

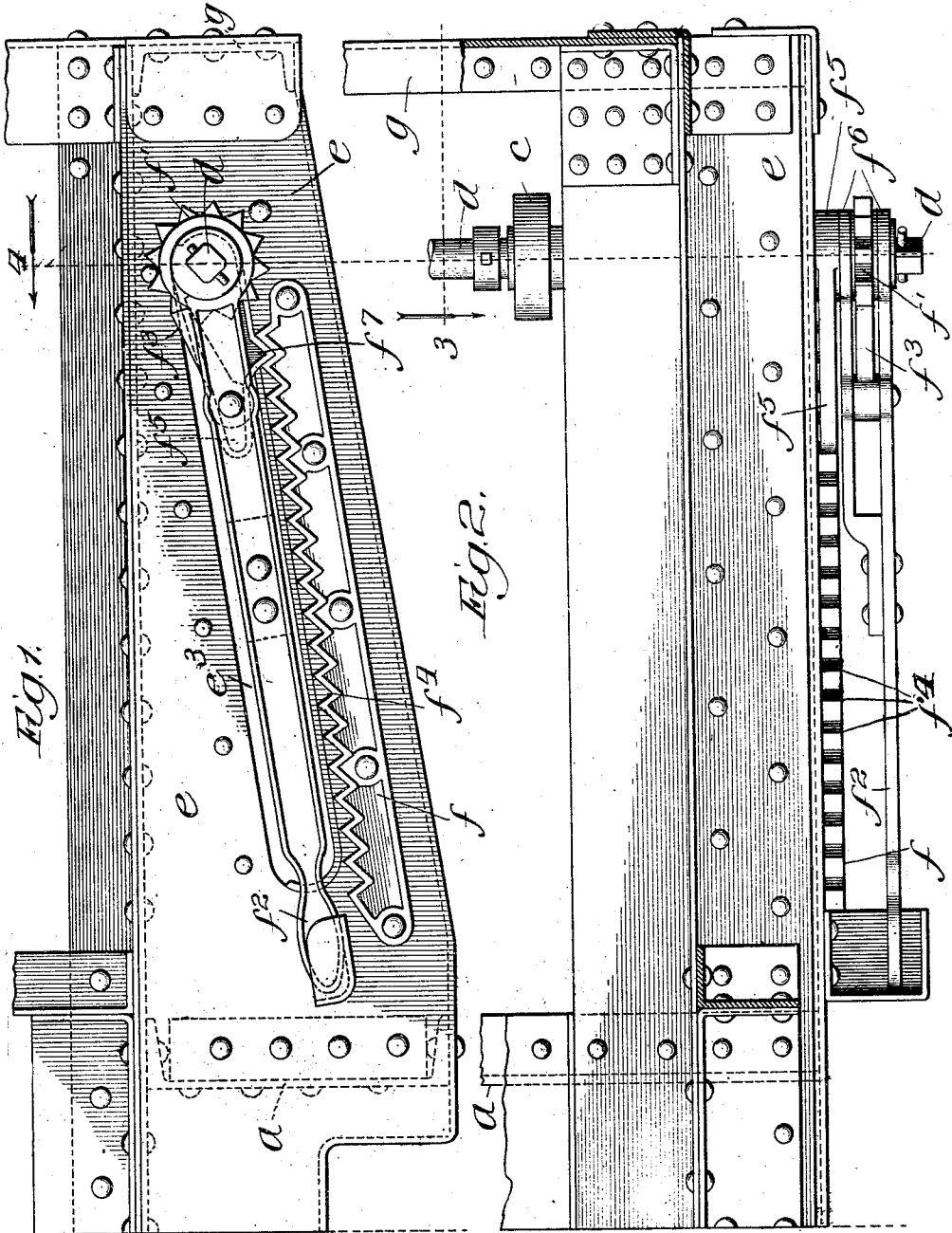
No. 833,547.

