

No. 682,343.

Patented Sept. 10, 1901.

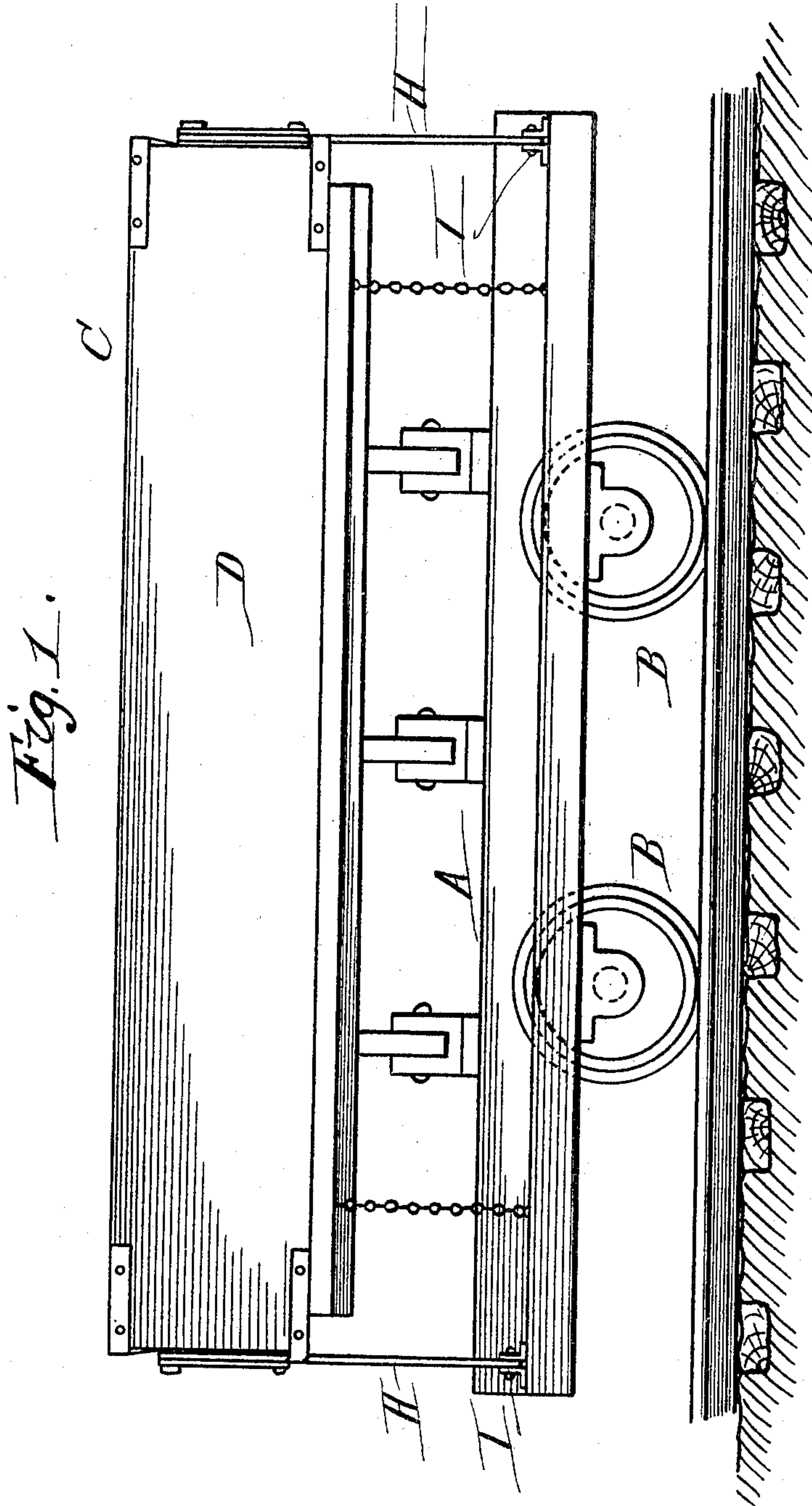
J. B. RHODES.

DUMP CAR.

(Application filed Apr. 22, 1901.)

(No Model.)

