

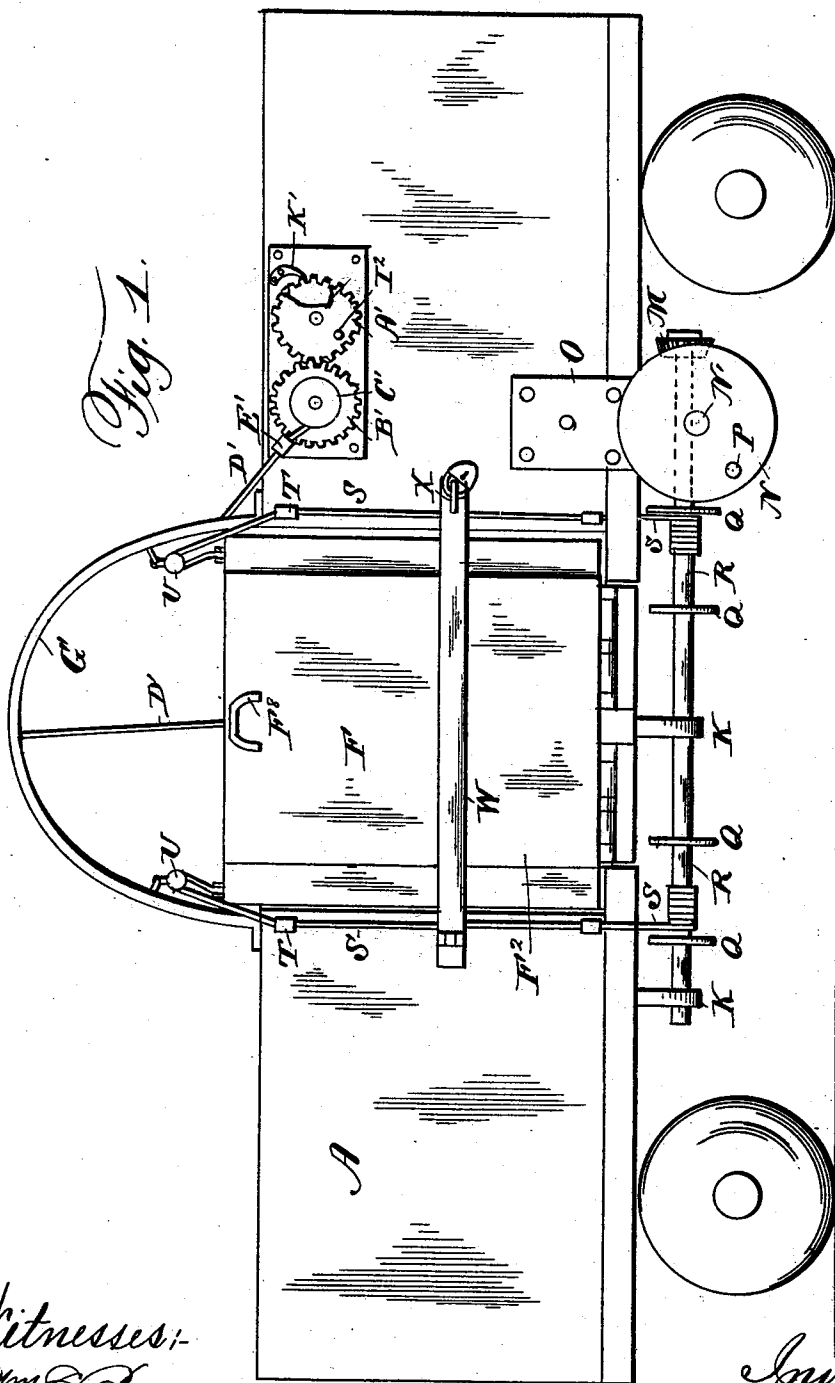
(No Model.)

3 Sheets—Sheet 1.

R. L. PIEPENBRING.
RAILWAY CAR.

No. 508,835.

Patented Nov. 14, 1893.



Witnesses:
Wm. C. Coulter,
W. E. Cowell.

Inventor:
Rudolph L. Piepenbring
by *A. R. W. W. W.*
his attorney

(No Model.)

