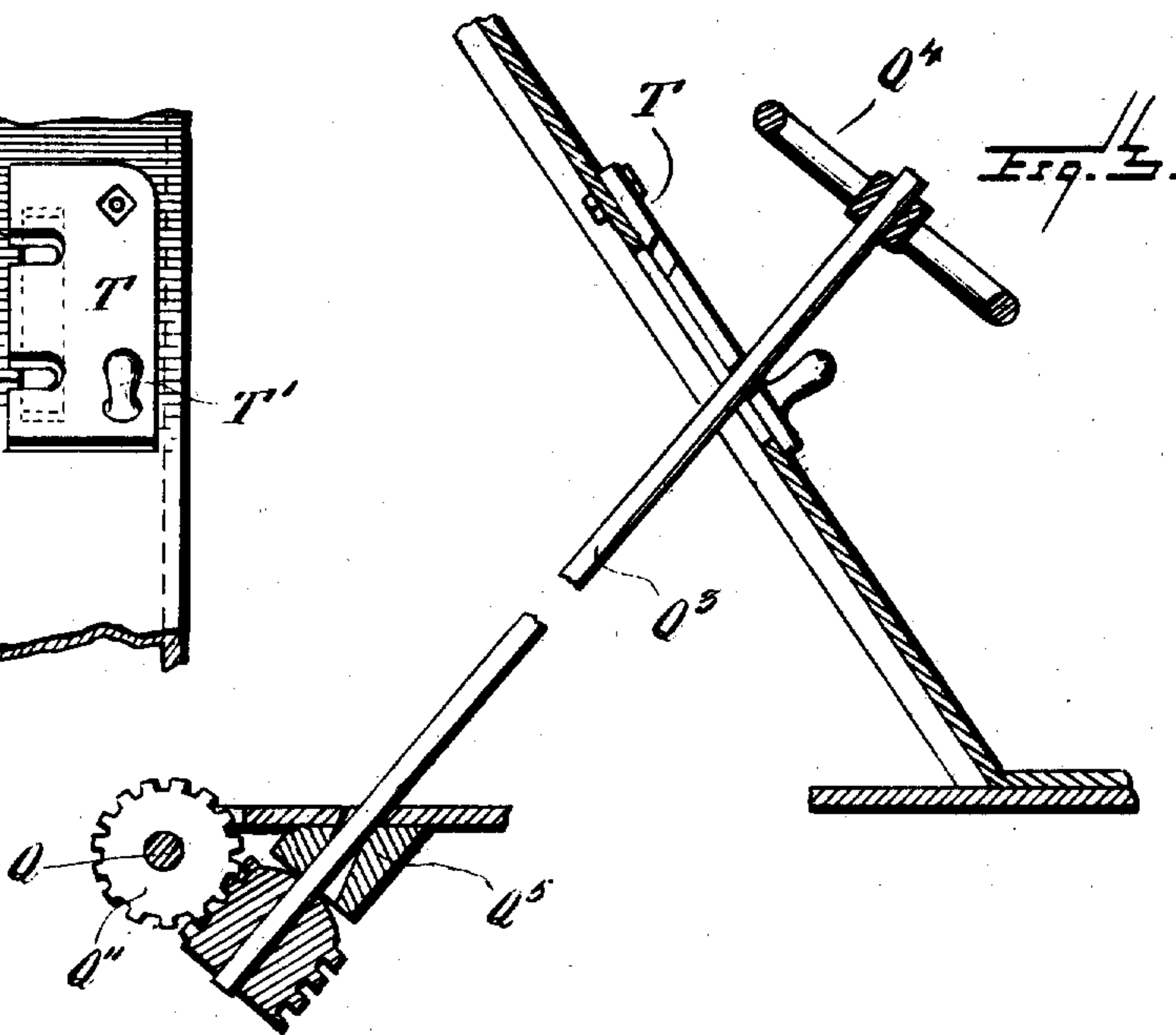
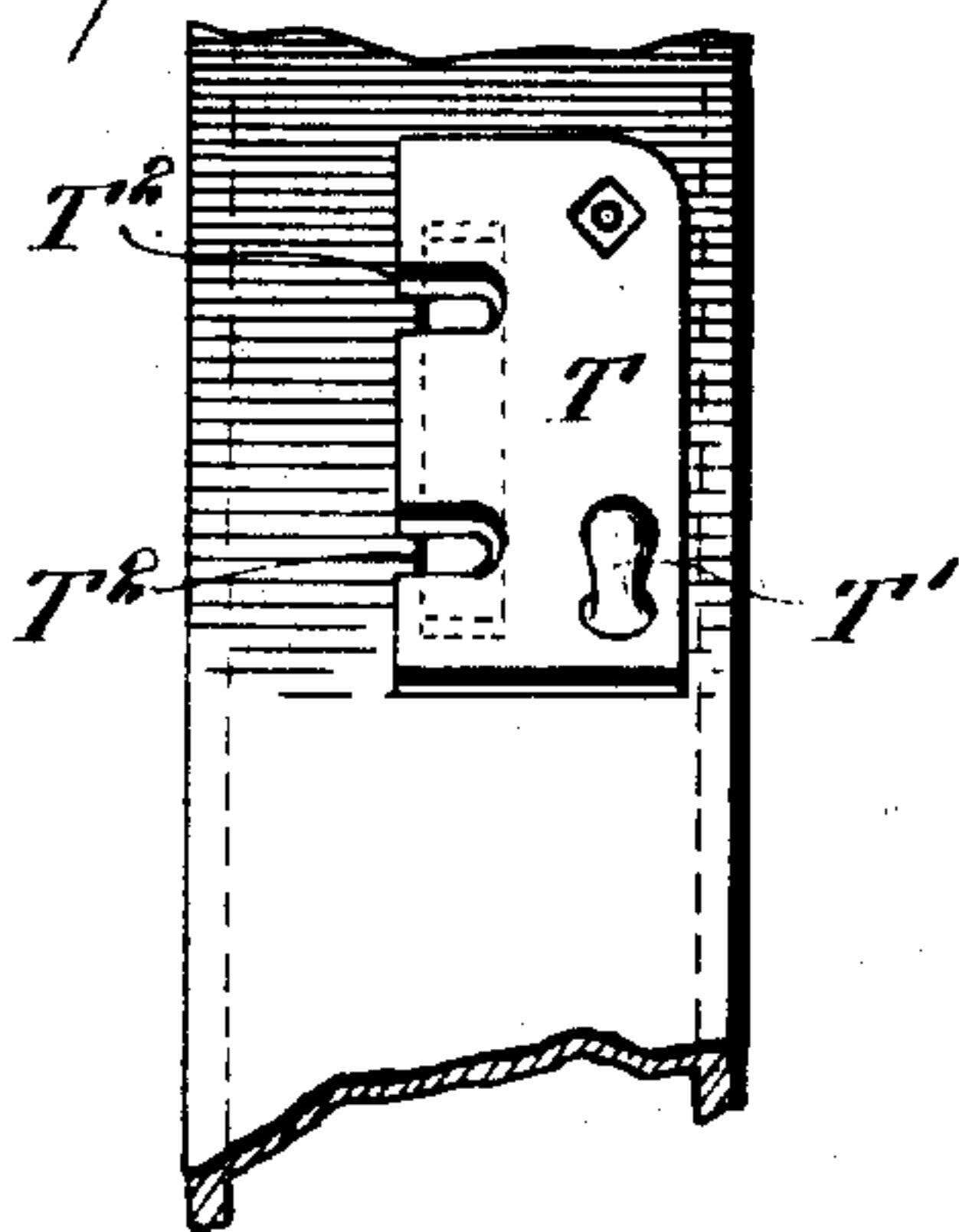