3 Sheets—Sheet 1.



*Witnesses:*  
*A. F. Demand.*  
*Ottob C. Freiberg*

*Inventor:*  
*Jay B. Rhodes.*  
*by Chas. G. Page Att'y*

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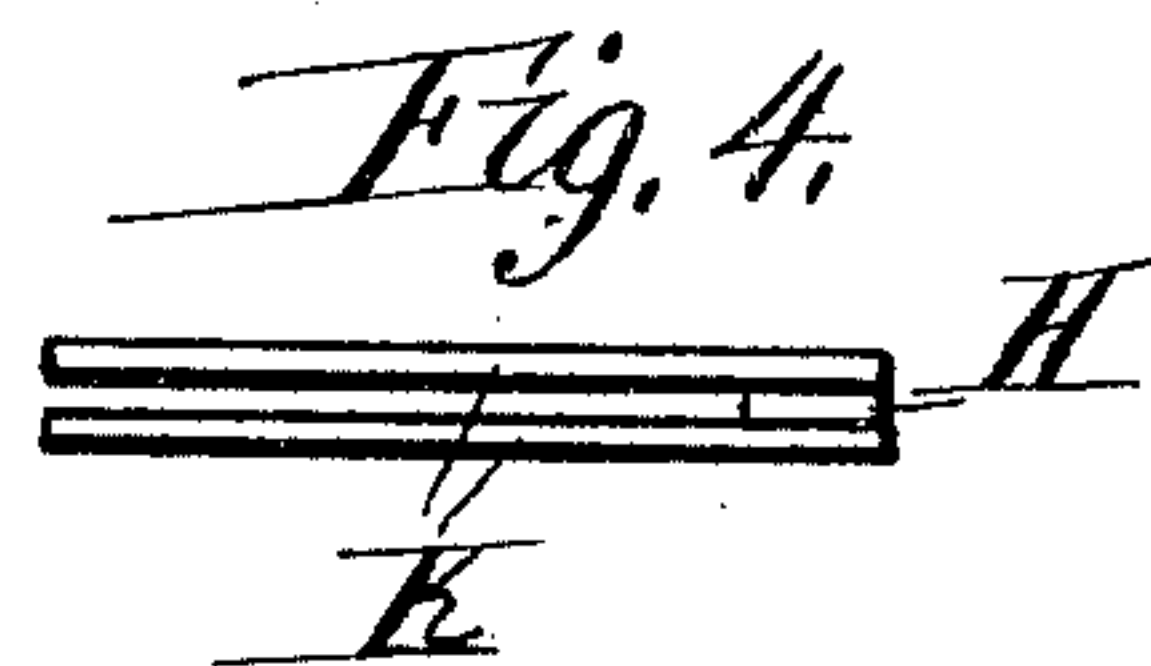
