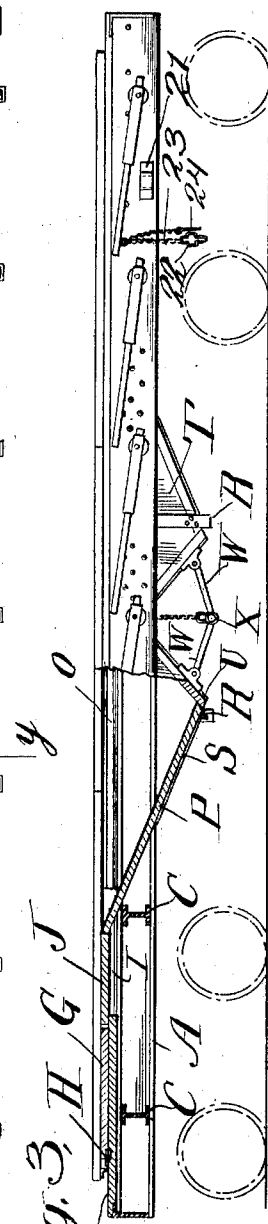
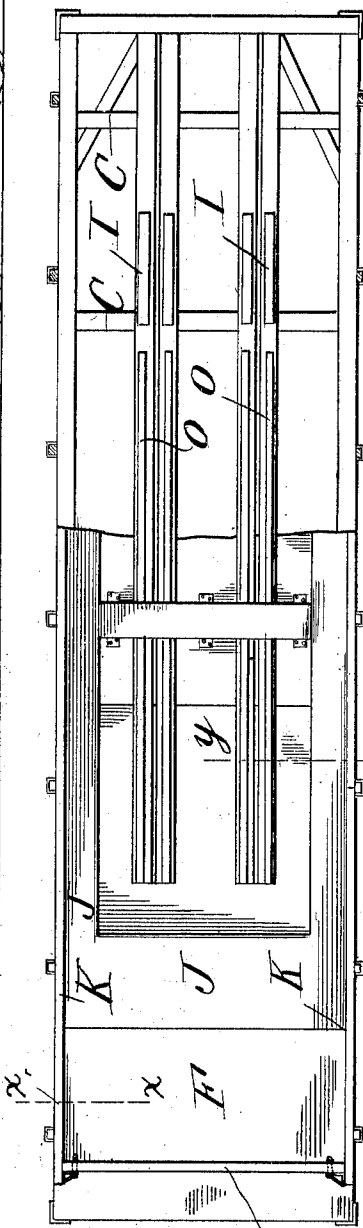
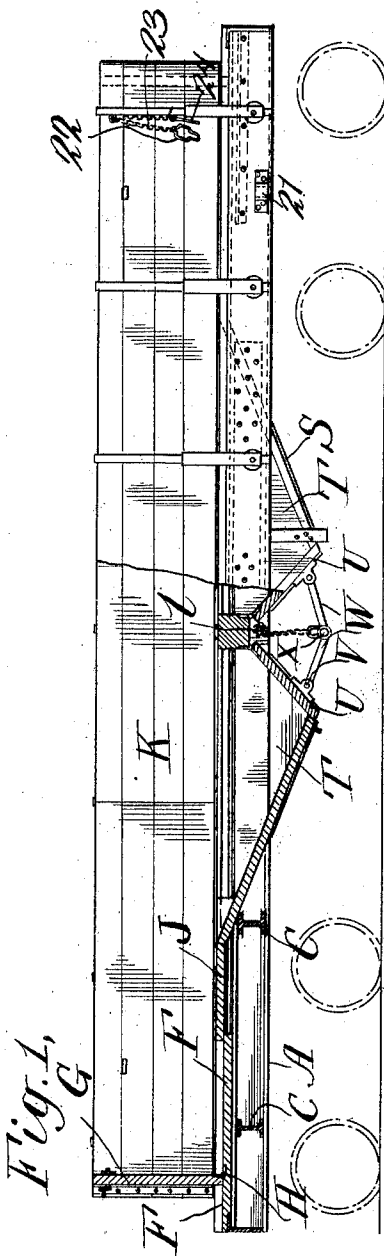


O. M. JONES.
FREIGHT CAR.

APPLICATION FILED SEPT. 20, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:
Sam Gillman
J. H. Hinkel

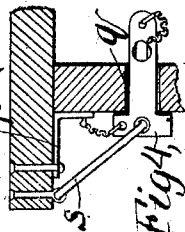


Fig. 4.

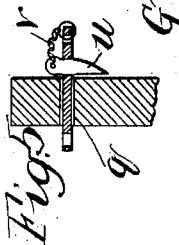


Fig. 5.