Fig. 5.

Fig. 6.

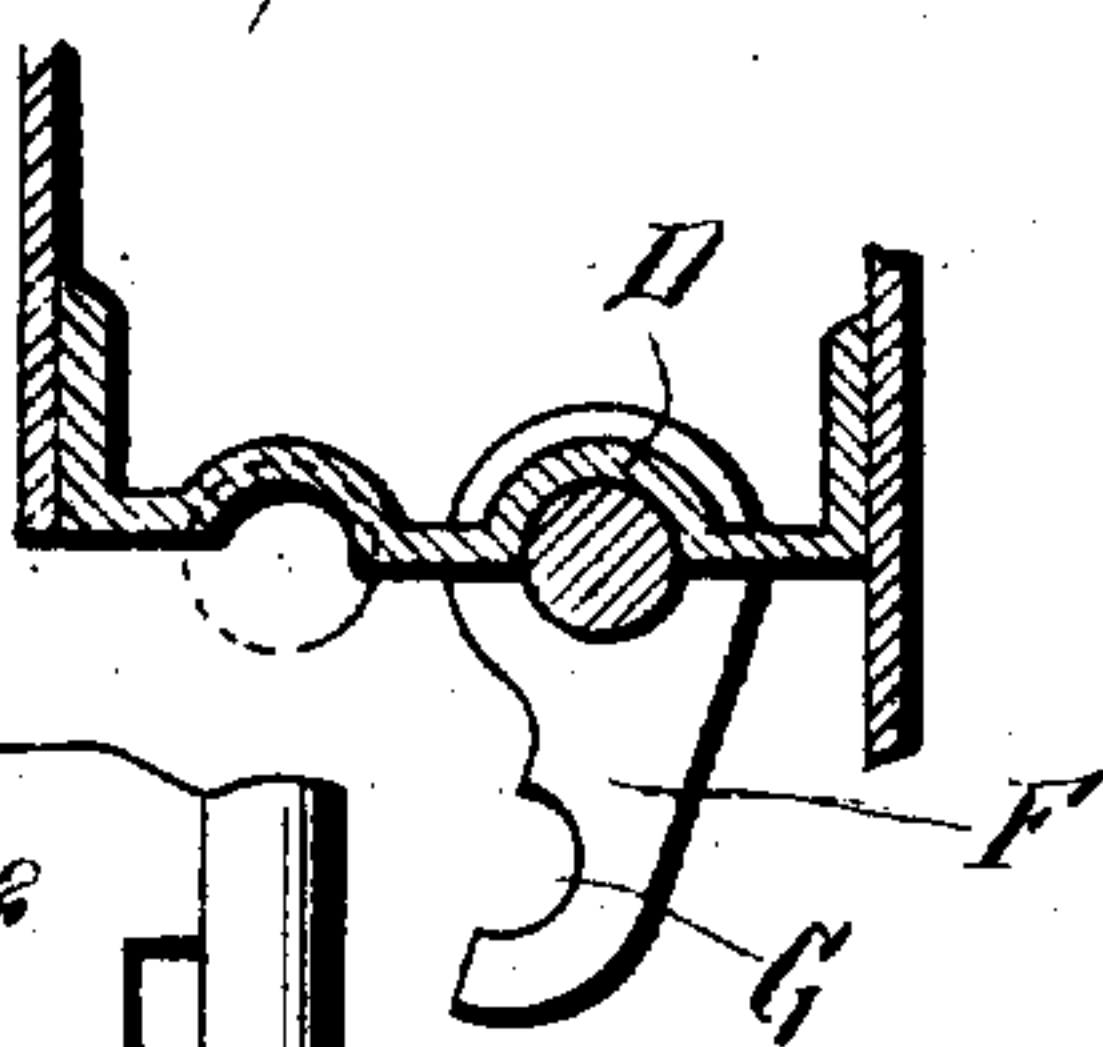


Fig. 7.

