

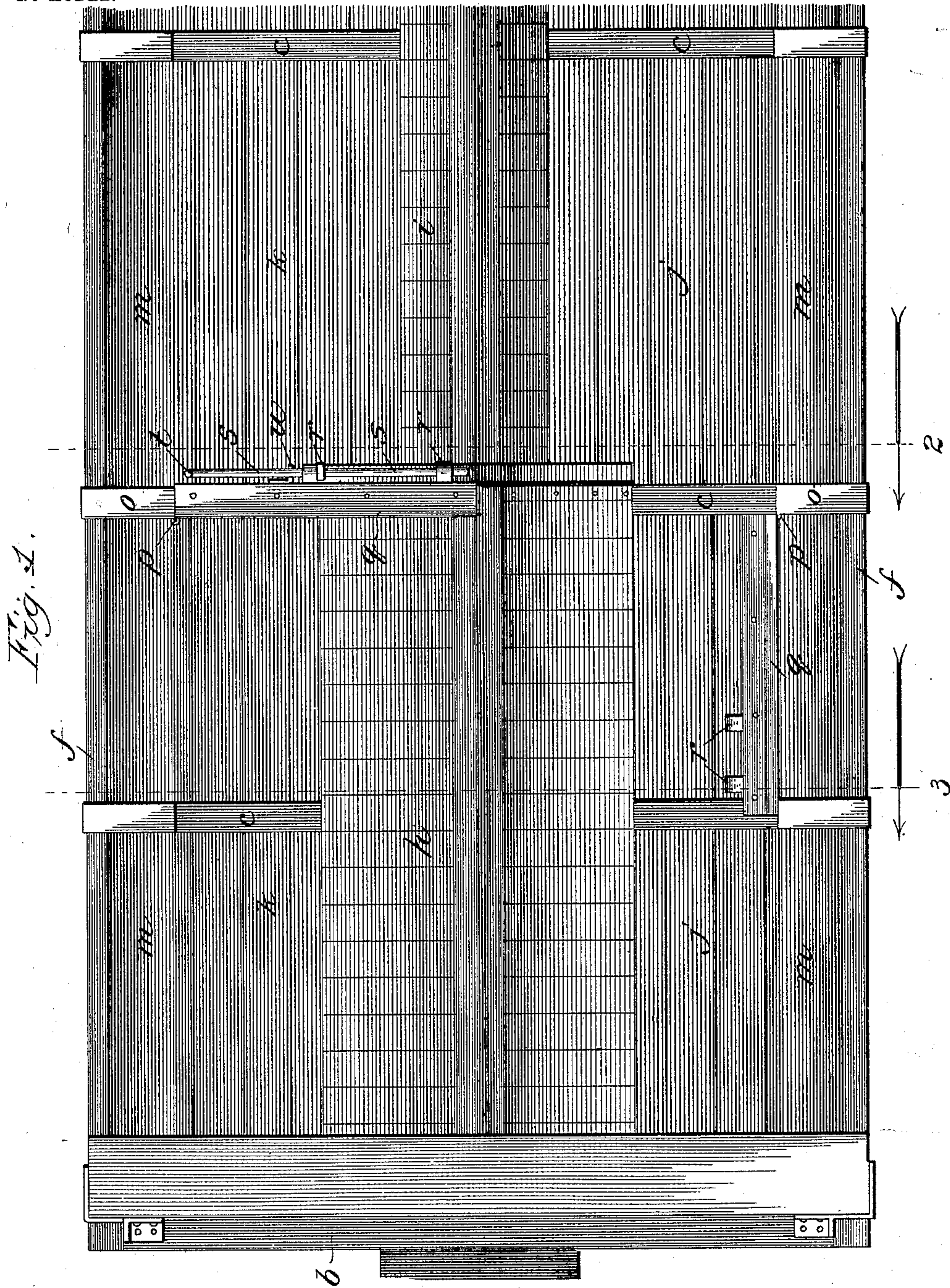
No. 719,796.

PATENTED FEB. 3, 1903.

