J. N. HELTZEL.

CAR UNLOADING CHUTE.

APPLICATION FILED DEC. 29, 1915.

1,308,950.

Patented July 8, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

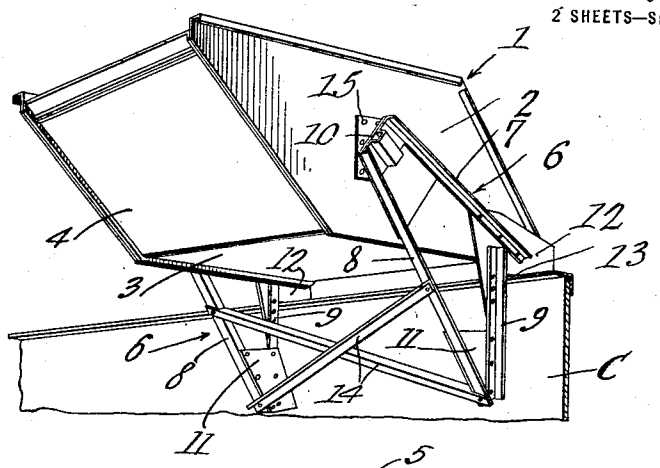


Fig. 2.

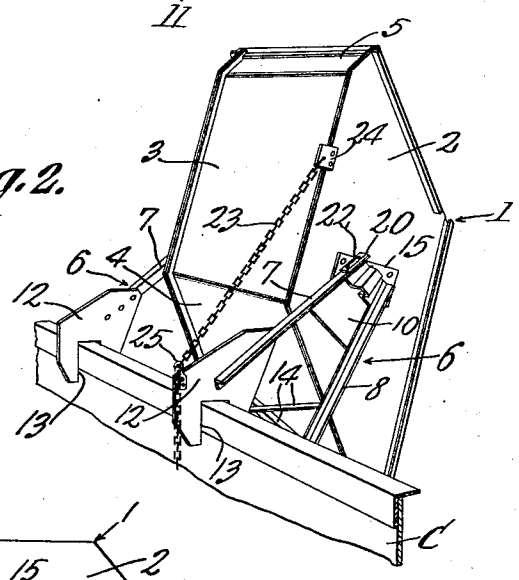


Fig. 3.

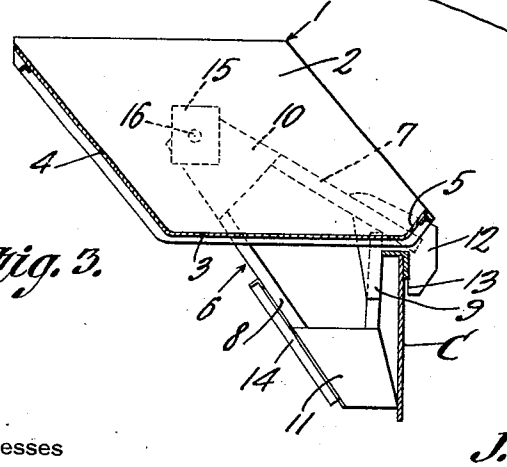
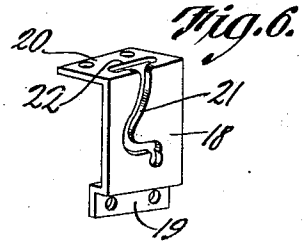


Fig. 6.



Witnesses

J. P. Gowlin

R. L. Parker

J. N. Heltzel

Inventor

by C. A. Snow & Co.

Attorneys

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

J. N. HELTZEL.

CAR UNLOADING CHUTE.

APPLICATION FILED DEC. 29, 1915.

1,308,950.

Patented July 8, 1919.

2 SHEETS—SHEET 2.

Fig. 4.

