(No Model.) 2 Sheets—Sheet 1.

J. M. HARTMAN.

DUMPING CAR.

No. 323,417. Patented Aug. 4, 1885.

FIG. 1.

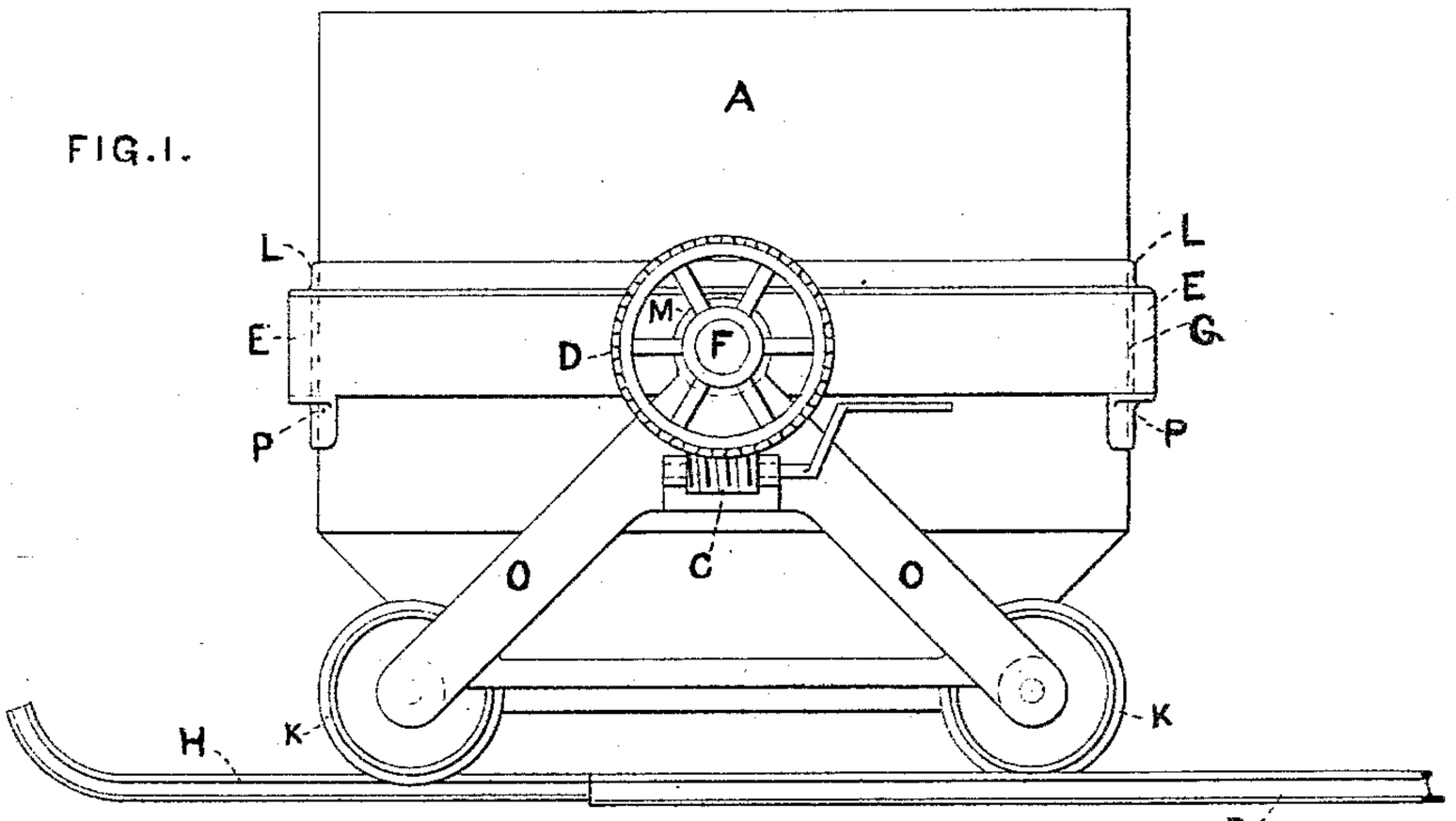
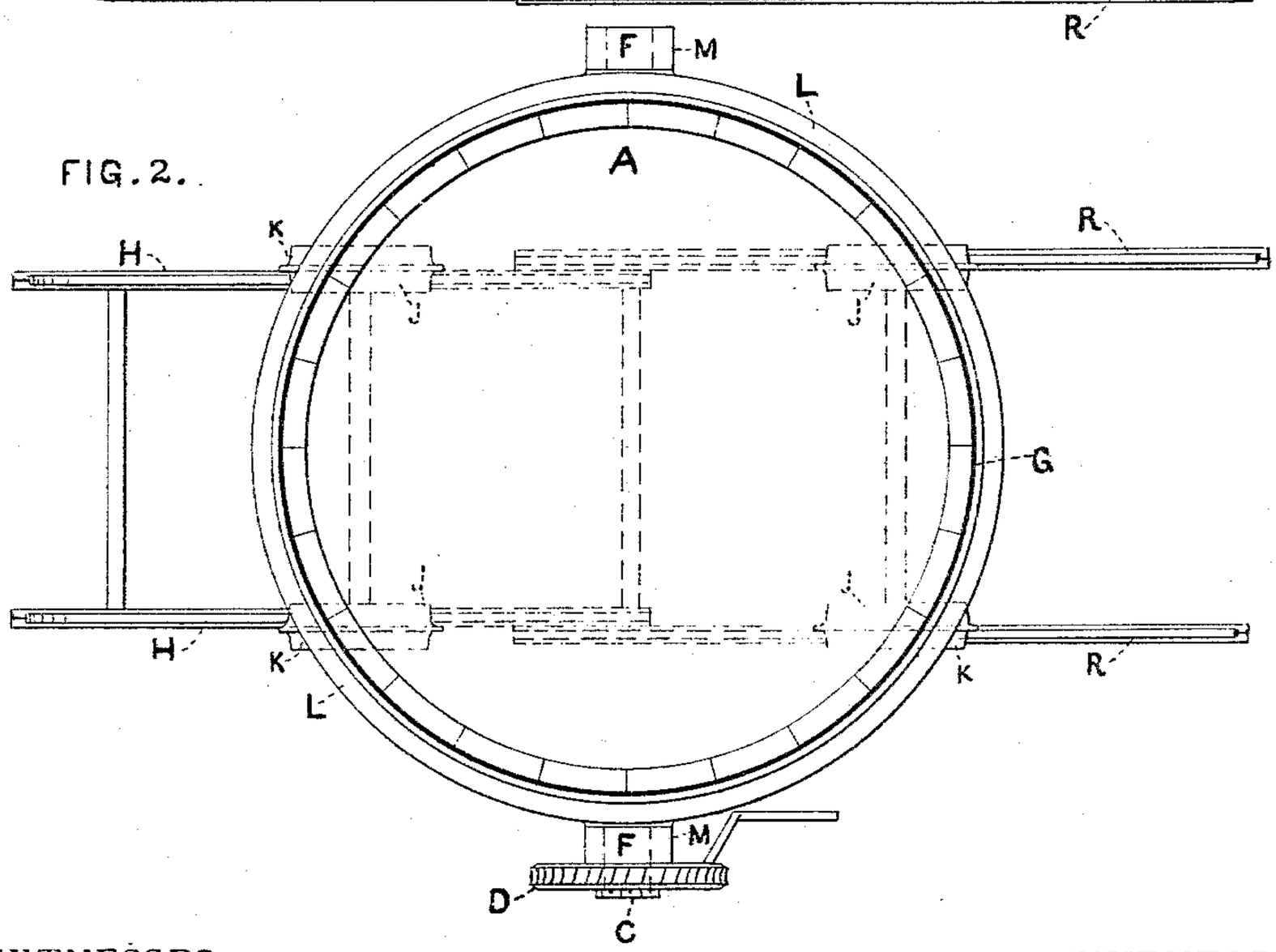