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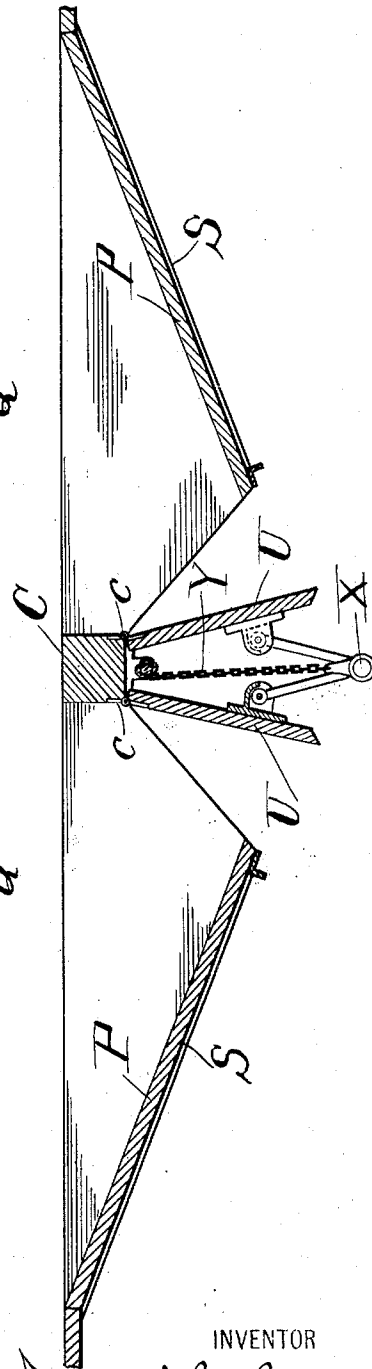
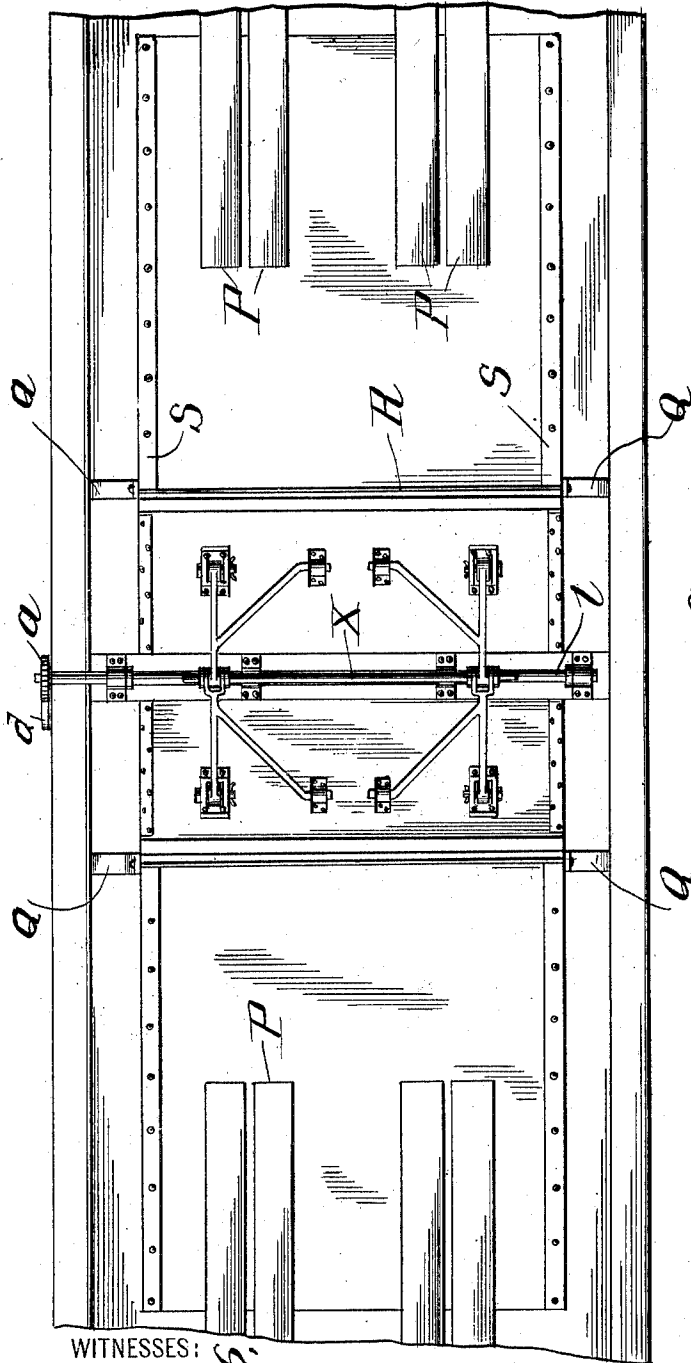
PATENTED MAY 10, 1904.