H. S. HART.  
CONVERTIBLE DUMP CAR.  
APPLICATION FILED NOV. 14, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:  
Edw. Gaylord,  
John Enders Jr.

Inventor:  
Harry Stillson Hart,  
By Thomas F. Sheridan,  
Att'y



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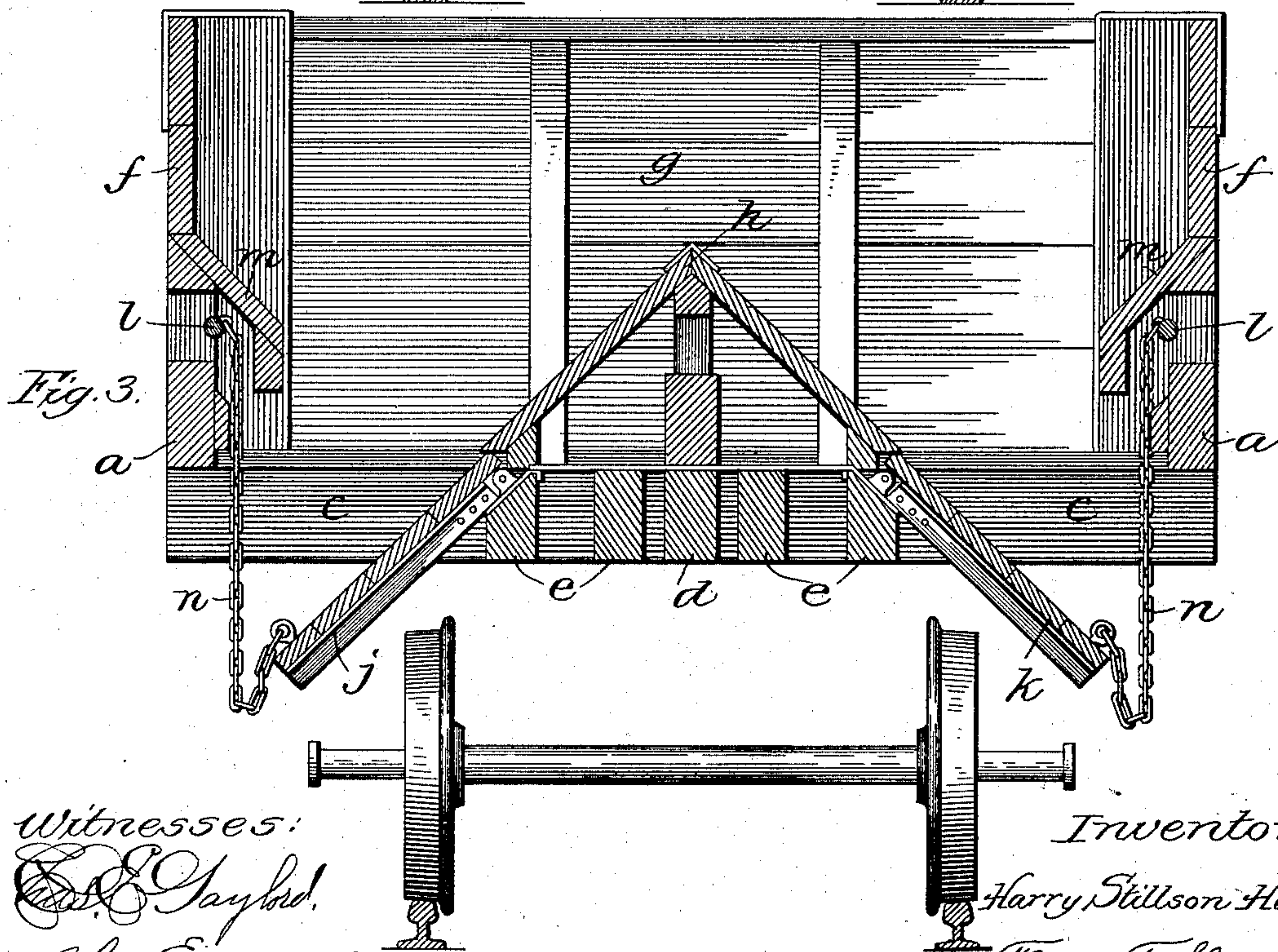
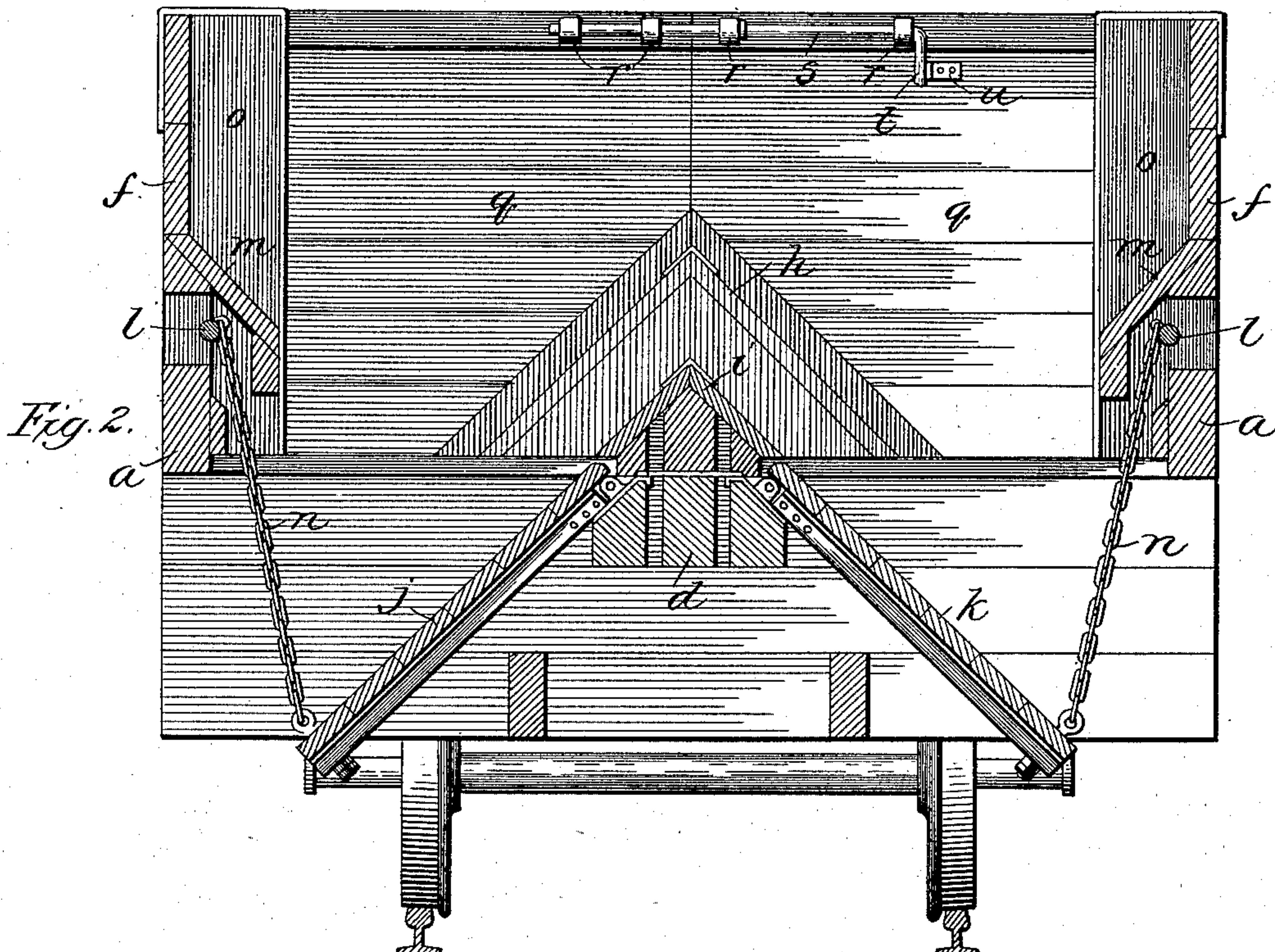