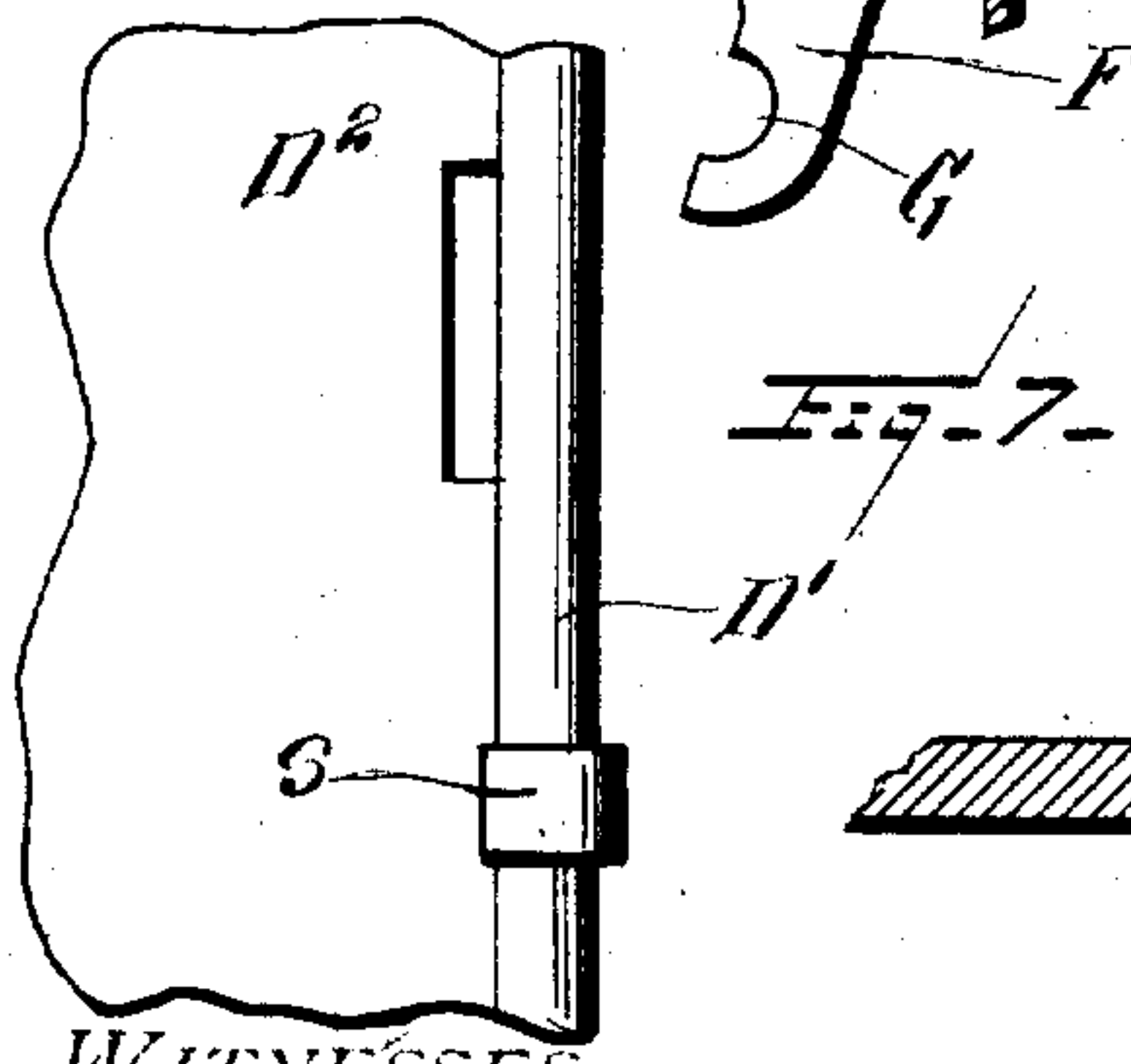