O. M. JONES.
FREIGHT CAR.

APPLICATION FILED SEPT. 20, 1902.

NO. MODEL.

4 SHEETS—SHEET 2.



WITNESSES:

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Fig. 6.

Fig. 7.

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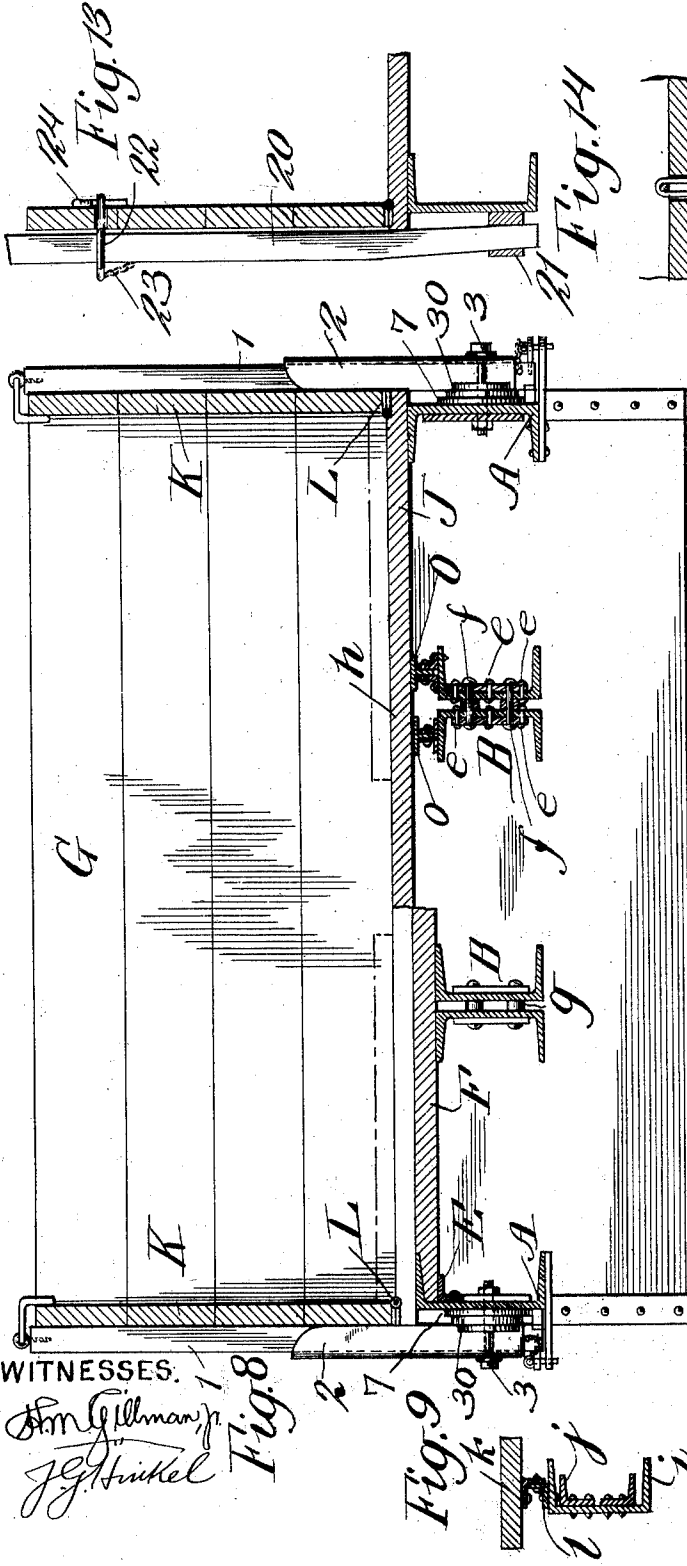
PATENTED MAY 10, 1904.

O. M. JONES,
FREIGHT CAR.

APPLICATION FILED SEPT. 20, 1902.

NO MODEL.

4 SHEETS—SHEET 3.



WITNESSES.