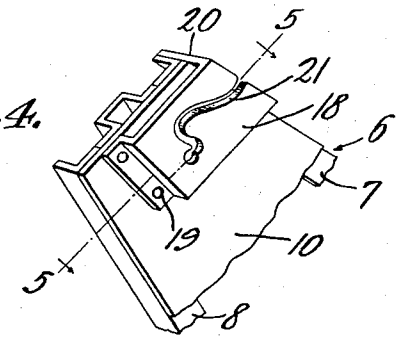


Fig. 5.

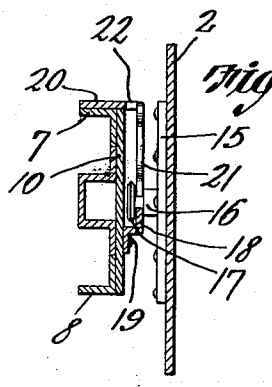


Fig. 7.

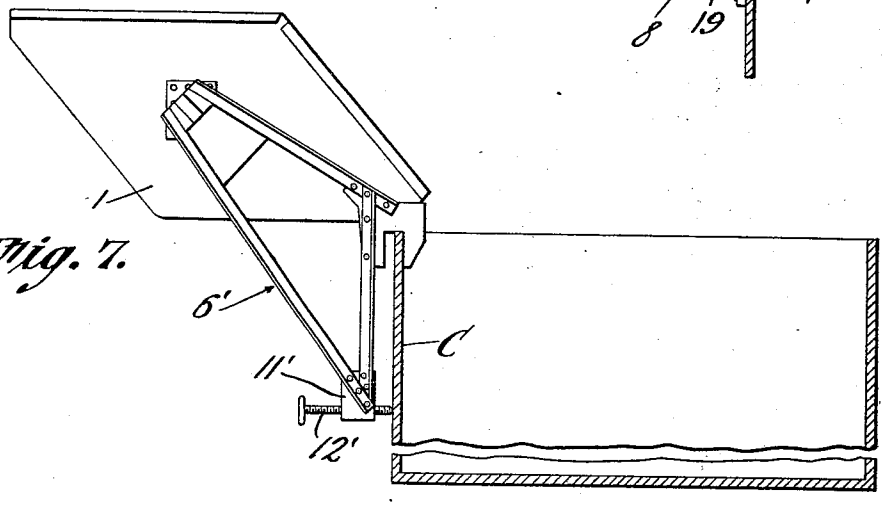
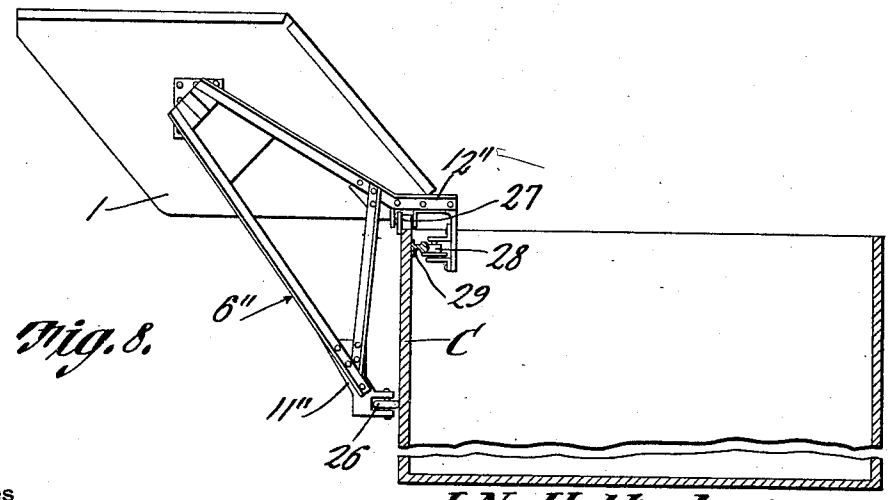


Fig. 8.



Witnesses

J. R. Tinsley

R. L. Parker

J. N. Heltzel Inventor

by C. A. Snow & Co.