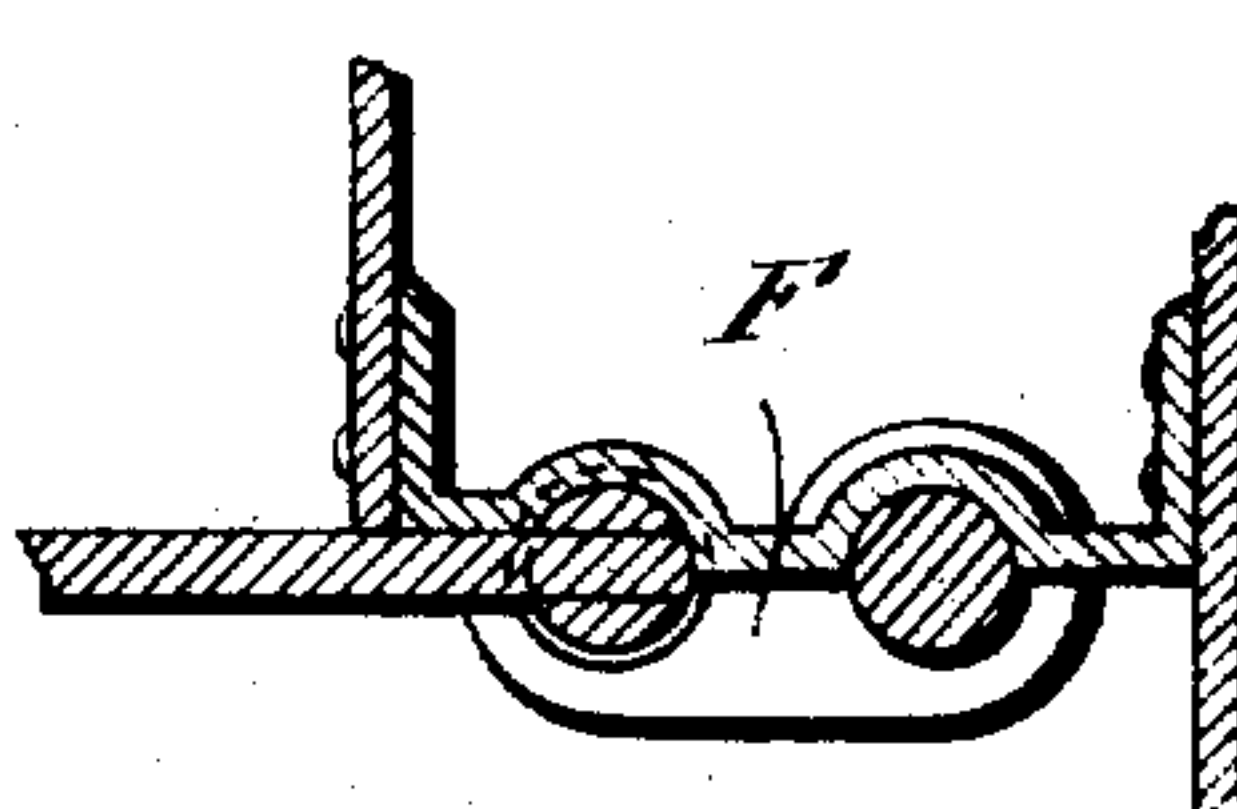
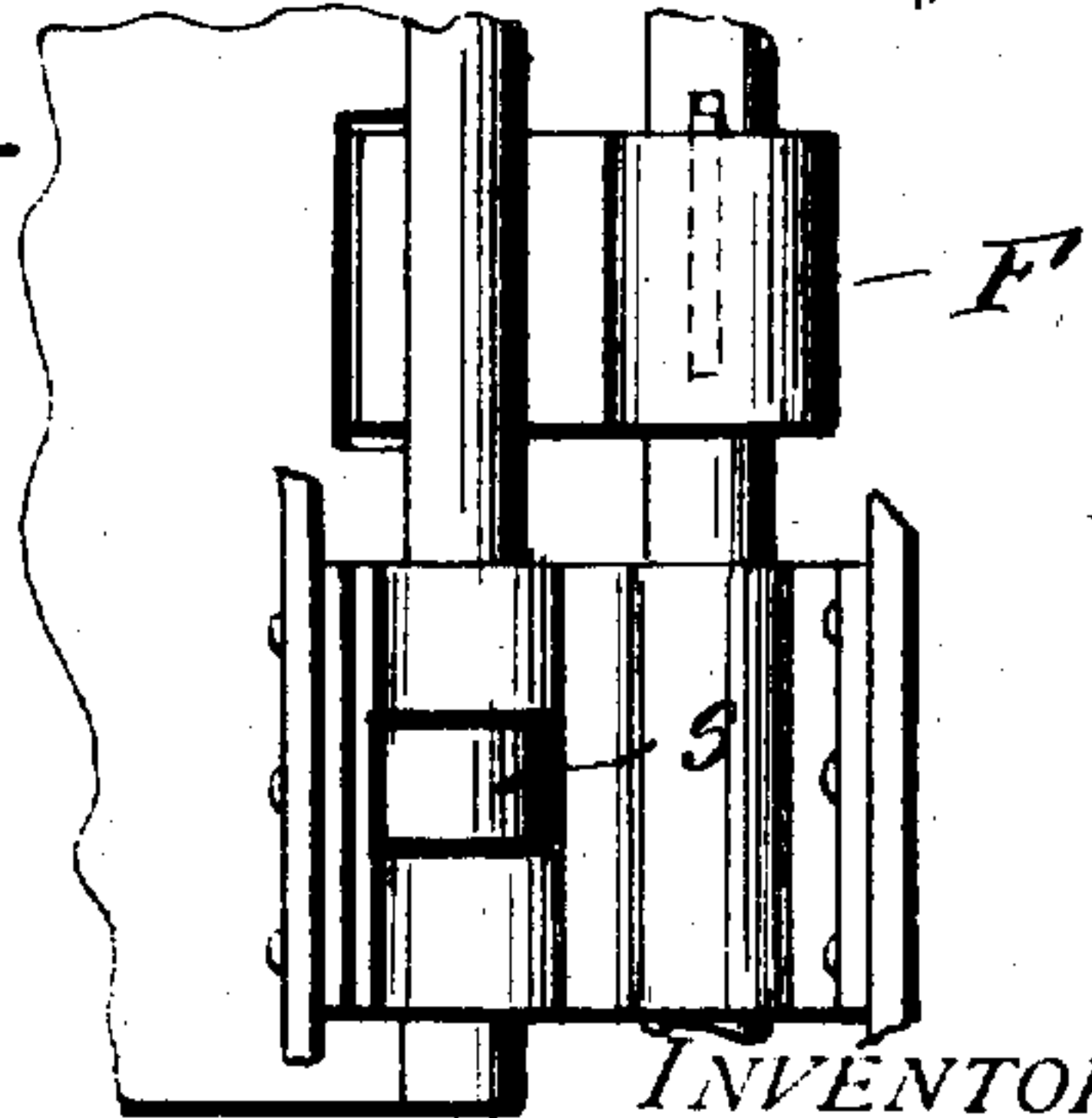