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Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12, 13, 14

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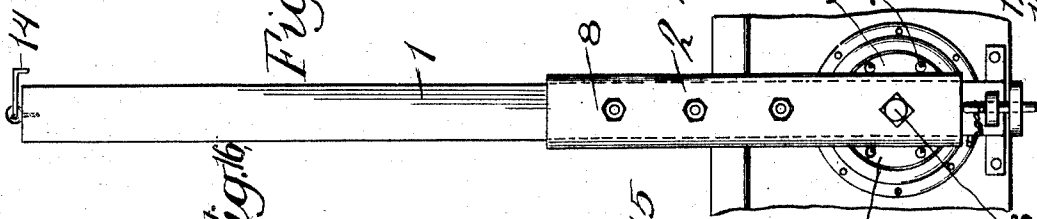
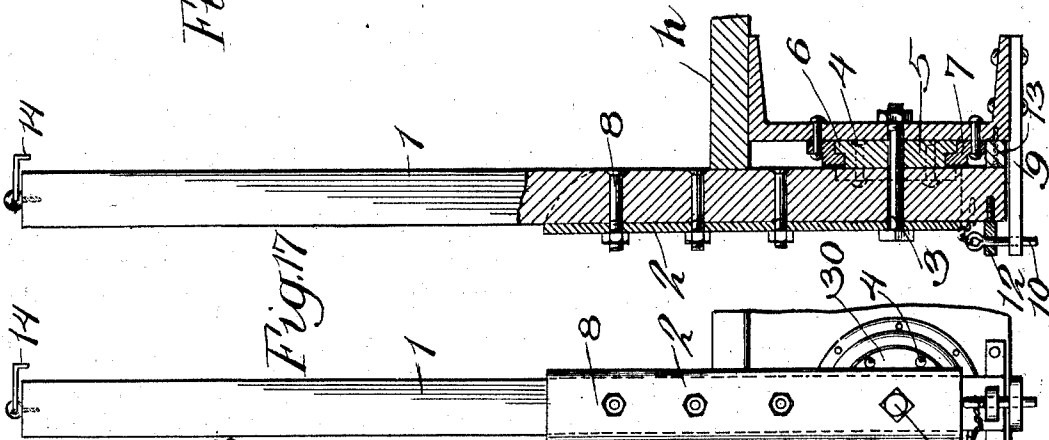
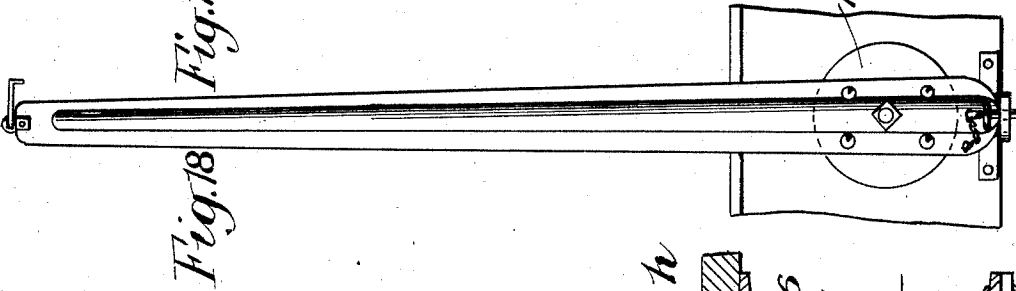
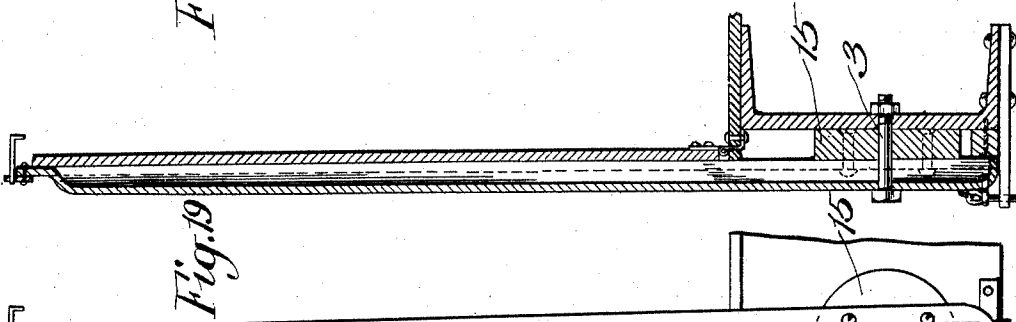
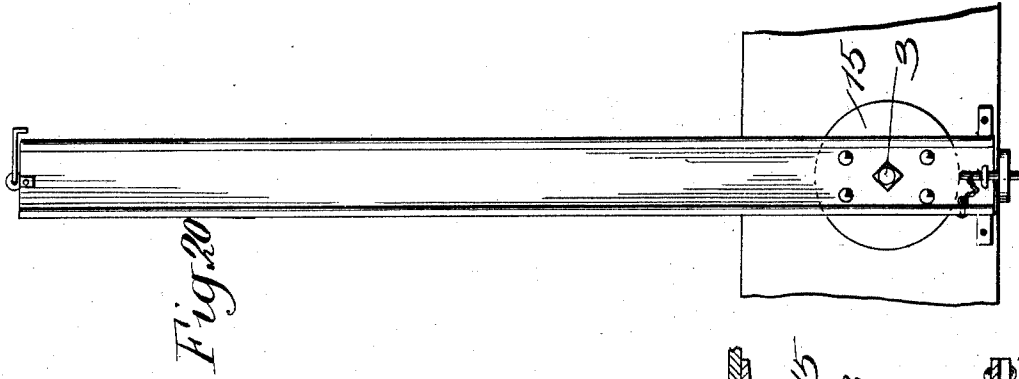
PATENTED MAY 10, 1904.