PATENTED OCT. 16, 1906.

E. POSSON.
DUMP CAR.

APPLICATION FILED FEB. 8, 1906.

4 SHEETS—SHEET 1.



Witnesses:

Edw. P. Osborn,
John Enders.

Inventor:

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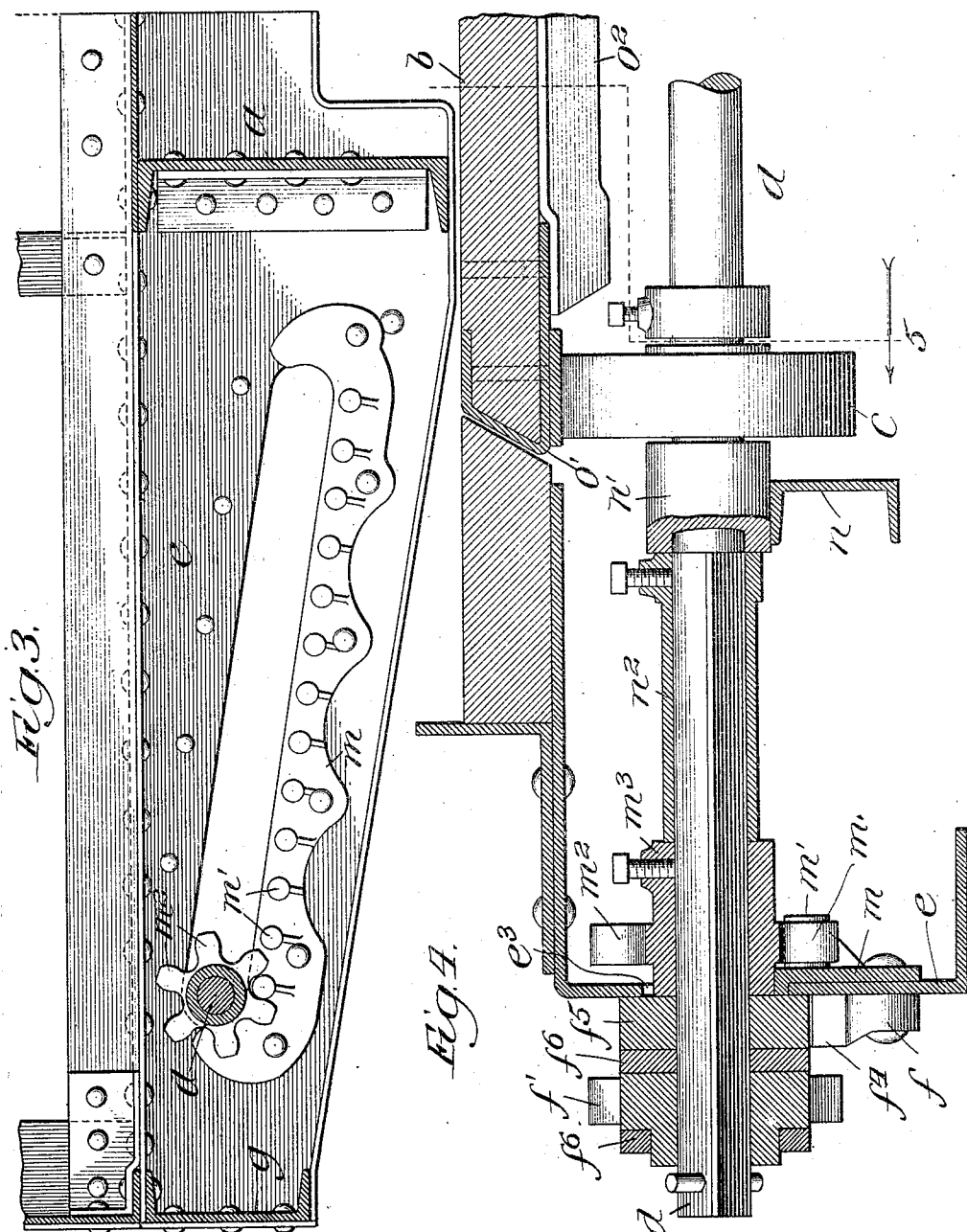
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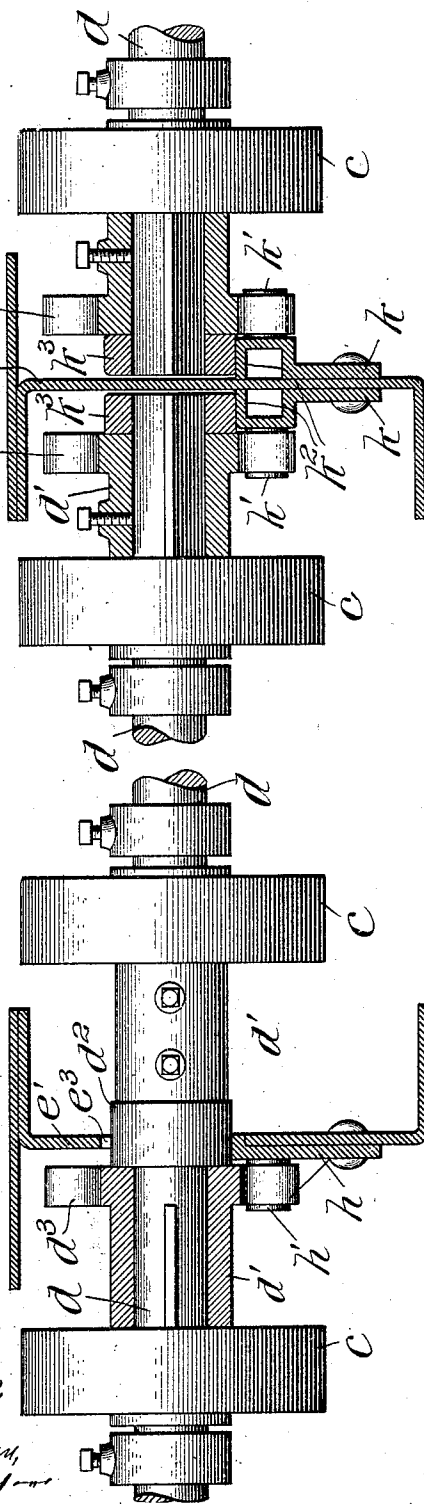
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4 SHEETS—SHEET 3.