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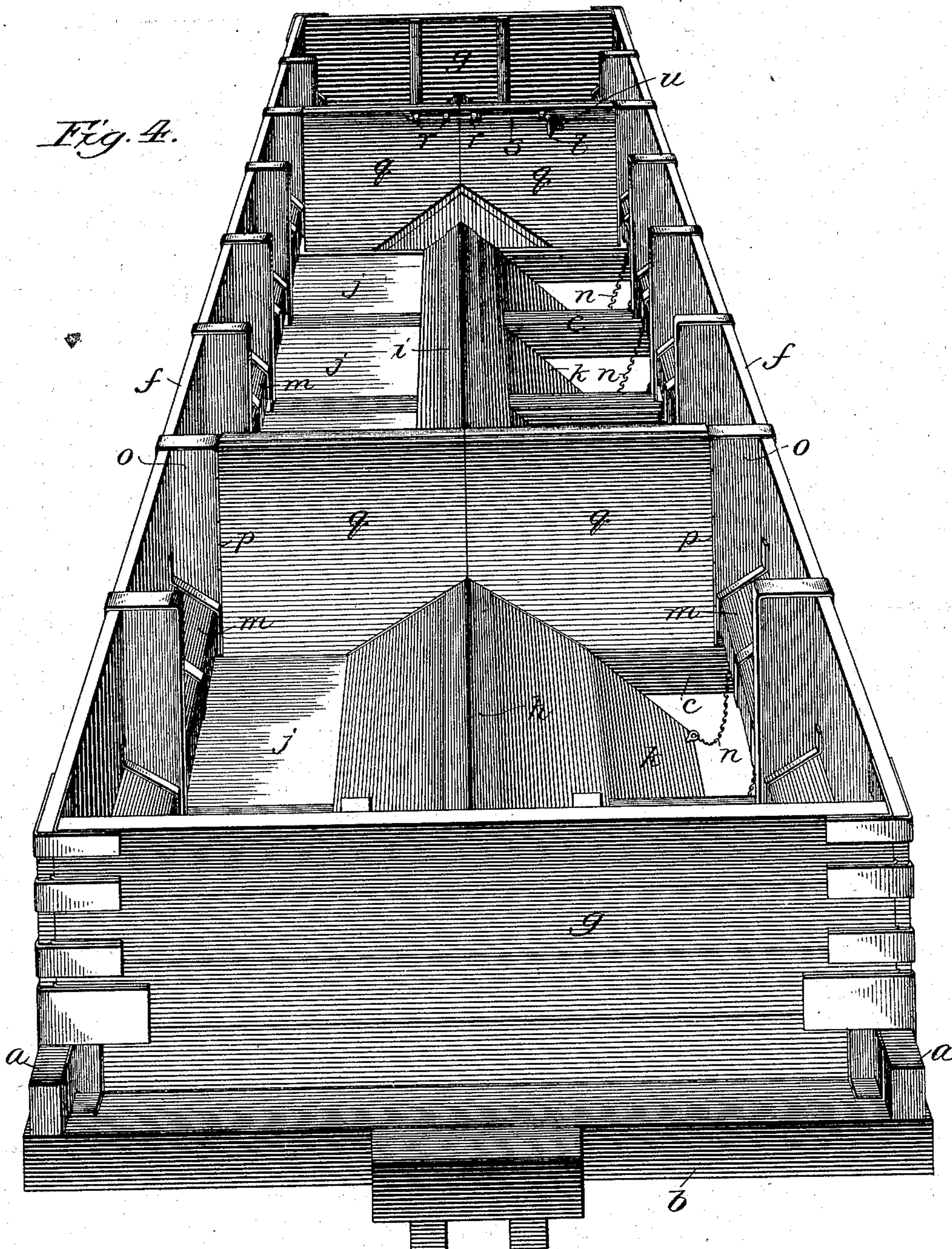
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# UNITED STATES PATENT OFFICE.