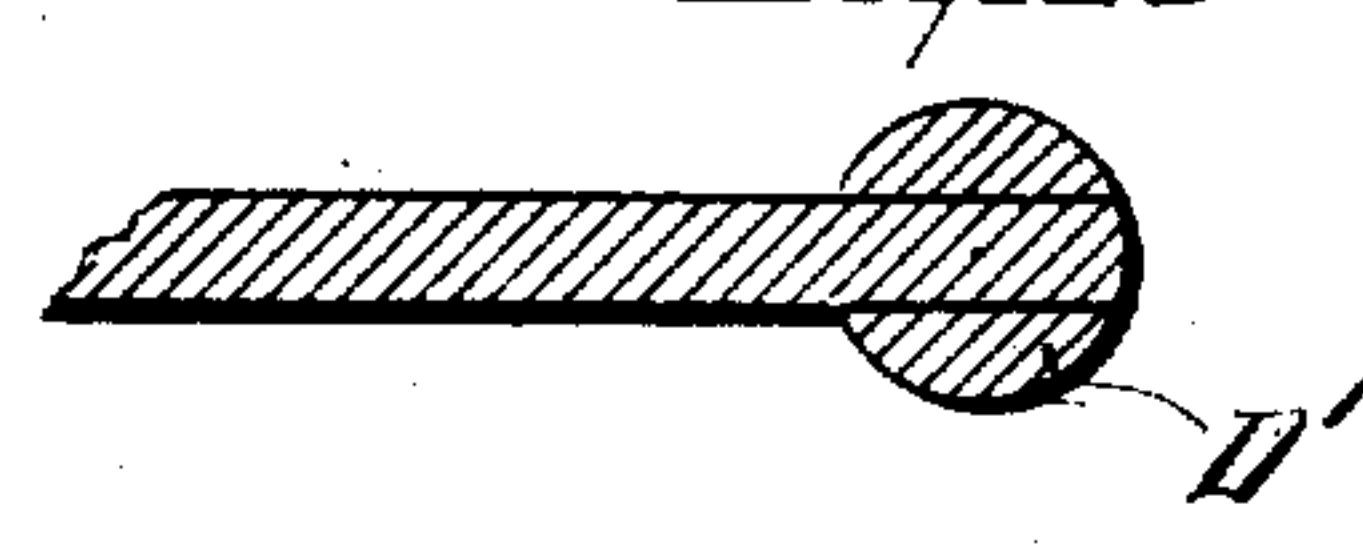