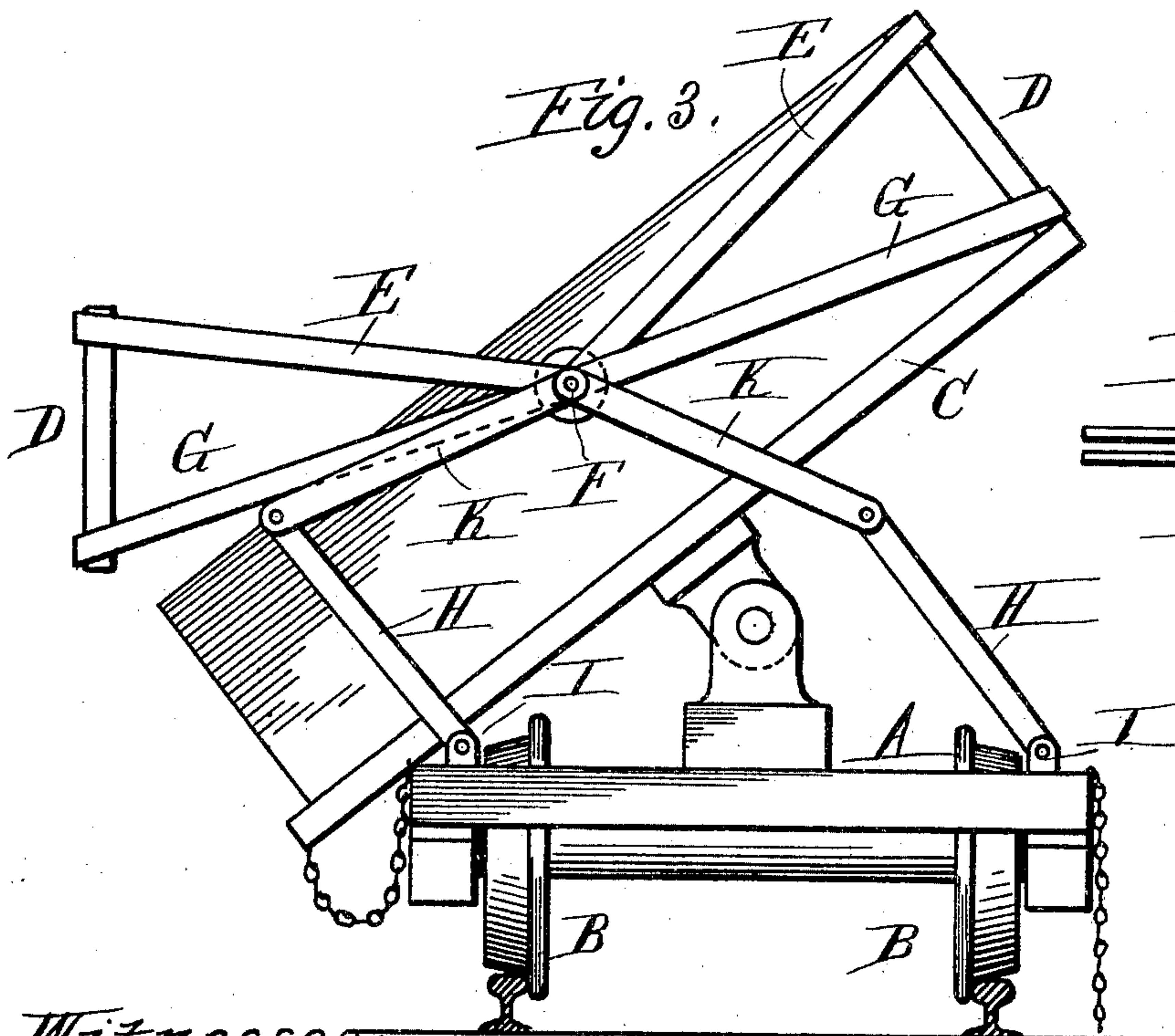
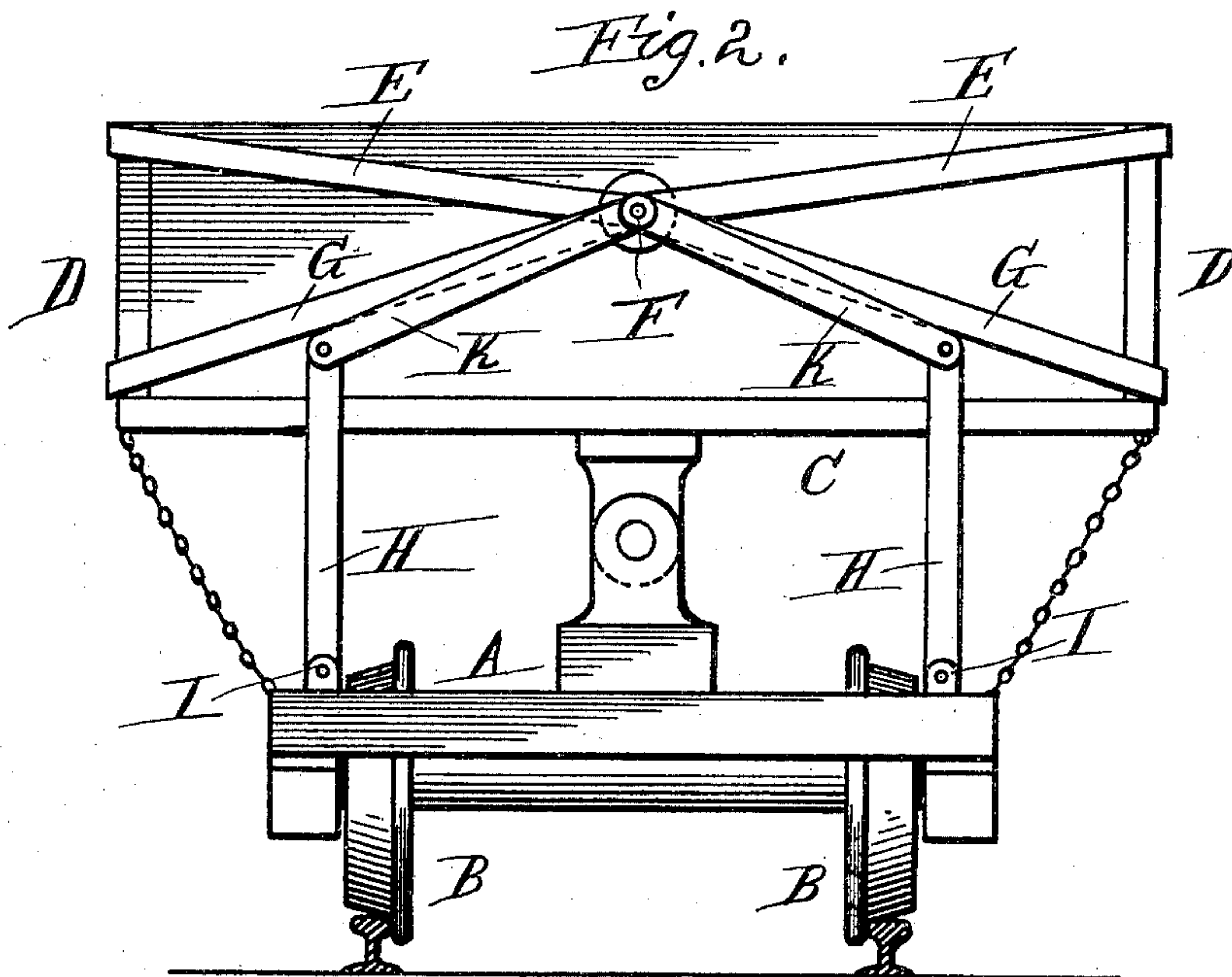
J. B. RHODES.