HARRY STILLSON HART, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL COAL DUMP CAR COMPANY, OF RAPID CITY, SOUTH DAKOTA, A CORPORATION OF SOUTH DAKOTA.

## CONVERTIBLE DUMP-CAR.

SPECIFICATION forming part of Letters Patent No. 719,796, dated February 3, 1903.

Application filed November 14, 1902. Serial No. 131,424. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY STILLSON HART, 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 Convertible Dump-Cars, of which the following is a specification.

This invention relates to that class of dump-cars which may be used for carrying different kinds of freight at different seasons of the year or to meet different circumstances and conditions of the railroad itself, and particularly to the combination, construction, and arrangement of the different mechanisms which go to form a convertible car, as will more fully hereinafter appear.

The principal object of this invention is to provide a simple, economical, and efficient convertible dump-car that may be used to carry different kinds of freight—i. e., coal or similar bulky freight when the parts are arranged in one position and heavy ores or similar material when the parts are arranged in a second position.

Further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists, principally, in a convertible dump-car in which there are combined a supporting-framework provided with side and end boards and a dumping-bottom portion extending the entire length and between the end boards of the car and movable bulkheads secured to the frame portion to divide the car, as desired, into small dumping-compartments at each end and over the car-trucks when in their closed position and to carry heavy freight therein, and when moved to open position to form one dumping-compartment for the carrying of bulky freight.

The invention consists, further, in a convertible dump-car of the class described in which there are combined a supporting-framework provided with side and end boards extending upwardly therefrom, a dumping bottom portion extending the entire length and between the end boards of the car, and foldable bulkheads pivotally secured to the sides of the car, so as to be moved into a closed

position and provide small end dumping-compartments for the carrying of heavy freight directly over the car-trucks and to be swung back into a second position against the sides of the car to provide a single dumping-compartment for the carrying of bulky freight.

The invention consists, further and finally, in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of one end of a car constructed in accordance with these improvements looking at it from above; Fig. 2, a cross-sectional elevation taken on line 2 of Fig. 1 looking in the direction of the arrow; Fig. 3, a cross-sectional elevation taken on line 3 of Fig. 1 looking in the direction of the arrow and showing the dumping-doors in closed position; and Fig. 4, a perspective view of the car, showing the bulkheads in closed position and the bottom dumping-doors on one side of the car open and the other bottom dumping-doors on the other side closed, looking at the same above and directly in front of the car.

In the art to which this invention relates it is well known that the principal railroads of the country have to provide a large number of cars to meet the conditions necessary for the transportation of different kinds of freight, to provide one kind of cars for the carrying of one kind of freight, another kind of cars for another kind of freight, and so on. It is well known that dumping-cars adapted for the carrying of relatively light but bulky freight, such as coal and the like, are not usually adapted for the carrying of heavy freight, such as heavy metallic ores, for the reason that the shipper is apt to load the freight at any portion thereof, and while the car will carry light bulky freight and not in any way injure or strain the parts thereof, heavy freight, such as ore, being disposed entirely over or at the center of the car is apt to cause it to flex or sag considerably more than is safe, thereby rupturing or breaking the parts and destroying the car.

The principal object, therefore, of this invention is to provide a car of such construction



tion and arrangement that it may be used at certain seasons and under certain conditions for the carrying of light bulky freight, such as coal and the like, without any danger to the car and also provide means by which the car may be converted into another type for the carrying of heavy freight by the disposition thereof in certain portions of the car where the structure is arranged to withstand the heaviest strains and stress, all of which will more fully hereinafter appear.

In illustrating and describing a car constructed in accordance with these improvements I have only illustrated and described that which I consider to be new taken in connection with so much that is old as will properly disclose the invention to others and enable those skilled in the art to practice the same, leaving out of consideration other and well-known elements, which, if set forth here, would only tend to confusion, prolixity, and ambiguity.