3 Sheets—Sheet 2.

R. L. PIEPENBRING.
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Fig. 2.

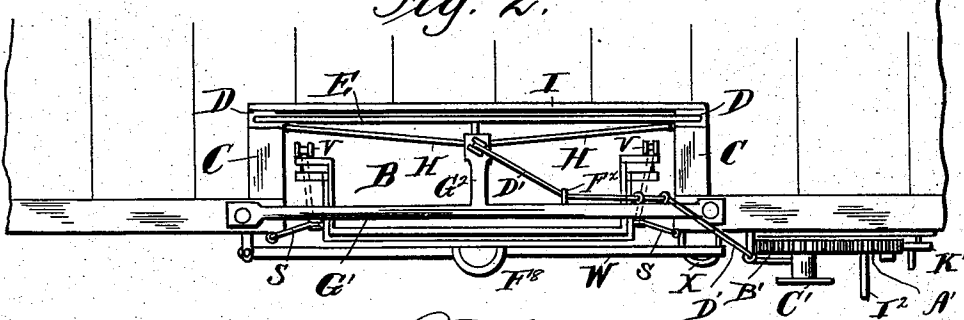


Fig. 3.

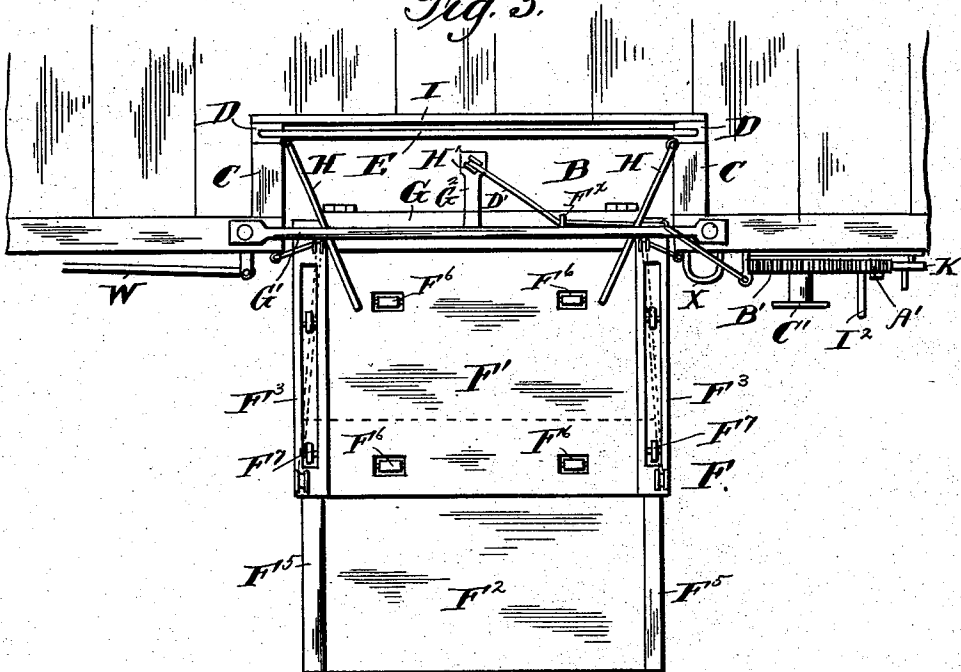


Fig. 5.

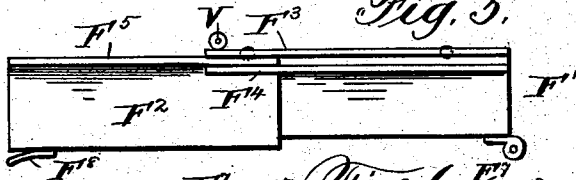
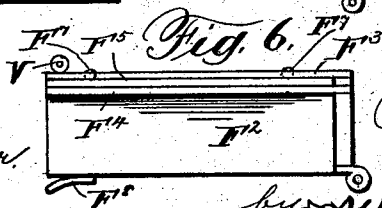


Fig. 6.