O. M. JONES.
FREIGHT CAR.

NO MODEL.

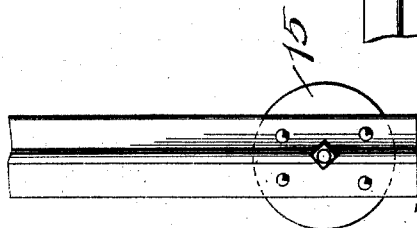
APPLICATION FILED SEPT. 20, 1902.

4 SHEETS—SHEET 4.



WITNESSES:
Sam Gillman, Jr.
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Fig. 15



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UNITED STATES PATENT OFFICE.

OWEN MARSHALL JONES, OF NEW YORK, N. Y.

FREIGHT-CAR.

SPECIFICATION forming part of Letters Patent No. 759,285, dated May 10, 1904.

Application filed September 20, 1902. Serial No. 124,227. (No model.)

To all whom it may concern:

Be it known that I, OWEN MARSHALL JONES, a citizen of the United States, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Freight-Cars, of which the following is a specification accompanied by drawings.

My invention relates to railway freight-cars and to such other vehicles for transportation to which my invention may be applicable.

The object of my invention is to improve upon the construction of freight-cars and enable the same car to be used either as a flat-car or as a gondola or hopper car.

Another object of my invention is to secure a ready means for dumping the car, which may be utilized or not, as desired, with the convertible features referred to.

Further objects of my invention will hereinafter appear; and to these ends my invention consists in a freight-car constructed and arranged and having the general mode of utilization substantially as hereinafter fully described in this specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved construction of car, partly in section, showing a dumping apparatus on the car. Fig. 2 is a top plan view of the car shown in Fig. 1 with a portion of the bottom broken away, in Figs. 1 and 2 the sides and ends of the car being raised to form a hopper or gondola car. Fig. 3 is a side elevation, partly in section, of the car with the sides and ends folded inwardly to form a flat-car. Fig. 4 is a large detail plan view in transverse section at one corner of the car, showing the means for securing the ends to the sides in a raised position. Fig. 5 is a large detail sectional view taken longitudinally of Fig. 4. Fig. 6 is a bottom plan view looking upward at the bottom of the car, showing the dumping apparatus. Fig. 7 is a longitudinal sectional view of the dumping apparatus, showing the dump open. Fig. 8 is a transverse sectional view of the car, taken on the lines *xx* and *yy* in different planes on Fig. 2. Fig. 9 is a detail view of one of the center sills, showing a modification. Fig. 10 is a side elevation of a single stringer

or sill for use as the side sill in a gondola car with or without the chute or dumping apparatus. Fig. 11 is a side view of a center sill for use without the dumping apparatus or chute. Fig. 12 is a side view of a center sill constructed for use in a dumping-car with the dumping-chute, the sills or stringers shown in Figs. 10, 11, and 12 being adapted for my improved collapsible car. Fig. 13 is a detail view, in transverse section, showing one of the additional stakes for temporary use; and Fig. 14 is a detail view in section showing the socket for the temporary stake. Fig. 15 is a side view of a stake formed of a T-iron. Fig. 16 is a side view showing in enlarged detail a wooden stake and the socket therefor. Fig. 17 is a transverse sectional view, partly broken away, of the stake and socket shown in Fig. 16. Fig. 18 is a side view of a modified form of stake constructed of pressed steel. Fig. 19 is a transverse sectional view of the pressed-steel stake shown in Fig. 18, and Fig. 20 is a side view of a stake formed of a channel-iron.