In constructing a car in accordance with these improvements I provide a supporting-framework formed of side sills *a*, end sills *b*, cross-sills *c*, center and intermediate sills *d* and *e*, to which are secured and mounted side boards *f* and end boards *g*. To provide a bottom for the car which will carry almost any desired kind of freight, such as coal or similar relatively light bulky freight, and permit the discharge of the same by means of such bottom and in an automatic manner to the outside of the usual car-trucks, I provide a bottom portion formed of three central apex or A-shaped sections, which occupy what I prefer to term "high" and "low" levels—that is, the apex *h* at each end of the car is arranged directly over the usual car-trucks and at high levels, while the apex *i* is arranged between the trucks and at a lower level; but all of such apexes are arranged substantially in line with each other and with the longitudinal center of the car.

Pivotally secured to the framework of the car at or near the floor-level, so as to form practical continuations of the A-shaped apex portions, is a plurality of dumping-doors *j* and *k*, which are pivoted so that their free ends extend outwardly toward the sides of the car and when dropped into the position shown in Figs. 2 and 3 form substantial continuations of the central apex portion and a part of the inclined dumping portions. By this arrangement it will be seen that material may be discharged the entire length of the car to a point outside of the usual supporting-wheels. These doors can be folded or swung upwardly into substantially horizontal planes and form a flat bottom for the car, thereby permitting the transportation of the desired kind of bulky freight. To open and close these dumping-doors, rotatable shafts *l* are provided, one arranged at each side of the car and supported in suitable bearings just inside the side boards thereof in hous-

ings *m* and provided with chains *n*, which secure them to the free ends of the doors, so that as the shafts are rotated in one direction the chains are wound around the same and the doors raised thereby, and when the shafts are rotated in an opposite direction the doors are permitted to drop into open position. The housing protects the chains and shafts from the injurious wearing action of the freight during transportation.

While, as above described, the car may be used for the transportation of bulky freight, such as coal, when the parts are arranged to form one compartment, yet it is desirable that under certain conditions and during certain seasons when the cars cannot be used for such purposes they may be used for other purposes, and particularly that means be provided by which they can be used for the transportation of heavy freight, such as metallic ores, &c. In arranging for this purpose it is necessary that means be provided that will assist in confining the heavy freight to those portions of the truck directly above the car-trucks, so as to minimize the development of injurious stress and strain on the rest of the car during its ordinary usage. In order to provide such means, a plurality of side posts *o* is provided, which are secured to the underframing of the car and also act to assist in holding the side boards of the car in position. Pivotally secured to two sets of these side posts at *p* are two sets of swinging bulkheads *q*, so arranged that when they are swung to their closed position they form a bulkhead clear across the car at a point just inside the usual supporting car-trucks, and at the inner ends of the higher level central A-shaped portions acting to form three compartments—two relatively smaller at or near each end of the car, just above the trucks, for the carrying of heavy freight, and one larger one at the center of the car and between the car-trucks, which ordinarily should not be used for the carrying of any freight when the smaller ones are in use. To hold these bulkheads in their closed position, so as to form small compartments for the carrying of heavy freight, as above described, each of such swinging bulkheads is provided with perforated lugs or straps *r*, in which a sliding bolt *s* is mounted, so that it may be moved forward and passed through all such perforated lugs or straps, with its handle portion *t* turned downwardly in locking engagement with a bracket *u*, which prevents any backward or unlocking movement until such handle is again moved upwardly.

When it is desired to use the car for carrying bulky freights, these locking-bolts are turned upwardly and outwardly and slid backwardly, so as to be in engagement with one door, particularly as shown in connection with Fig. 1, which permits the bulkheads to be swung outwardly and backwardly



against the side posts of the car, as shown also to the right of Fig. 1. A latch may be provided to hold these bulkheads back against the side posts of the car; but ordinarily the freight in the car will so hold them.

I claim—

1. In a convertible dump-car of the class described, the combination of a supporting-framework provided with side and end boards and a dumping bottom portion extending the entire length and between the end boards of the car, and movable bulkheads secured to the frame portion to divide the car into small dumping-compartments at each end and over the usual car-trucks when in their closed position and when moved into open position to form one large dumping-compartment for the carrying of bulky freight, substantially as described.