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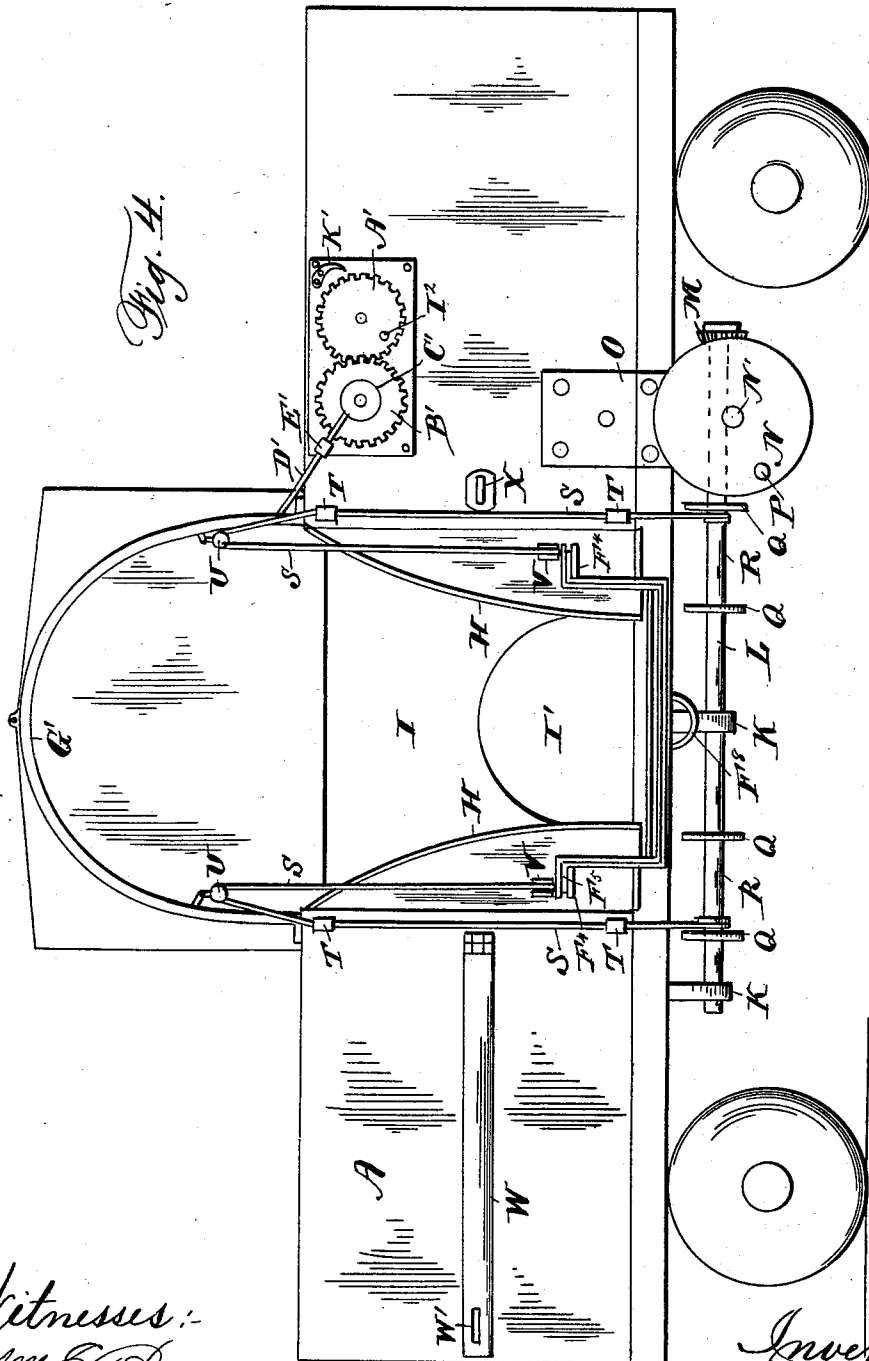
(No Model.)

R. L. PIEPENBRING.
RAILWAY CAR.

3 Sheets—Sheet 3.

No. 508,835.

Patented Nov. 14, 1893.



Witnesses:
Wm. E. Dulker,
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UNITED STATES PATENT OFFICE.

RUDOLPH LOUIS PIEPENBRING, OF WASHINGTON, DISTRICT OF COLUMBIA.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 508,835, dated November 14, 1893.

Application filed August 2, 1893. Serial No. 482,193. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH LOUIS PIEPENBRING, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Railway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to railway cars, and more particularly to freight cars wherein coal, grain and other materials are carried, and among the objects in view is to provide a freight car with which are combined devices for quickly and conveniently unloading the contents thereof and discharging said contents into any suitable receptacle such as carts, wagons, or the like, and my invention consists in the novel construction, arrangement and combination of parts, as hereinafter fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—Figure 1 is a side elevation of a freight car provided with my improvements. Fig. 2 is a plan view. Fig. 3 is a view similar to Fig. 2 the chute being lowered and the sliding gate raised to permit of the discharge of the contents of the car. Fig. 4 is a front elevation of the parts when in the position indicated in Fig. 3. Fig. 5 is a detail side elevation of the chute when in its extended position, and Fig. 6 is a like view of the chute when in its closed or non-extended position.