Witnesses: *Edward Passon,*
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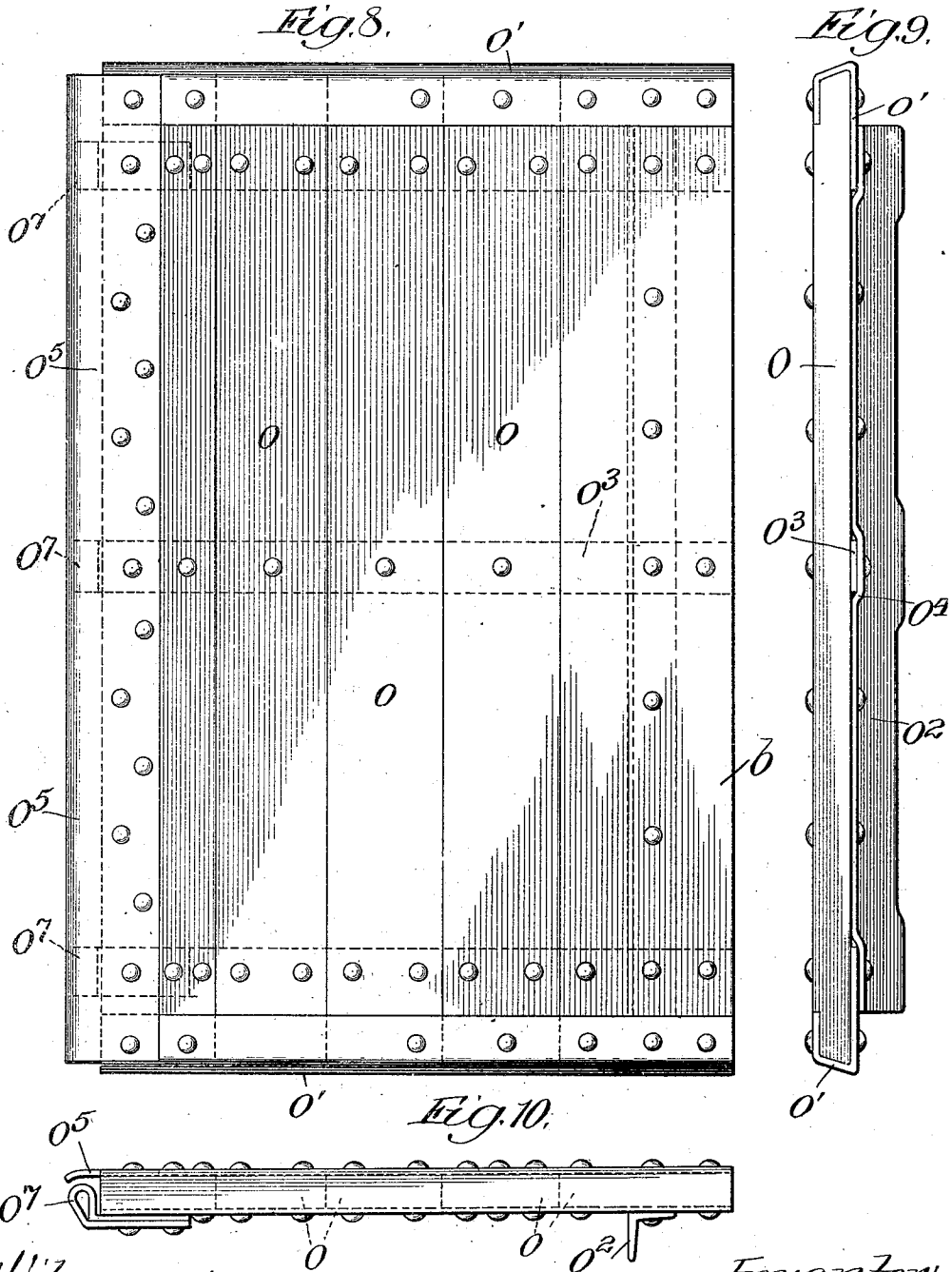
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4 SHEETS—SHEET 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD POSSON, OF CHICAGO, ILLINOIS.