In the car illustrated in the figures a dumping apparatus and chute are shown operating in the bottom of the car; but I am not to be understood as limiting my invention to a dumping-car, for the sides and ends of the car may be constructed to be collapsible without the use of the dumping apparatus. This change may be readily effected by a slight difference in the construction of the center sills or stringers of the car. In either construction, with or without the chute, the sides and ends of the car may be folded inwardly to form a flat-car with a flush top, the ends in this instance being folded upon a slightly-depressed portion of the car-bottom, while the sides fold over the ends to form the flat part. The stakes for holding or bracing the sides of the car in an upright position are pivoted in such manner that they may be rotated from the upright position shown in Fig. 1 to the position shown in Fig. 3 when the sides and ends are folded upon the bottom of the car.

Having stated generally the objects to be carried out by my invention, I will describe the construction of the car more in detail, and

in the figures the side sills A and center sills B, together with the cross-beams C, support the car structure. In order to carry out my invention, I have found that a side sill A, constructed as shown in Fig. 10, is suitable and satisfactory. According to this construction the sill is formed of a channel-iron, the web of which is strengthened by a longitudinal strip D intermediate its ends, while at the ends of the sill short angle-irons E are secured just below the top of the sill to form ledges or supports for the flooring F at the ends of the car, this flooring being preferably flush with the top of the side sills, as shown more particularly in Fig. 8. The collapsible ends G of the car are shown as suitably secured to the end flooring F in such manner that they may be folded inwardly and downward to form the flat-car, in this instance the ends G being secured to the flooring by hinges H. When the ends are folded downward, they are adapted to lie perfectly flat, as shown in Fig. 3, upon the end flooring.

As shown in Figs. 10, 11, and 12, the center sills B, either for the dumping-car or for the construction without the dump, are shown slightly less in height than the side sills A. This fact is illustrated also in Fig. 8, the center sills then being built up to the height of the side sills. Referring more particularly to the construction of a dumping-car, it will be seen that short supports, formed in this instance of T-irons I, are secured to the tops of the center sills B for supporting the flooring J. The flooring J is thus raised slightly above the end flooring F to bring the top of the flooring J substantially flush with the top of one of the ends G when the end is folded inwardly. The sides K of the car are suitably hinged, as at L, to the flooring J, so that they may be folded downwardly and inwardly over the ends G and form a flush top for the flat-car. Provision is afforded for supporting the centers of the sides on the built-up portions of the center sills. The center sills are shown as being provided with supports in the form of T-irons O, secured to the tops of the sills and of slightly greater height than the irons I, being of sufficient height to form a support substantially flush with the top of the flooring J. A space is left at each end of the irons O for the bottoms P of the chute, the upper ends of which may be supported on the cross-beams of the car, while the lower ends may be suitably supported from the sills by downwardly-extending struts Q, secured to cross-pieces R on the under portion of the bottoms P of the chute. Suitable strips S may be connected to the edges of the sides of the chute. Suitable end pieces T are secured to the bottoms of the chute inside of the struts Q. I have described one suitable form of chute construction; but the details of construction may be varied as desired. The gates or doors U are suitably hung for movement to and from the sides or

bottoms of the chute, in this instance a toggle-acting mechanism being shown for operating the gates U. Pivoted to the gates, as at the points V, are the toggle-acting arms W, which are suitably pivoted to each other at X and extend downwardly from the horizontal. Means are provided for raising and lowering the pivot-points X to close and open the gates U, in this instance a chain Y being connected to the pivot or bar X and adapted to be wound upon a shaft Z, provided with a ratchet-wheel *a* and pawl *b*, any suitable means being used for winding the chain upon the shaft Z. According to the construction shown when the chain is wound up the doors U are closed, and by releasing the pawl *b* the doors may be allowed to open and the material in the car allowed to empty from the chute. The doors U may be hung for movement in any suitable manner, as by means of the hinges *c*, connected to the central cross-beam C. According to the construction described for the chute and dumping apparatus it will be seen that all of the operative parts are beneath the body of the car, and thus protected from interference by the load.

Referring more particularly to the construction of the side and center sills, it will be seen that in Fig. 8 the center sills are formed channel-irons, to the webs of which are riveted strengthening-pieces *e*, and then the irons are suitably secured to each other, as by rivets *f*, separating-washers *g* being provided between the channel-irons in this instance. The end portions of the center sills, which are not built up to the full height of the side sills, afford central supports for the floor F. In Fig. 8 the built-up portions of the center sills comprise, as hereinbefore stated, the T-irons O, secured between the angles *h*. A modification of the construction of the center sills is shown in Fig. 9, in this instance the sill comprising the channel-iron *i*, having the angles *j* secured to the web, as by rivets, while the built-up portion consists of an angle-iron *k*, riveted to another angle *l*, which in turn is secured to the channel-iron *i*. According to these constructions of the sills and also by reason of the construction described for the side sills a strong central portion or web is obtained without the necessity of making the web of considerable width, as is customary in the pressed-steel shapes. When the car is constructed without the dumping apparatus, the center sills are provided with the built-up portions or strips *l* to make the center sills of the same height as the side sill. Suitable means are provided (shown as the revoluble stakes, hereinafter to be described,) for bracing the sides in an upright position, and in order to maintain the ends upright suitable means may be provided, I having shown a convenient construction illustrated more particularly in Figs. 4 and 5. As shown, the sides are provided with stops which may be in the