DUMP CAR.

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(No Model.)

3 Sheets—Sheet 2.



Witnesses:  
A. F. Leland  
Ottilie C. Freiberg

Inventor  
Jay B. Rhodes.  
by Chas. E. Page Atty.

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**Patented Sept. 10, 1901.**

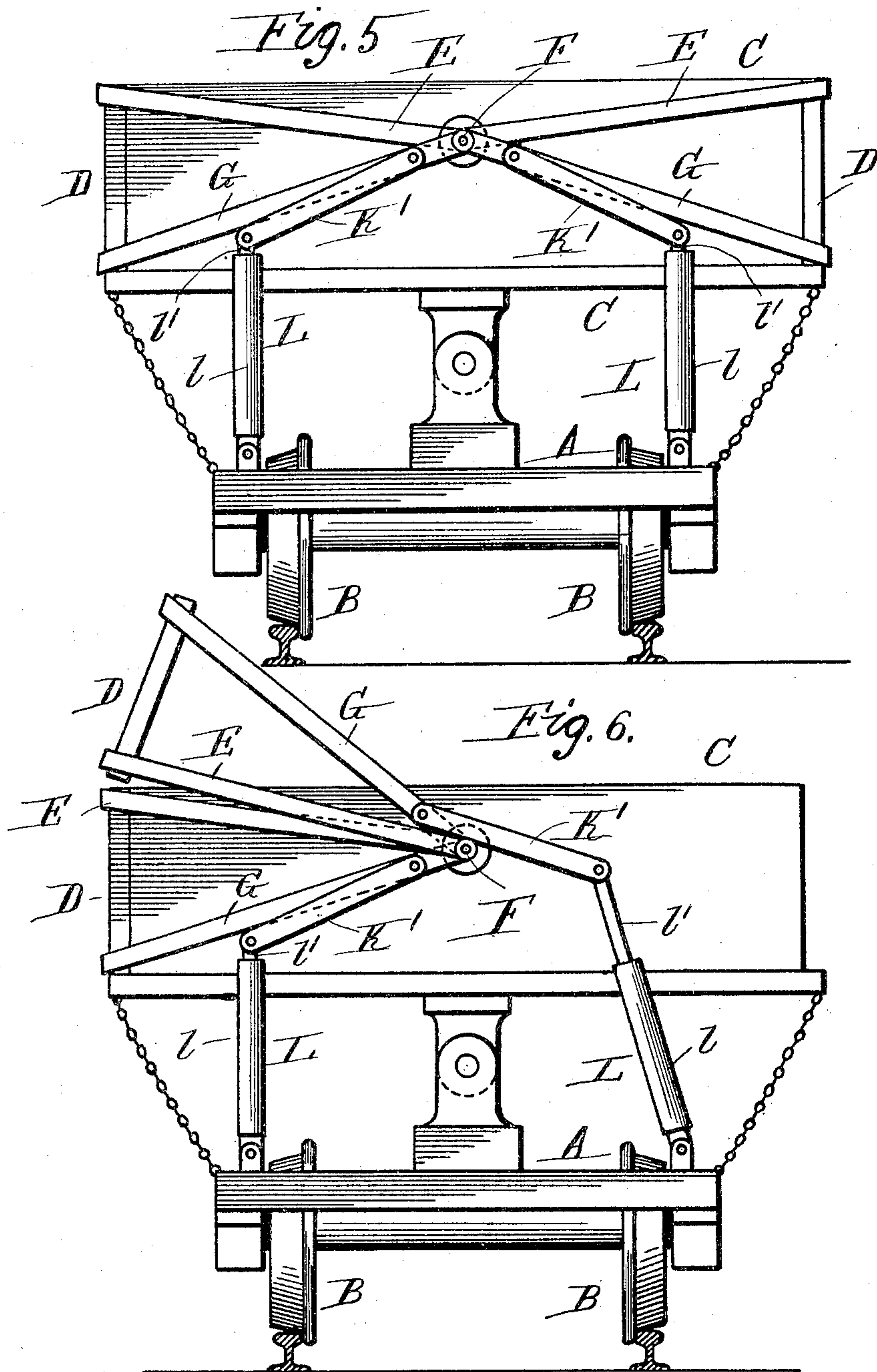
**J. B. RHODES.**

**DUMP CAR.**

(Application filed Apr. 22, 1901.)

(No Model.)

**3 Sheets—Sheet 3.**



Witnesses:  
A. F. Lund  
Otto C. Freiberg

Inventor:  
Jay B. Rhodes.  
by Chas. E. Page Att'y.



# UNITED STATES PATENT OFFICE.

JAY B. RHODES, OF HARVEY, ILLINOIS, ASSIGNOR TO FREDERICK C. AUSTIN, OF CHICAGO, ILLINOIS.

## DUMP-CAR.

SPECIFICATION forming part of Letters Patent No. 682,343, dated September 10, 1901.

Application filed April 22, 1901. Serial No. 56,932. (No model.)

*To all whom it may concern:*

Be it known that I, JAY B. RHODES, a citizen of the United States, residing at Harvey, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Dump-Cars, of which the following is a specification.

My invention relates to a construction of dump-car in which arrangement is made to uphold a gate belonging to a side of the tilting car-body when such side of the car-body is tilted downward for the purpose of dumping the load. In accordance with my invention the movable gate is thus upheld during the operation of dumping by a vibratory prop, which is attached to the movable gate structure, the said prop being, however, held in readiness to receive the weight of the gate and act as a prop therefor when the car-body is tilted. My invention also comprises other matters and details hereinafter set forth.

Objects of my invention are to provide a simple and effective construction; to provide the vibratory prop with a constant bearing on the car-truck, whereby shocks, breakage, and disarrangement of parts are avoided; to obviate all necessity for raising and lowering the lower end of the prop relatively to the car-body; to permit the gate to be readily swung up and back without detaching the bearing connection between the prop and the car-truck; to insure a constant bearing connection between the lower end of the vibratory prop and the car-truck, and thereby avoid any interference with such bearing by stones or dirt or the like which may lodge upon the car-truck; to automatically adjust the position of the prop with reference to its function as a gate-support without lifting its lower end from the car-truck, and to provide certain other matters of construction constituting matters of further improvement.