Fig. 9.

Fig. 10.



WITNESSES

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UNITED STATES PATENT OFFICE.

SANFORD AUGUST LARSSON, OF DENVER, COLORADO.

DUMPING-CAR.

No. 903,295.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed June 18, 1908. Serial No. 439,136.

To all whom it may concern:

Be it known that I, SANFORD A. LARSSON, a subject of the King of Sweden, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Dumping-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in dumping cars and the object in view is to produce a simple and efficient apparatus so arranged that the contents of the car may be dumped in the center or to one side accordingly as may be desired.

The invention comprises various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a car showing my invention as applied thereto. Fig. 2 is a cross sectional view through the car. Fig. 3 is a detail sectional view of the means for releasing the doors. Fig. 4 is a detail view of a device for holding the pinion carrying shaft shown in Fig. 3. Fig. 5 is a cross sectional view through a portion of the frame of the car showing the door releasing lock open. Fig. 6 is a similar view showing the device holding the door in locked relation. Fig. 7 is a detail view of one edge of a door. Fig. 8 is a detail view in section of a portion of the door showing the rounded edge thereof. Fig. 9 is a detail view showing the locking devices engaging slots in one of the doors.

Reference now being had to the details of the drawings by letter, A—A designate the usual steel channel center sills of the car, and B is a sheet iron hood adapted to protect the parts of the invention positioned thereunder, which parts constitute the combination hinge mechanism of doors adapted to swing in opposite directions. C designate shields which are fastened to the opposite inner surfaces of the side walls of the car and provided to

protect similar mechanism adjacent to the edges of the car.