form of angles p , against which the ends are adapted to abut when raised, and the ends are provided with apertures q for the reception of a securing piece or bolt r , suitably connected to the sides of the car, as by a hook s , and in this instance a chain t is shown, connecting the head of the bolt with the side of the car, the chain forming an additional means for securing the bolt to the side of the car and preventing it from becoming lost. The end of the bolt is provided with a pin u , connected thereto by a chain v , and in Figs. 4 and 5 the bolt is shown in position to maintain the end of the car upright. In converting the car into a flat-car the pin u is removed from the aperture in the bolt and both pin and bolt withdrawn through the aperture q in the end of the car, whereby the ends may be folded downward and the sides folded upon the ends. In the position of the parts shown in Fig. 3 it will be seen that since the stops p are arranged beyond the outer edges of the ends in a folded position these stops will not interfere with the folding downward of the sides, because provision is afforded beyond the ends for the stops to lie between the side of the car and the flooring F .

It is obvious that the sides and ends of the car will be maintained in an upright position by means of the construction shown and described in connection with Figs. 4 and 5; but I have shown stakes in addition thereto for bracing the sides of the car. These stakes are shown more particularly and in enlarged detail in Figs. 15 to 20, and the stakes themselves may consist either of wood or metal, as desired, and suitable means are provided for maintaining the stakes in an upright position and for affording provision for rotating the stakes about suitable pivots in order that they may be lowered into a position longitudinally of the car when the sides and ends are folded.

Referring to Figs. 16 and 17, a construction is shown wherein the stake 1 is constructed of wood and suitably secured in a socket 2, adapted to be rotated about the pivot 3, shown in the form of a bolt passing through the stake and socket and connected to the side sill of the car. The socket 2 is provided with a bolt-plate 30, shown secured, as by the bolts or rivets 4, to the bearing-block 5, shown in this instance in the form of a disk provided with an annular flange 6, adapted to take under the bearing-flanges of the ring 7, secured to the side sill. According to this construction it will be seen that the stake and socket 2 may be rotated about the pivot 3. The stake may be secured within the socket by suitable means, shown as the bolts 8, and in order to maintain the stake in an upright position a suitable construction consists of the projecting or securing piece 9, suitably fastened to the side sill and provided with an aperture for the reception of the pin 10, which is shown secured, as by the chain 11, to the

stake and adapted to be also passed through the staple 12, and thus prevent the rotation of the stake. The stop or bearing-block 13 is provided secured to the sill in order to resist the inward thrust of the lower end of the stake when the sides of the car are pressed outwardly. If desired, hooks 14 may be provided upon the tops of the stakes to hook over the sides of the cars when they are in an upright position and aid in maintaining them securely in such position.

When a T-iron is utilized for a stake, as shown in Fig. 15, the stake-socket 2 is dispensed with and the stake secured directly to a modified form of bearing-block, shown as a disk 15, rotatable upon the suitable pivot. In the construction shown in Figs. 18, 19, and 20 the stake-socket may also be dispensed with and the stake secured directly to the disk-shaped bearing-block 15, rotatable upon the pivotal bolt 3.

When a wooden stake or a stake of any other construction is used, together with a socket, the pivotal bolt 3 is not necessary, for the flanges of the ring 7 maintain the socket and stake against the sill and the side of the car. In Fig. 19 the side of the car is shown in an upright position against the stake, and the construction of stake described is simple in form and efficient and strong in operation.

The construction of stakes described may be used upon any kind of car desired to which they are applicable—as, for instance, upon logging-cars.

It may be desirable at times to use temporary stakes upon the car in addition to the side stakes described, and provision is afforded for securing the temporary stakes 20 to the car, the lower ends of which may be thrust into the sockets 21 and the upper ends secured within a link 22, attached to the revoluble stakes, as by means of a chain 23, the link being adapted to be thrust through the aperture in the side of the car and secured by a pin 24, also fastened to the chain. If desired, this construction may be followed in connection with the revoluble side stakes instead of providing hooks upon the stakes.