DUMP-CAR.

No. 833,547.

Specification of Letters Patent.

Patented Oct. 16, 1906.

Application filed February 8 1906. Serial No. 300,152.

To all whom it may concern:

Be it known that I, EDWARD POSSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dump-Cars, of which the following is a specification.

My invention relates to dump-cars of the type in which the bottom is composed substantially entirely of dumping-doors, forming a flat-bottom car when the doors are closed, which may be used for the same purposes as the ordinary gondola car.

My invention has for one of its objects to provide improved means for operating the dumping-doors. Other objects will appear from the following description of my invention.

My invention consists in the construction set forth in the accompanying specification and claims.

In the drawings, Figure 1 is an end elevation of a portion of my car, showing a part of the end sill and the door-operating mechanism; Fig. 2, a plan view of the parts shown in Fig. 1; Fig. 3, an end view of a portion of the end sill, viewed from the inside, showing a part of the operating mechanism; Fig. 4, a longitudinal section on the line 4 of Fig. 1; Fig. 5, a transverse section on the line 5 of Fig. 4; Fig. 6, a longitudinal sectional view of a portion of the car, showing the structure at one of the intermediate cross-sills; Fig. 7, a view similar to Fig. 6, showing the structure at the center cross-sill; Fig. 8, a plan view of one of the doors; Fig. 9, a side elevation of the door and Fig. 10 an end elevation thereof.