In the accompanying drawings, Figure 1 represents in side elevation a dump-car embodying principles of my invention, the props being each formed by a rod or bar. Fig. 2 represents the dump-car of Fig. 1 in end elevation. Fig. 3 is a like view with the car-body tilted to one side. Fig. 4 is a top plan of a construction of double link. Fig. 5 is an end view of the dump-car with props

which are adjustable in length. Fig. 6 is a like view with one of the gates swung back.

A indicates the car-truck, B the usual truck-wheels, and C the car-body, which is provided with hinged gates D and connected with and supported upon the car-truck so as to be capable of lateral tilt for the purpose of dumping the load.

The gates D normally constitute opposite sides of a receptacle afforded by the car-body in conjunction with such gates or side pieces. These gates are hinged to the ends of the car-body by arms E, which are secured to the gates and pivoted to the ends of the car-body, as at F, so as to swing in vertical planes. The movable gates can also be connected with the pivots at F by brace rods or bars G, attached to the lower portions of the gates, and, if desired, these braces can be rigid with the arms E.

When the car-body is tilted to either side for the purpose of dumping the load, the gate for the elevated side of the car-body will remain in its normally-closed position relatively to the car-body, as in Fig. 3, while the opposite gate will be upheld by props, which are hinged or pivotally secured at their lower ends upon the car-truck. In the first three figures of the drawings the props thus provided for both gates are formed in an exceedingly simple way and to such an end are shown as consisting of rods or bars H, hinged or pivoted at their lower ends to bearings I on the car-truck and having their upper ends tied to the gate-pivots at F by links K. These links K may consist of rods or bars and can be either single or double, the double formation, comprising a pair of parallel bars rigidly secured together to form a link, as illustrated by Fig. 4, being preferable. Where the links K are thus made double, the two bars of each link will embrace and be pivoted to the upper end of one of the vibratory props with such arrangement that when the car-body is horizontal and the gates closed the vibratory props H will assume an upright position, with their upper ends bearing against or in juxtaposition to the under sides of the gate-braces G, as in Fig. 2, it being observed that the length of the links K is such as to bring the props into the upright position illustrated



and to maintain them in such position in readiness to serve as gate-props. When, however, the car-body is tilted to either side, as in Fig. 3, the gate belonging to the depressed side of the car-body will be upheld by two of these props H, respectively, at opposite ends of the truck, since in such case while the two props referred to will be swung outwardly to an extent proportional to the lateral movement of an axis passing through pivots F the props will still be maintained in a substantially upright condition, and thereby engage the braces G as abutments, which will uphold the braces, with the gates attached thereto, while the downwardly-tilting side of the car-body leaves and clears the gate and opens at one side of the truck, so as to discharge the load. With such arrangement the lower ends of the props H can be permanently held down upon the car-body, whereby uniformity of position and readiness for performing their duty as props for upholding the gate will be insured and danger of displacement during the rough usage to which dump-cars are subjected will be avoided. When the car-body is thus tilted to one side, one pair of props will uphold one of the gates, while the opposite pair of props will be swung inwardly by their respective links K to an extent proportional to the lateral shift of an axis passing through pivots F, as illustrated in Fig. 3. On the other hand, when it is desired to raise and swing back either gate to facilitate loading, the gate, with its attached arms and braces, can be thus raised and swung back, and in so doing the braces will simply swing upwardly and away from the upper ends of the props. Where the links K are hung upon the gate pintles or pivots F, the act of raising and swinging back either gate will not affect or move the props and links so long as the car-body remains in a horizontal position, and with such arrangement the props can be of a fixed length and be permanently held at fixed points upon the car-truck.

In Figs. 5 and 6 the links K' are hinged or pivoted to the braces G and also hinged or pivoted to swinging props, which serve to uphold the gates in dumping. With such arrangement the props L can be made extensible, so as to permit them to adjust themselves in length with reference to the upward and back swing of the gates, as in Fig. 6, in which one of the gates is shown thus swung back. The props in this case may therefore each consist of two members l and l', having a suitable sliding connection and arranged with one member hinged or pivoted to a bearing on the car-truck and the other member hinged or pivoted to a link. As shown, the props are composed of telescoping members. With the construction thus shown in Figs. 5 and 6 the car-body can be tilted to either side and the gate at the depressed side of the same will be upheld by a pair of end props, substantially as hereinafter described in connection with preceding figures. The props

H in said preceding figures could obviously be made like the props K' in Figs. 5 and 6, although such is not necessary, and, if desired, the links K (illustrated in connection with said props H) can be pivoted or hinged to the braces G, as or similar to the arrangement of links K'.