In carrying out my invention I provide the freight car A, which may be of any preferred or ordinary construction and designed to carry coal, grain, &c., with an opening B in one side thereof and also provide said car with the uprights C arranged within the same at each side of the opening B. To the inner face of each of said uprights I secure a guide D within which is arranged a gate E adapted to slide vertically within the guides, said gate being made of any desired or suitable height and when applied to ordinary coal-cars it is made of a height corresponding to that of the car-body.

F indicates an extensible chute which is

hinged at its inner end to the car-body to adapt it to swing upwardly within the opening B as shown in Figs. 1 and 2, and to be swung downwardly into the inclined position shown in Figs. 3 and 5 when desired. The chute is composed of two sections F¹, F² adapted to slide one upon the other, and for which purpose the section F¹ is provided with the horizontally-extending lateral flanges F³ to which are secured parallel strips or plates F⁴ to form a guide-way between them to receive the lateral flanges F⁵ of the section F².

For the purpose of adapting the section F² to be easily extended and closed beneath section F¹, I provide the latter in its bottom with anti-friction rollers F⁶ and also provide the flanges F³ with similar rollers F⁷.

Within the opening B is hinged a sill or flap G in such position as to swing down over the hinges of the chute and prevent the material from gaining access to the same which might affect the proper operation of the chute.

For the purpose of preventing the material while being discharged from passing out through the spaces intermediate the inner edges of the chute and the edges of the opening B, I provide flaps or supplementary gates H which are pivoted or hinged at one edge to the uprights C so that when the material is being discharged from the car, said gates will swing outwardly to permit the said discharge and at the same time guide it as it were onto the chute and thus avoid any waste.

To the guides D is secured a protecting plate or partition I, provided with an opening I' to permit the discharge therethrough of the material, said plate being designed to prevent the weight of the material in the car from bearing upon the gate E and thus preventing it from being raised.

For the purpose of properly operating the gate E and the chute, I provide any suitable means, though I prefer to employ the means shown and which are constructed and arranged as follows: Mounted in suitable bearings or hangers K upon the under side of the car-body and longitudinally near one edge thereof is a shaft L, which at one end is provided with a bevel pinion M with which meshes a larger crown pinion N mounted upon a stud N' having a bearing in a hanger

or bracket O secured to the side of the car body. The pinion N is provided with an operating handle or crank P by which it may be rotated and consequently effect the rotation of the shaft L. The said shaft is provided with flanges Q forming drums R around which are adapted to be coiled chains or ropes S which pass upwardly through suitable guide eyes T and over guide pulleys U, and are secured to rollers V or other devices secured to the flanges F³ of the chute. When the ropes or chains S are partially unwound from the drums the chute will swing downwardly automatically by its own weight into the inclined position shown in Figs. 3 and 5 and when it is desired to raise the chute, the ropes or chains will be wound upon the drums to effect this object, and after the said chute has been so raised it may be secured in that position by means of the usual securing bar W having an opening W' at one end through which is adapted to pass the staple X on the car which has a suitable padlock for locking the bar securely in place. Although it is not absolutely necessary to make the chute an extensible one, *i. e.*, the section F² might be dispensed with, yet I prefer the extensible construction so that the material may be discharged into a receptacle located some distance beyond the car. I provide the section F² with a suitable handle F³ by means of which it may be readily drawn out into the extended position, and again pushed beneath the section F' whenever desired.

Rotatably mounted upon the side of the car-body near the upper edge thereof is a gear-wheel A' which meshes with a similar gear-wheel B' also rotatably mounted upon the car-body the shaft of said gear-wheel B' being extended and provided with a flange C' forming a drum around which is adapted to be wound a rope or chain D' which passes upwardly through a guide eye E', and similar eyes F^x secured to a bowed standard G' which spans the opening B, said rope passing also over a guide pulley H' carried by an arm G² of the standard G', and thence down to the gate E to which it is secured.

The gear-wheel A' is provided with an operating handle or crank I² by which it may be rotated and thus effect the rotation of the gear-wheel B' to cause the rope or chain to wind upon the drum and thus raise the gate E, which may be held in such position by means of a pawl K' engaging the teeth of gear-wheel A'. By releasing the pawl from the teeth of said gear-wheel, the weight of the gate will cause it to descend into its normal closed position. I prefer to make the operating handles or cranks P and I² detachable, so that the same may be removed when the car is traveling on the road and not be liable to be broken or injured and at the same time prevent unauthorized tampering with the device.