Referring to the drawings, *a* indicates the center sill; *b*, dumping-doors hinged thereto. *e*, *e'*, and *e''* represent, respectively, the end sill, the intermediate cross-sill, and the center cross-sill. The end and intermediate cross-sills are provided with inclined slots *e''*. Mounted in these slots is a shaft *d*, extending from the end sill of the car to the center sill *e''* thereof, where it is supported in a manner presently to be described. This shaft *d* is provided at intervals with rollers *c*, bearing against the under side of the hinged dumping-doors. It will be readily understood that when the shaft is moved in a direction toward the center sill the doors will be permitted to drop, while the reverse movement of the shaft will close the doors.

In order to operate the doors, I provide the following mechanism: Upon the end of the

shaft outside the end sill is mounted a ratchet *f'*. Loosely mounted on the shaft adjacent the ratchet-wheel is an operating-lever *f''*, which may be made as shown in Fig. 2, in which the lever is shown as provided at its end adjacent the ratchet-wheel with a bifurcated portion *f''*, between which bifurcated portions is provided a pawl *f'''*, engaging the ratchet-wheel. Mounted on the end sill adjacent the lower edge of its slotted portion is a ratchet-bar *f*, provided with ratchet-teeth *f''*. Loosely mounted on the shaft is a pawl *f''*, having a tooth *f''* engaging the teeth of the rack-bar. It will be readily understood that by operating the lever it will, through its pawl *f'''*, cause the shaft to turn, thus dragging the pawl *f''* over the rack-bar and holding the shaft in any position to which it may be adjusted.

On the inner side of the end sill and adjacent the lower edge of its slotted portion is mounted a rack-bar *m*, the teeth of which, *m'*, are formed by outwardly-projecting studs, as clearly shown in Figs. 3 and 4, these studs having spaces between them. Secured to the shaft is a gear-wheel *m''*, engaging the studs. This rack-bar and its gear-wheel form a simple and efficient guiding and retaining means for the door-operating device, and it will be noticed that by providing the spaces between the teeth or studs of the rack-bar no dirt or obstructions can remain thereon, so that the rack-bar will be entirely clear at all times. The intermediate sills, as shown in Fig. 6, are provided with a rack-bar *h*, similar to the rack-bar *m* at the end sill, the rack-bar *h* being provided with teeth or studs *h'*. At the intermediate sills the operating-shaft is provided with a gear-wheel *d''*, engaging the teeth of the rack-bar, and with rollers *d''*, engaging the lower face of the slotted portion of the sill. To hold the gear-wheel *d''* in position and to strengthen the shaft at this point, I provide an elongated collar *d'*, integral with the gear-wheel and extending for some distance along the shaft. Upon this collar the roller *c* is loosely mounted at the center sill, where, as shown in Fig. 7, the end of the operating-shaft is provided with a roller *k''*, corresponding to the roller *d''*. This roller is supported upon a track *k''*, forming a portion of a rack-bar *k*, similar to the rack-bars *m* and *h* above described. The rack-bar *k* is securely fastened to the center sill and is provided with the spaced teeth or projections *k'*. Along its upper edge the

rack-bar k is provided with the tracks k^2 . The shaft is also provided at this point with gear-wheels d^3 , having elongated collars d' , as above described.

5 In order to brace and strengthen the parts and also support the operating-shaft near its end, I connect the center sill and the side sills g by a channel brace-bar n , (shown in Figs. 4 and 5,) and the shaft at this point is
10 provided with a roller n' , traveling upon the upper flange of this channel-bar. In order to further strengthen the shaft, also, I provide it at this point with a collar n^2 , extending from the roller n' to the gear-wheel m^2 ,
15 which is provided also with an elongated collar m^3 .