Attorneys

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN N. HELTZEL, OF WARREN, OHIO, ASSIGNOR TO THE HELTZEL STEEL FORM & IRON CO., OF WARREN, OHIO.

CAR-UNLOADING CHUTE.

1,308,950. Specification of Letters Patent. Patented July 8, 1919.

Application filed December 29, 1915. Serial No. 69,234.

To all whom it may concern:

Be it known that I, JOHN N. HELTZEL, a citizen of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have invented a new and useful Car-Unloading Chute, of which the following is a specification.

The present invention appertains to unloading apparatus, and aims to provide a novel and improved car unloading chute, by means of which a car containing coal, sand, or the like, can be unloaded in a convenient and practical manner, the present device serving to transfer the material from the car to the wagon or other receptacle.

It is the object of the invention to provide novel means for assembling the chute with the car for receiving the coal, sand, or other material, and the chute being tiltable in order that the material can be dumped into a wagon or other receptacle moved below the chute. Thus, the workman can shovel the material into the chute instead of the wagon, and after the chute is filled, the wagon can be run below the same to receive the material dumped from the chute, thus saving time, and with a plurality of chutes, an even greater efficiency is obtained, since the workman can be kept busy, as well as the wagons. The chute is shiftable or movable longitudinally of the car as the car is emptied from one end or point to the other end.

The invention includes brackets engageable in a simple yet effective manner to the side of a car, and a removable chute carried by the brackets and of novel form in order that it can contain a maximum amount of material without the material falling back into the car, and the chute being tilted with comparative ease, although it is not apt to tilt accidentally.

It is also within the scope of the invention to provide a structure of the character indicated which is comparatively simple and inexpensive in construction, as well as being practical, reliable, serviceable and efficient in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of the device as applied to a car with the chute in position to receive the material shoveled from the car.

Fig. 2 is another perspective view of the device with the chute in dumping position.

Fig. 3 is a vertical section of the device with the chute in position as seen in Fig. 1.

Fig. 4 is an enlarged perspective view of one of the trunnion seats or bearings.

Fig. 5 is a sectional view on the line 5—5 of Fig. 4.

Fig. 6 is a perspective view of the trunnion seat or bearing detached.

Fig. 7 is an elevation of the device illustrating a modification.

Fig. 8 is a similar view of the device depicting another modification.

The chute 1 is constructed of sheet metal and is of rhomboidal contour in side elevation, and comprises the sides 2 of rhomboidal contour, the bottom 3 and outer inclined end 4. That end of the bottom 3 remote from the end 4 of the chute is turned up to provide an inclined lip 5 at the open end of the chute, for retaining the material in the chute, so that it is not liable to run back from the chute into the car, thus increasing the capacity of the chute.

As a means for pivotally supporting the chute 1 from the side of a railroad car C, two side brackets 6 are employed, each embodying angle iron members 7, 8 and 9, said brackets 6 being of triangular contour, and the adjacent ends of the angle iron members being rigidly united by the restrictive plates 10, 11 and 12, to which said members are riveted or otherwise secured. The lower plates 11 are adapted to rest against the outside of the car, and the plates 12 above the plates 11 are provided with lower recesses 13 forming hooks engageable over

the upper edge of the side of the car, in order that the brackets can be dropped easily into place upon the side of the car to remain in position, and to permit the structure to be shifted longitudinally along the car. The brackets 6 are inclined outward away from the car, and the sides of the chute 1 are trunnioned to the plates 10 at the free ends of the brackets.