The operation of the devices described may be briefly stated to be as follows:—While the

car is being loaded and while in transit, the gate E is kept closed or lowered and the chute F locked in its raised position by means of the bar and padlock mentioned. When it is desired to unload the car of its contents, the operating cranks are inserted in the pinion N and gear-wheel A' respectively, and by turning the crank I² the gear-wheels A', B' will be rotated causing the rope or chain D' to wind upon the drum and raising the gate E. The crank P is then turned to rotate the pinions N, N' and shaft L causing the ropes or chains S to unwind from the drums or slacken to permit the chute to swing downwardly by its own weight into the position shown in Figs. 3 and 5, the material within the car thus passing through the opening of the plate I swinging laterally the flaps or gates H, and out upon the chute whence it is discharged into the cart or wagon or other receptacle provided for it. When all the material has been thus discharged from the car, the chute is raised by the means described, and then locked in its raised position by the padlock and securing bar, while the pawl is released from the teeth of the gear-wheel to allow the gate E to descend into its closed position.

Many changes might be made in the construction and relative arrangement of the parts of my device without departing from the spirit thereof and without sacrificing any of the advantages thereof.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a car-body provided with an opening in a side thereof, of vertical guideways arranged upon the inner side of the car body upon each side of the opening a vertically arranged gate fitted and adapted to slide vertically within said guideways, a chute hinged at its lower end to the car body and adapted to be swung downwardly into an inclined position and also to be swung upwardly so as to close the opening in the car, the outer side of the chute when swung into the opening being substantially flush with the outer sides of the car, and a locking bar hinged to the latter and adapted to be extended across the chute and have its opposite end secured for the purpose specified.

2. The combination with a car body provided with an opening in a side thereof, of vertical guideways arranged upon the inner side of the car body upon each side of the opening, a vertically arranged gate fitted and adapted to slide vertically in said guideways, a plate arranged in rear of the sliding gate, secured to said guideways and provided with a discharge opening, and a chute hinged at its lower end to the car and adapted to be swung downwardly into an inclined position and also to be swung upwardly so as to close the opening, and means for locking the chute in its raised position.

3. The combination with a car body provided with an opening in a side thereof, of ver-

tical guideways arranged upon the inner side of the car body upon each side of the opening, a vertically arranged gate fitted and adapted to slide vertically within said guideways, a plate arranged in rear of the sliding gate, secured to said guideways, and provided with a discharge opening, a chute hinged at its lower end to the car and adapted to be swung downwardly into an inclined position and also to be swung upwardly so as to close the opening, supplementary gates or wings hinged at one edge to the guideways in front of the sliding gate and adapted to be swung outwardly and laterally into a diagonal position so as to form a guide for the material being discharged, and means for locking the chute in its raised position.

4. The combination with a car-body provided with an opening in one side thereof, of a chute hinged to the same and adapted to swing upwardly into the opening and downwardly into a lowered or inclined position as described, means for raising said chute, a vertically-sliding gate adapted to control the passage of the material through said opening, means for raising said gate, a plate provided with an opening and arranged to prevent the material coming in contact with said gate, and supplementary gates or wings arranged between the said gate and the chute and adapted to be swung laterally, as and for the purpose specified.

5. The combination with a car-body provided with an opening in one side thereof, of a chute consisting of two sections one of which is hinged to said car-body, and provided with lateral flanges forming guideways, and the other section arranged beneath

the first section and provided with lateral flanges adapted to slide within the said guideways, as and for the purpose specified.

6. The combination with a car-body provided with an opening in one side thereof, of a chute hinged to said car-body and adapted to be swung upwardly into the opening of the same and downwardly into a lowered or inclined position, a vertically-sliding gate adapted to control the passage of the material through the opening, and means for raising the chute and gate consisting of gearing carried by the car-body, winding drums operated by said gearing, ropes or chains secured to the chute and gate and adapted to be wound upon said drums, as described.

7. The combination with a car-body provided with an opening in one side thereof, of a chute hinged to said car-body and adapted to be swung upwardly into the opening and downwardly into a lowered or inclined position, a vertically-sliding gate adapted to control the passage of the material through the opening, a bowed standard secured to the car-body and provided with guide eyes and pulleys, gearing carried by the car-body winding drums operated by said gearing, ropes or chains adapted to be wound upon said drums and passing through said guide eyes and over the said guide pulleys and secured to the chute and sliding gate, for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

RUDOLPH LOUIS PIEPENBRING.

Witnesses:

LOUIS H. EMMERT,
CHAS. SCHNEBEL.