It will be understood that there are two operating-shafts on each side of the car, extending from the end sills to the center sill,
20 as indicated in Fig. 7.

The doors may be constructed in any desired manner; but I have provided a door made as follows and shown in Figs. 8, 9, and 10: The door b is composed of a series of
25 narrow planks o , beveled at their ends, as shown in Fig. 9. The ends of this door are bound by a metallic binding-strip o' , extending over the top and bottom faces of the door and the ends thereof. On the bottom
30 face the binding extends inwardly for some distance. Adjacent the front edge of the door, on the lower face thereof, I provide an angle brace-strip o^2 , secured to the door and to the end binding-strips. The door is further braced by a center brace-strip o^3 , which
35 is secured to the door, as shown, this center strip passing beneath a downwardly-bent portion o^4 of the angle brace-strip o , as shown in Fig. 9. Along its inner edge on its dumping-
40 face the door is provided with a brace-plate o^5 , which extends beyond the edge of the door, as shown, and is downwardly turned, so as to pass beneath a metallic strip o^6 , secured to the center sill, as shown in Fig.
45 5. Metallic strips or loops o^7 are secured to the lower inner edge of the door, forming a portion of the hinge thereof, as shown in Fig. 10.

I claim—

1. A dump-car having the usual frame-
50 work, dumping-doors hinged to the center sill, a shaft mounted in the cross-sills beneath the doors, ways in the cross-sills in which the shaft is movable to open and close the doors, racks on the cross-sills provided with later-
55 ally-projecting teeth, there being openings between adjacent teeth, pinions on the shaft engaging the racks, a ratchet-bar on one of the cross-sills, a pawl on the shaft engaging the ratchet-bar, and means for operating the
60 shaft.

2. A dump-car having the usual longitudi-

dinal center sill, side sills and cross-sills, the center cross-sill being provided with inclined tracks on its opposite sides, the end sills and intermediate cross-sills being provided with
65 inclined slots, shafts mounted in the slots each having one end resting on one of the tracks on the center cross-sill, dumping-doors hinged to the longitudinal center sill supported by the shafts, and means for operating and
70 holding the shafts.

3. A rack-and-pinion mechanism for dump-car doors, comprising a rack having laterally-projecting teeth thereon, there being openings for adjacent teeth, substantially as de-
75 scribed.

4. A dump-car having the usual framework and having its bottom composed substantially of dumping-doors, a shaft beneath the doors for supporting and operating them,
80 inclined ways on the cross-sills upon which the shaft is movably supported, and auxiliary inclined tracks for the shaft extending from the center sill to the side sills of the car.

5. A dump-car having the usual frame-
85 work and having its bottom composed substantially of dumping-doors, a shaft beneath the doors for supporting and operating them, inclined ways on the cross-sills upon which
90 the shaft is movably supported, a channel-bar connecting the center and side sills between adjacent cross-sills and forming an inclined auxiliary track for the shaft.

6. A combined rack and track for car-door-supporting mechanism, consisting of a metallic
95 plate having an upper horizontal flange forming a track and having a vertical flange provided with a series of spaced laterally-projecting teeth.

7. A car-door-supporting mechanism, comprising a shaft beneath the doors and bodily
100 movable to operate the doors, rollers upon the shaft engaging the doors, racks mounted in the framework of the car, and pinions upon the shaft engaging the racks, said pinions being
105 provided with elongated collars, substantially as described.

8. In a dump-car, a door composed of a series of planks, channel brace-bars on the
110 ends thereof suitably secured thereto, a center transverse brace-bar secured to the under side thereof, a longitudinal angle brace-bar secured to the under side thereof adjacent its forward edge, a rear brace and cover-plate
115 secured to the upper face of the door along its inner edge and projecting over said edge, and a series of metallic loops secured to the under face of the door along its inner edge.

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Witnesses:

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