According to my construction the sides, ends, flooring, sills, and cross-beams may be of wood, if desired, as well as of metal, and the built-up portions of the sills may be formed of several wooden members in order to form the desired steps. The center sills may be formed of one channel-bar only, if desired, instead of two, with a strengthening-strip secured to the web, as already described. If the metal stakes should be used with the bearing or spacing block shown in Figs. 16 and 17 and the ring 7, no bolt 3 is necessary.

The sides of the car may be formed in sections, so that they may be raised and lowered, the stakes being arranged at the dividing-lines between the sections to brace the same.

Obviously some features of my invention

may be used without others, and my invention may be embodied in widely-varying forms.

Therefore without limiting myself to the construction shown and described nor enumerating equivalents, I claim and desire to obtain by Letters Patent the following:

1. A car provided with folding sides and ends, some of which are adapted to lie beneath the others and stakes upon movable supports for bracing the sides of the car and adjustable below the floor-line thereof, thus forming a substantially flat unobstructed flooring when said sides, ends and stakes are in a folded position, substantially as set forth.
2. A car provided with folding ends, sides adapted to be folded downwardly over the ends, means for securing the sides and ends together in an upright position, and adjustable stakes pivotally connected to the body of the car and radially movable upon their supports for bracing the sides of the car, substantially as set forth.
3. A car provided with inwardly-folding sides and ends pivotally attached to the car, means comprising a fastening removably attached to one of said members and a hook adapted to engage the fastening when in place said hook secured to the other member for maintaining said sides and ends in a vertical position, and means affording provision for the folding of the sides substantially flat without interference from the ends when in a folded position, substantially as set forth.
4. A car constructed with a permanent aperture in the bottom thereof, and having a chute and dumping apparatus permanently below the car-bottom, folding sides and ends some of which are adapted to lie beneath the others, and form a flat flooring for the car, and adjustable means for maintaining said sides and ends in a vertical position when desired, substantially as set forth.
5. A car provided with an aperture in the bottom thereof, a chute extending downwardly beneath said aperture, swinging gates or doors adapted to open and close the bottom of said chute, toggle-acting levers connected to operate said gates or doors, means connected to close said doors by raising opening and supporting the toggle, and means, as the weight of the parts, affording provision for the opening of said doors when the toggle closes downwardly, substantially as set forth.
6. A car provided with a downwardly-extending chute beneath the same, and doors or gates for opening and closing the bottom of said chute, toggle-acting levers pivoted to said doors and at their inner ends pivoted upon a non-rotating bar extending transversely of the car, and means for raising and lowering said bar together with the toggle-acting levers, whereby the doors are closed when the bar is raised, substantially as set forth.
7. The improved stake for bracing the side

of a car or for other purposes, comprising in combination with the stake, a socket, a flanged ring, a spacing or bearing block secured to the socket, and rotatable within said ring, and means connected with the car-body for maintaining the stake in an upright position, substantially as set forth.

8. The improved stake for a car comprising in combination with the stake, a socket rotatably secured to the car, and means connected with the car-body for maintaining said stake in an upright position, substantially as set forth.

9. The improved stake for a car comprising in combination with the stake, a socket, a spacing or bearing block secured to the socket, and of disk-shaped form, a circular flange on said spacing-block adapted to cooperate with a flanged ring whereby the socket and stake may be rotated, and means connected with the car-body for maintaining said stake in an upright position when desired, substantially as described.

10. The improved stake for a car comprising in combination with the stake, a spacing or bearing block secured thereto, a pivot for securing the stake and block to the car and about which the stake is rotatable, and means connected with the car-body for maintaining said stake in an upright position when desired, substantially as set forth.

11. The combination with the side of a car and a car-stake, of a temporary link or socket therefor arranged to engage the side of the car and the stake, for holding the stake in an upright position, substantially as set forth.

12. The combination with the side of a car having an aperture therein, of a stake and a link or socket adapted to be thrust through said aperture, for holding the stake against the side of the car, substantially as set forth.

13. A sill or stringer for a car, comprising a channel-iron having a strengthening bar or strip secured longitudinally of the web of the same, and a built-up portion extending longitudinally outside of one of the flanges of the channel-iron, substantially as set forth.

14. A sill or stringer for a car, comprising a plurality of channel-irons secured to each other with the channels facing upwardly, strengthening bars or strips secured longitudinally of the webs of the channel-irons and within the channels, said channel-irons being provided with built-up portions extending longitudinally thereof for increasing the height of the sill or stringer, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

OWEN MARSHALL JONES.

Witnesses:

E. VAN ZANDT,
H. G. OGDEN, Jr.