2. In a convertible dump-car of the class described, the combination of a supporting-framework provided with side and end boards extending upwardly therefrom, a dumping bottom portion extending the entire length and between the end boards of the car, and foldable bulkheads pivotally secured to the sides of the car so as to be moved into a closed position and provide small end dumping-compartments for the carrying of heavy freight directly over the usual car-trucks and to be moved back into a second or open position against the side boards of the car to provide a single large dumping-compartment for the carrying of bulky freight, substantially as described.

3. In a convertible dumping-car of the class described, the combination of a supporting-framework provided with upwardly-extending side and end boards and dumping bottom portions extending the entire length and between the end boards of the car, swinging bulkheads pivotally secured to the sides of the car and adapted to be swung into closed position so as to form small end compartments for the carrying of heavy freight directly over the usual car-trucks, and means for locking the bulkheads in their closed position, substantially as described.

4. In a convertible dump-car of the class described, the combination of a supporting-framework provided with side and end boards extending upwardly therefrom and a dumping-bottom formed of A-shaped center portions arranged at or near the longitudinal center of the car and extending substantially the entire length thereof between the end boards and having swinging dumping-doors hinged thereto with their free ends in contact with the side portions of the car, and swinging bulkheads pivotally secured to the side frames of the car at or near each end substantially at equal distances from a transverse central line so as to provide, when in closed position, small compartments directly over the car-trucks for the carrying of heavy freight and when swung back against the

side boards of the car a single dumping-compartment for the carrying of bulky freight, substantially as described.

5. In a convertible dumping-car of the class described, the combination of a supporting-framework provided with side and end boards extending upwardly therefrom, a dumping bottom portion or portions extending substantially the entire length of the car between the end boards and formed of a central A-shaped portion having hinged doors, the free ends of which extend outwardly therefrom in contact with the side frames of the car, movable bulkheads in connection therewith and arranged when in their closed position to divide the car into two small end compartments for the carrying of heavy freight directly over the car-trucks and a single dumping-compartment for the carrying of bulky freight when in their open position, and means for locking and holding the bulkheads in their closed position, substantially as described.

6. In a convertible dump-car of the class described, the combination of a supporting-framework provided with upwardly-extending side and end boards and dumping bottom portions arranged substantially the entire length of the car between the end boards formed of an A-shaped central portion longitudinally and centrally disposed and divided into three sections arranged in different planes, the end sections arranged in a higher plane than the central portion, swinging dumping-doors pivotally secured to such A-shaped central portions with their free ends extending outwardly therefrom, means for raising and lowering such dumping bottom portions into and out of position so as to hold or dump the freight to each side of the track, movable bulkheads arranged when in closed position to divide the space between the side and end boards into two small compartments—one at each end—to carry heavy freight and when moved into open position to form a single large dumping-compartment for the carrying of light bulky freight, and means for locking and holding such bulkheads in closed position, substantially as described.

7. In a convertible dump-car of the class described, the combination of a supporting-framework provided with upwardly-extending side and end boards and dumping bottom portions arranged substantially the entire length of the car and between the end boards formed of an A-shaped central portion longitudinally and centrally disposed and divided into three sections arranged in different planes, the end sections being in a higher plane than the central portion, swinging dumping-doors pivotally secured to such A-shaped central portions with their free ends extending outwardly therefrom, means for raising and lowering such dumping bottom portions into and out of position so as to carry or dump the freight to each side of the tracks, swinging bulkheads pivotally secured to the



sides of the car so as to be swung into closed position and form small compartments over the higher A-shaped portions and the usual car-trucks for the carrying of heavy freight  
5 therein and when swung back against the sides of the car to form a single large dumping-compartment for the carrying of light

bulky freight, and bolt mechanism for locking and holding the bulkheads in their closed position, substantially as described.

HARRY STILLSON HART.

Witnesses:

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HARRY I. CROMER.