The dumping doors, designated by letter D, have upon their opposite edges the cylindrical beadings D', a detail view of a portion of one of said doors being shown in Fig. 8 of the drawings, the edges of the doors being thus formed so that each side may act as a pivot in the combination lock and hinge mechanism which will be presently described.

Mounted adjacent to the outer sides of the car are the shafts E, one upon either side and running preferably the length of the doors, and E' designates handles fastened to the shafts E whereby the latter may be rocked. Fixed to each shaft E is a combination hinge and lock member, designated by letter F, enlarged details of which are shown in Figs. 5 and 6 of the drawings, each having a curved outlined recess G therein adapted to form a bearing for the rounded edge D' of the door. It will be noted that there are four of the shafts E, two pivoted near the sides of the car and two near the channel irons A and of similar construction, and to each shaft E are fixed the handles and the combination hinge and lock members F so arranged that one side or the other of the doors may be pivoted while the other edge swings according as one or the other of the members F is released. A lock lever H is pivotally mounted upon a pin H' upon the frame of the car and is designed to hold the handles E' in upright or locked positions.

Raising arms K are pivotally connected at corresponding ends to the shafts K' which run preferably the length of the doors and their outer portions carry the lateral projections or lugs I which are adapted to contact with the doors and designed to limit the downward movements of the same.

Shafts Q are journaled in suitable bearings upon the frame of the car and chains or cables J are fastened to the shafts Q about which they are designed to wind and their other ends secured to the raising arms K.

A safety chain L is fastened at one end to the frame of the car and its other end to the outer end of the raising arm L' and prevents said arm from dropping down too far when the door is dumped on the outside, in which position the door will be as shown in Fig. 2 of the drawings.

Referring to Figs. 7 and 9 of the drawings will be seen collars S which are formed upon

the edges of the dumping doors, said collars being adapted to fit in slots S' in the brackets forming a portion of the frame of the car, as shown in Fig. 9 of the drawings, said collars
5 being provided for the purpose of preventing an endwise movement to the doors while being raised.

It will be noted upon reference to Figs. 7 and 9 of the drawings that slots B² are
10 formed in the doors adjacent to the edges thereof and provided for the reception of the ends of the combination hinge and locking members F, thus forming a hinged joint in the swinging door when the opposite side is
15 to swing freely.

Fixed to the shaft Q is a pinion Q¹, shown clearly in Figs. 2 and 3 of the drawings, which pinion is in mesh with a worm Q² fixed to or integral with the shaft Q³ having a
20 hand wheel Q⁴ fixed thereto. Said shaft Q³, which is set at an inclination, passes through a bearing Q⁵ in the frame of the car and is fulcrumed therein.

A pivotal plate T is mounted upon the
25 frame of the car, details of which plate are shown in Figs. 3 and 4 of the drawings, and a handle T' upon said plate provides means whereby the latter may be swung upon its pivot. One of the edges of said plate is pro-
30 vided with notches or grooves T² for the reception of the shaft in the manner shown in Fig. 3 of the drawings, whereby the shaft may be held in one or the other of the notches to hold the pinions in mesh or out of mesh
35 with each other.

The operation of my apparatus is as follows:—When it is desired to dump the wagon, the shaft Q is tilted so that the pinion fixed thereto will be out of mesh with
40 the pinion Q¹, thus allowing the chain upon the shaft Q to unwind. If it is desired to cause the load to be dumped to the side of the car, the lever E³ fixed to the shaft E adjacent to the side of the car is turned down
45 after throwing the releasing lever H, thus allowing the outer edge of the door to swing freely while the inner edge is held in a pivotal relation with the locking member adjacent to the channel irons A. The downward
50 throw of the dumping door is limited by the chain and, when it is desired to return the door to its normal position, it may be done by the operator first throwing the shaft Q³ back into such a position that the pinion
55 thereon will engage the pinion Q¹ after which, by rotating the handle Q⁴ and shaft, the chain may be rewound upon the shaft and the door returned to its horizontal or closed position. When it is desired to dump
60 the car to the center, the same operation is repeated with the exception that the door is released at its inner end while its outer end is held in pivotal relation.

From the foregoing, it will be noted that,
65 by the provision of a dumping apparatus for

cars as shown and described, a simple and efficient means is afforded whereby the contents of the car may be dumped with equal facility whether at the center or at one side and the doors quickly and readily returned
70 to their normal positions.