FIG. 2.



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(No Model.) 2 Sheets—Sheet 2.

J. M. HARTMAN.

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FIG. 3.

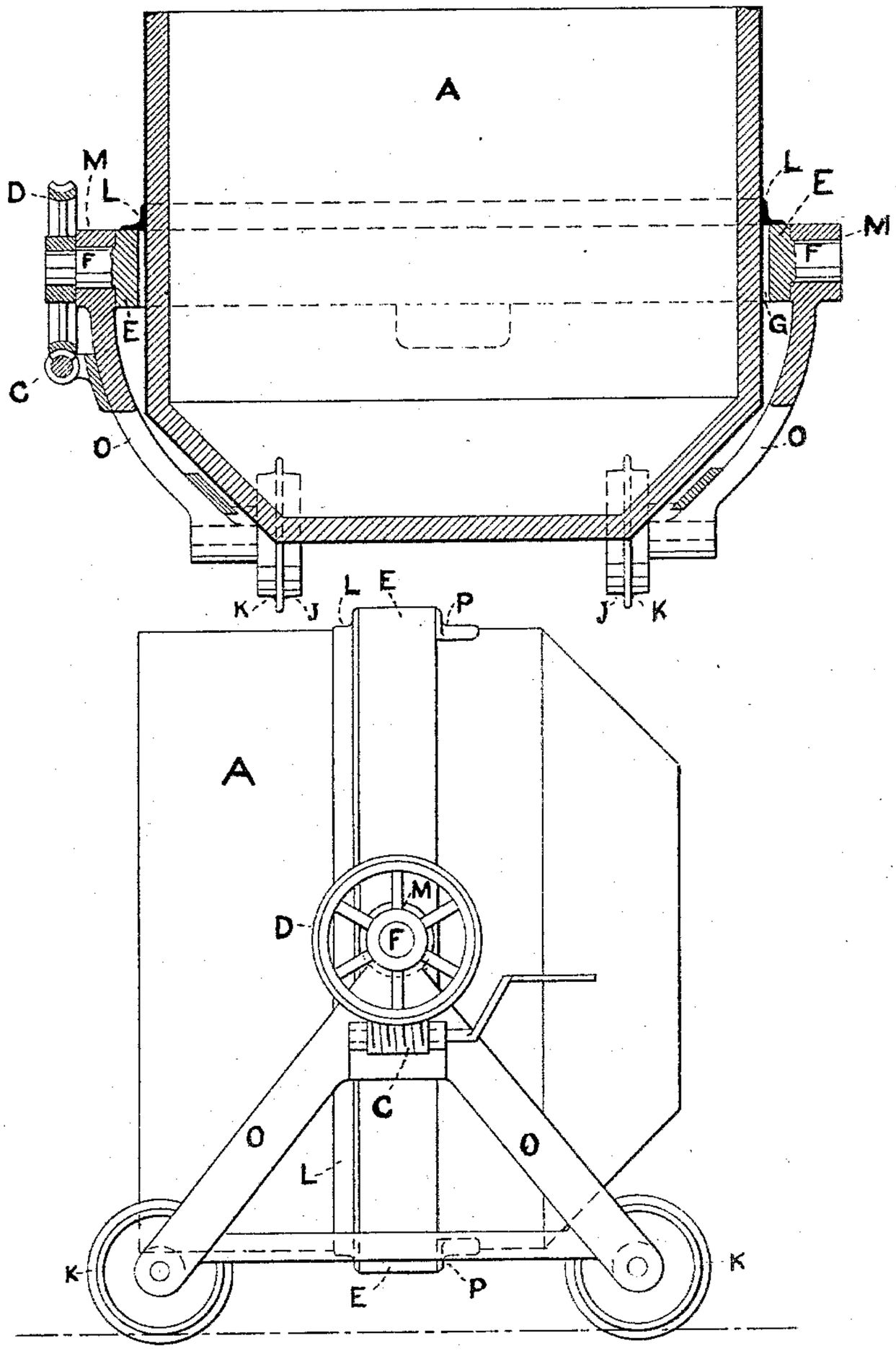

FIG. 4.

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JOHN M. HARTMAN, OF PHILADELPHIA, PENNSYLVANIA.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 323,417, dated August 4, 1885.

Application filed June 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. HARTMAN, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Devices for Transporting and Dumping the Cinder of Blast-Furnaces, &c.

The following is a specification of my improvements, reference being had to the accompanying drawings, wherein Figure 1 is a side elevation of the cinder car and track; Fig. 2, a top or plan view thereof; Fig. 3, a transverse central section through the car, and Fig. 4 a side elevation of the car in the position for dumping the cinder.