In order to trunnion the chute to the brackets, plates 15 are secured to the sides 2 of the chute and are provided with outstanding trunnions 16 having heads 17 at their free ends, and plates 18 are disposed at the inner sides of the plates 10 and have their lower ends offset inwardly and riveted, or otherwise secured as at 19, to the plates 10. The upper ends of the plates 18 are extended angularly outward and are riveted or otherwise secured upon the angle iron members 7, there being spaces between the plates 10 and 18. The plates 18 are provided with upwardly opening slots 21 whose upper ends terminate in the angular portions 20 and are enlarged, as at 22, for the passage of the heads 17. The slots 21 can be straight or curved, whichever is preferred, and provide seats for the trunnions 16. In assembling the chute with the brackets, the chute is lowered between the brackets so that the heads 17 pass downwardly through the openings or enlargements 22 of the slots 21, thus allowing the trunnions to move downwardly in said slots to seat at the lower ends thereof. By curving or otherwise making the slots 21 irregular, the trunnions are not as apt to be disengaged from the brackets when the chute is tilted, as if the slots were made straight, but straight slots can be used if preferred.

The trunnions of the chute are located nearer the closed end thereof than the open end, whereby the center of gravity of the chute and its contents will lie inwardly with respect to the trunnions, to prevent the accidental tilting of the chute. During the shoveling of the material from the car into the chute, the chute is in the position illustrated in Figs. 1 and 3, to receive the material, and the inner open end of the chute rests upon the upper edge of the side of the car. After the chute is filled, it can be tilted by swinging it outwardly, so that the material is dumped into the wagon or other receptacle in a quick and convenient manner. As soon as the chute is discharged, it is returned to receiving position without delay. The brackets can be readily applied to and removed from the car, and the chute can be readily assembled with and detached from the brackets, as is desirable.

The two brackets 6 are preferably united by means of crossed braces 14 terminally secured to the lower angle iron members, although the brackets can be independent if desired.

The distance the material is discharged from the car is controlled by limiting the tilting movement of the chute, and for this purpose, a chain or other flexible element 23 is attached, as at 24, to the bottom of the chute, and is engageable with a hook or catch 25 attached to one of the plates 12, whereby when the chute is swung outwardly it will be arrested at the proper point by said chain. The chain is adjustably engaged with the hook 25, whereby the movement of the chute can be limited at various angles, to regulate the angle of dumping. If the chute is allowed to swing downwardly adjacent the side of the car, the material will be dumped almost directly downward, and if the chute is not permitted to swing as far, the material will be discharged at an angle away from the car. This permits the material to be properly dumped into the wagon or receptacle under various conditions.

In the modification illustrated in Fig. 7, the lower plate 11′ of the bracket 6′ has an adjusting screw 12′ which bears against the side of the car C whereby the screw 12′ can be adjusted for regulating the angle of the bracket, each of the brackets being equipped with one of these screws.

In the variation illustrated in Fig. 8, the lower plates 11″ of the bracket 6″ has a roller 26 to bear against the exterior of the side of the car C, and the hook portion 12″ of the bracket is provided with a roller 27 to seat on the upper edge of said side of the car, and is provided with another roller 28 to run along a rail 29 applied to the interior of the car. The structure can therefore be moved easily along the side of the car. The roller 27 is preferably flanged to prevent the inward movement of the bracket, and the roller 28 is flanged to engage under the rail 29 for preventing the upward movement of the bracket, thus holding the bracket in place properly.

Having thus described the invention, what is claimed as new is:

1. In a device of the class described, a pair of plates having recesses for receiving the side of a car; triangular outstanding frames secured to the plates and having means for engaging the side of a car below the plates; a connection uniting the frames; a chute located between the frames and having rhomboidal sides, a bottom and an inclined outer end wall, the bottom being upwardly extended to form a lip at the inner end of the chute; and means for pivoting the sides of the chute to the outer ends of the frames at points nearer to the outer end of the chute than to the lip.

2. In a device of the class described, a pair of brackets; plates having angular parts cooperating with the brackets, the plates having slots provided at their upper ends with enlargements located in the angular parts

of the plates; a rocking member located between the brackets; and trunnions on the sides of the rocking member, the trunnions being journaled in the slots and being movable downwardly into the slots, the trunnions having enlarged heads movable downwardly through the enlargements to occupy a position behind the plates.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN N. HELTZEL.

Witnesses:
F. I. GILLMER,
MARY E. TREAT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."