What I claim to be new is:—

1. A dumping car, shafts journaled therein, means for rocking said shafts, hinged members fixed to said shafts and having
75 grooves therein, doors having beaded edges adapted to be engaged by one or the other of said hinged members accordingly as it may be desired to allow one edge of the door or the other to swing while the other is hinged,
80 as set forth.

2. A dumping car, shafts journaled therein, means for rocking said shafts, hinged members fixed to said shafts and having
85 grooves therein, doors having beaded edges adapted to be engaged by one or the other of said hinged members accordingly as it may be desired to allow one edge of the door or the other to swing while the other is hinged, and means for returning the doors to their
90 normal positions, as set forth.

3. A dumping car, shafts journaled therein, means for rocking said shafts, hinged members fixed to said shafts and having
95 grooves therein, doors having beaded edges adapted to be engaged by one or the other of said hinged members accordingly as it may be desired to allow one edge of the door or the other to swing while the other is hinged, swinging arms, projections thereon adapted
100 to contact with said doors, and means for raising said arms whereby the doors may be returned to their normal positions, as set forth.

4. A dumping car, shafts journaled therein, means for rocking said shafts, hinged
105 members fixed to said shafts and having grooves therein, doors having beaded edges adapted to be engaged by one or the other of said hinged members accordingly as it may
110 be desired to allow one edge of the door or the other to swing while the other is hinged, swinging arms, projections thereon adapted to contact with said doors, means for raising
115 said arms whereby the doors may be returned to their normal positions, a pinion and shaft carrying the same, an operating shaft having a worm thereon in engagement with said pinion, said worm carrying shaft so
120 arranged as to be thrown into or out of gear with said pinion, as set forth.

5. A dumping car, shafts journaled therein, means for rocking said shafts, hinged
125 members fixed to said shafts and having grooves therein, doors having beaded edges adapted to be engaged by one or the other of said hinged members accordingly as it may be desired to allow one edge of the door or the other to swing while the other is hinged, swinging arms, projections thereon adapted
130

to contact with said doors, means for raising said arms whereby the doors may be returned to their normal positions, a pinion and shaft carrying the same, an operating shaft having a worm thereon in engagement with said pinion, said worm carrying shaft so arranged as to be thrown into or out of gear with said pinion, and means for holding said worm carrying shaft in mesh or out of mesh with the pinion, as set forth.

6. A dumping car, shafts journaled therein, means for rocking said shafts, hinged members fixed to said shafts and having grooves therein, doors having beaded edges adapted to be engaged by one or the other of said hinged members accordingly as it may be desired to allow one edge of the door or the other to swing while the other is hinged, swinging arms, projections thereon adapted to contact with said doors, means for raising said arms whereby the doors may be returned to their normal positions, a pinion and shaft carrying the same, an operating shaft having a worm thereon in engagement with said pinion, said worm carrying shaft so arranged as to be thrown into or out of gear with said pinion, a pivotal plate having recesses in the edge thereof adapted to engage the worm carrying shaft to hold the worm thereon into or out of mesh with said pinion, as set forth.

7. A dumping car, shafts journaled therein, means for rocking said shafts, hinged members fixed to said shafts and having grooves therein, doors having beaded edges adapted to be engaged by one or the other of said hinged members accordingly as it may be desired to allow one edge of the door or the other to swing while the other is hinged, swinging arms, projections thereon adapted

to contact with said doors, means for raising said arms whereby the doors may be returned to their normal positions, a pinion and shaft carrying the same, an operating shaft having a worm thereon in engagement with said pinion, said worm carrying shaft so arranged as to be thrown into or out of gear with said pinion, means for holding said worm carrying shaft in mesh or out of mesh with the pinion, and means for guiding the door as it is swung upon its pivotal edge, as set forth.

8. A dumping car, shafts journaled therein, means for rocking said shafts, hinged members fixed to said shafts and having grooves therein, doors having beaded edges adapted to be engaged by one or the other of said hinged members accordingly as it may be desired to allow one edge of the door or the other to swing while the other is hinged, swinging arms, projections thereon adapted to contact with said doors, means for raising said arms whereby the doors may be returned to their normal positions, a pinion and shaft carrying the same, an operating shaft having a worm thereon in engagement with said pinion, said worm carrying shaft so arranged as to be thrown into or out of gear with said pinion, means for holding said worm carrying shaft in mesh or out of mesh with the pinion, said beaded edge of the door having an integral collar adapted to engage a groove in the frame of the car to guide the door, as set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

SANFORD AUGUST LARSSON.

Witnesses:

MARGARET JACUS MANNING,
ELSIE TEMPLETON NEWPHER.