It has been customary heretofore to receive the liquid cinder flowing from the furnace in a tank-shaped car, and after running the car upon a track to the dumping-place to draw off the contents of the car through an orifice near the bottom and at one side thereof, so that the still liquid cinder is discharged alongside of the track. This method is objectionable for the following, among other, reasons: Emptying the car through a side outlet necessitates the formation of a special road-bed and track in advance of the point where the discharge is to take place, and soon fills up the dumping-space, so that the track must be removed bodily to one side, or a new track started. Furthermore, the drawing off of the contents from below leads to the formation of a crust or "skull" of hard cinder on the inside of the car, which is very difficult of removal.

The principal object of my invention is to permit the discharge of the cinder forward, or in the direction in which the track runs, and thus to form a constantly-advancing road-bed from the cinder itself, upon which the track can be extended without removal sidewise, and without requiring the transportation of special material for the road-bed. This system also allows the dumping of the cinder by tipping the car bodily instead of discharging through an orifice, and thus the formation of skull is avoided. I furthermore so construct and support the car-body that the weight of the cinder shall not cause it to sag and bind in its bearings.

In the accompanying drawings, A is the car-body or tank, constructed of metal and lined with refractory material. This car-body A is provided with a flange, L, preferably extending all around it, which rests upon a heavy ring of metal, E, having trunnions F, supported on bearings M, mounted upon the frame O of car-truck. The ring E is not in close contact with the car-body A, an open annular space, G, being left between them. The object of this arrangement is to permit the free expansion and contraction of the car-body without bursting or distorting the ring itself, and as the sagging or change of shape in the car-body does not affect the ring the trunnions are not liable to bind in their bearings.

The car-body A is tilted forward, in order to dump its contents, by means of the worm-wheel D, attached to one of the trunnions F, and the worm C, mounted on the frame O of the car-truck. The extreme tilted position of the car is shown in Fig. 4, and when turned in this manner the car-body is prevented from slipping out of the ring E by lugs P, secured to the body below the ring.

The car-truck is of the ordinary construction, except that the wheels are provided with a double tread, J K, as shown in Figs. 2 and 3, which enables them to run upon tracks of slightly different gage. The object of this construction is to facilitate the extension of the track as the road-bed advances. Thus the main track R is laid in the usual manner of full-length rails, and as, from the accumulation of dumped cinder in front of the car, it is necessary to extend the track a short distance at a time, the auxiliary rails, H H, which fit between the main rails R R, are pushed forward, their front ends resting upon the cinder last dumped, and their rear ends being keyed or bolted fast to the main track, or otherwise secured. The double tread of the car-wheels enables the car to advance upon the auxiliary rails beyond the main track, and thus the gradual extension of the track is accomplished without resorting to the use of short pieces of rail. When the auxiliary rails, H H, have been pushed forward to their full extent, whole rails are added to the main track R R, and the operation is repeated.

I am aware that the use of a pivoted car for transporting liquid cinder is not new, and I therefore do not claim the same, broadly; but in all such devices with which I am acquainted the axis of the pivots has been at right

angles to the axles of the truck-wheels or parallel to the direction of the track, and the object of such pivoting has not been to enable the contents of the car to be dumped, but to permit the cleaning of the interior. Furthermore, the other features of construction and operation in such old devices did not permit the dumping of the cinder forward, or in line with an advancing track, which latter object is the main purpose of my invention.

Having thus described my invention, I claim—

1. In a device for transporting and dumping cinder, the combination of a main track, an auxiliary track of different gage therefrom and capable of extension longitudinally beyond the same, a car-truck having double-tread wheels adapted to run upon both of said tracks, a car-body pivoted upon an axis, substantially at right angles to the line of track, and means for tilting said car-body upon its pivots, the whole operating substantially as set forth.

2. The combination of the car-truck having raised bearings M, substantially parallel to the axes of the truck-wheels, the ring E, having trunnions F, supported upon said bearings, and the car-body or tank A, of similar diameter of said ring and provided with an exterior flange, L, which projects from said ring, so as to support the body freely thereon, the whole operating substantially in the manner set forth.

JOHN M. HARTMAN.

Witnesses:
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THOS. M. SMITH.