Broadly considered, the car-truck is provided with an upwardly-extending prop, which is pivotally or hingedly secured at its lower end to the car-truck and automatically maintained by a link or tie rod in readiness to engage the gate or an attachment thereto when the car-body is tilted, and thereby uphold the gate, in contradistinction to an arrangement proposed in Letters Patent of the United States No. 612,263, dated October 11, 1898, and comprising a toggle-lever composed of two bars or members, one of which said members is pivotally secured to the gate-arm, while the other toggle bar or member is pivotally secured to the truck; the arrangement being such that the toggle member which at times serves to uphold the gate is directly attached to the gate-arm and is drawn upwardly with the gate whether the gate be swung upwardly independent of the car-body or raised with the car-body when the same is tilted to one side.

What I claim as my invention is—

1. In a dump-car, a tilting body provided with a swinging gate; a vibratory prop hinged or pivoted to the car-truck and arranged to receive the weight of and uphold the gate when the car-body is tilted in one direction; and means for automatically controlling the position of the prop; the gate structure being separated from the prop when the gate is raised either independently of the car-body or with the car-body when such car-body is tilted in a direction to raise the gate.

2. In a dump-car, a tilting body provided with a swinging gate; a vibratory prop hinged or pivoted to the car-truck and arranged to receive the weight of and uphold the gate when the car-body is tilted in one direction; a link suitably hung and arranged to control the position of said prop, the gate structure being separated from the prop when the gate is raised either independently of the car-body or with the car-body when such car-body is tilted in a direction to raise the gate.

3. In a dump-car, a tilting body provided with a swinging gate; a vibratory prop hinged or pivoted to the car-truck and arranged to receive the weight of and uphold the gate when the car-body is tilted in one direction, a pivoted link controlling the position of said prop, the gate structure being separated from the prop when the gate is raised either independently of the car-body or with the car-body when such car-body is tilted in a direction to raise the gate.

4. In a dump-car, a tilting body provided with a swinging gate; a vibratory and longitudinally extensible or adjustable prop hinged or pivoted to the car-truck and ar-



ranged to receive the weight of and uphold the gate when the car-body is tilted in one direction, and means for controlling the position of the prop, the gate structure being separated from the prop when the gate is raised either independently of the car-body or with the car-body when such car-body is tilted in a direction to raise the gate.

5. In a dump-car, a tilting body provided with a swinging gate, a vibratory prop provided at its lower end with a bearing and having its upper end arranged to receive the weight of and uphold the gate when the car-body is tilted in one direction; and means for controlling the position of the prop, the gate structure being separated from the prop when the gate is raised either independently of the car-body or with the car-body when such car-body is tilted in a direction to raise the gate.

6. In a dump-car, a tilting body provided with a swinging gate; a vibratory prop having its lower end hinged or pivoted to the car-truck, a swinging link having one end pivoted to the upper end of said prop and its other end suitably connected with said tilting body, the prop thus arranged receiving the weight of and upholding the gate when the car-body is tilted in one direction, the said link con-

trolling the position of the prop, and the gate structure being separated from the prop when the gate is raised either independently of the car-body or with the car-body when the same is pivoted in a direction to raise the gate.

7. A dump-car comprising a truck, a tilting body mounted thereon, a swinging side gate for said body, jointed or articulated connections between said truck and body, the lower members of said connections being arranged to receive the weight of and uphold the gate when the car-body is tilted in one direction, and the gate structure being separated from said lower members when the gate is raised either independently of the car-body or with the car-body when such car-body is tilted in a direction to raise the gate.

8. The combination of the truck, the tilting body, and the articulated connections providing props for the swinging gates of said body, each gate structure being free to rise from the upper ends of the props, substantially as described.

JAY B. RHODES.

Witnesses:

CHARLES G. PAGE,

OTILIE C. FREIBERG.