

No. 779,699.

PATENTED JAN. 10, 1905.

W. H. FERN.
LOADING DEVICE.
APPLICATION FILED APR. 6, 1904:

2 SHEETS—SHEET 1.

Fig. 1.

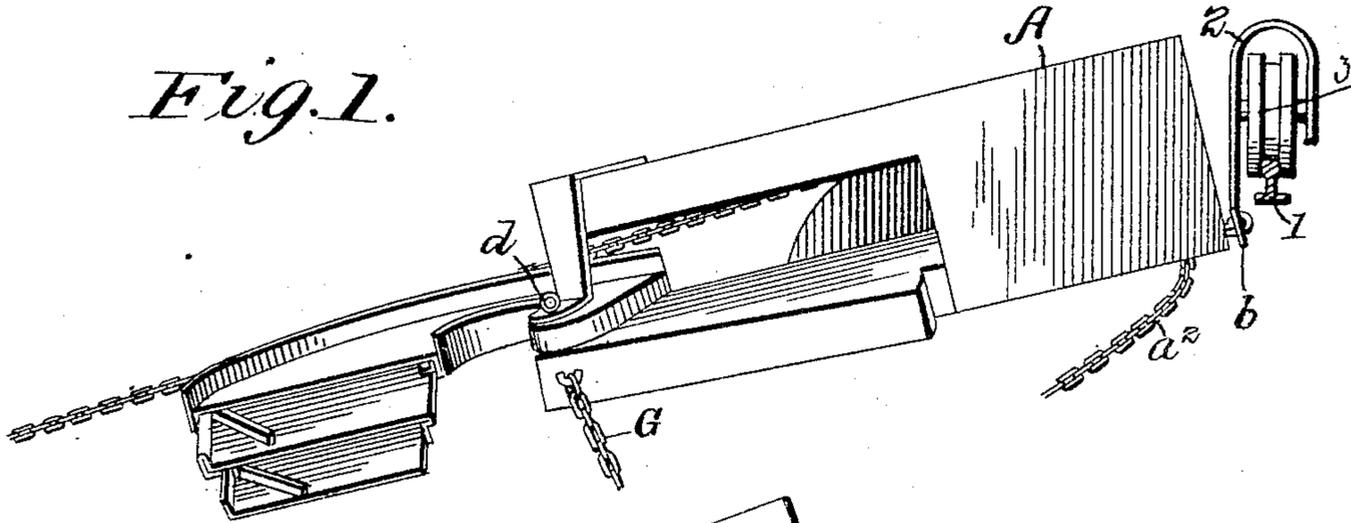
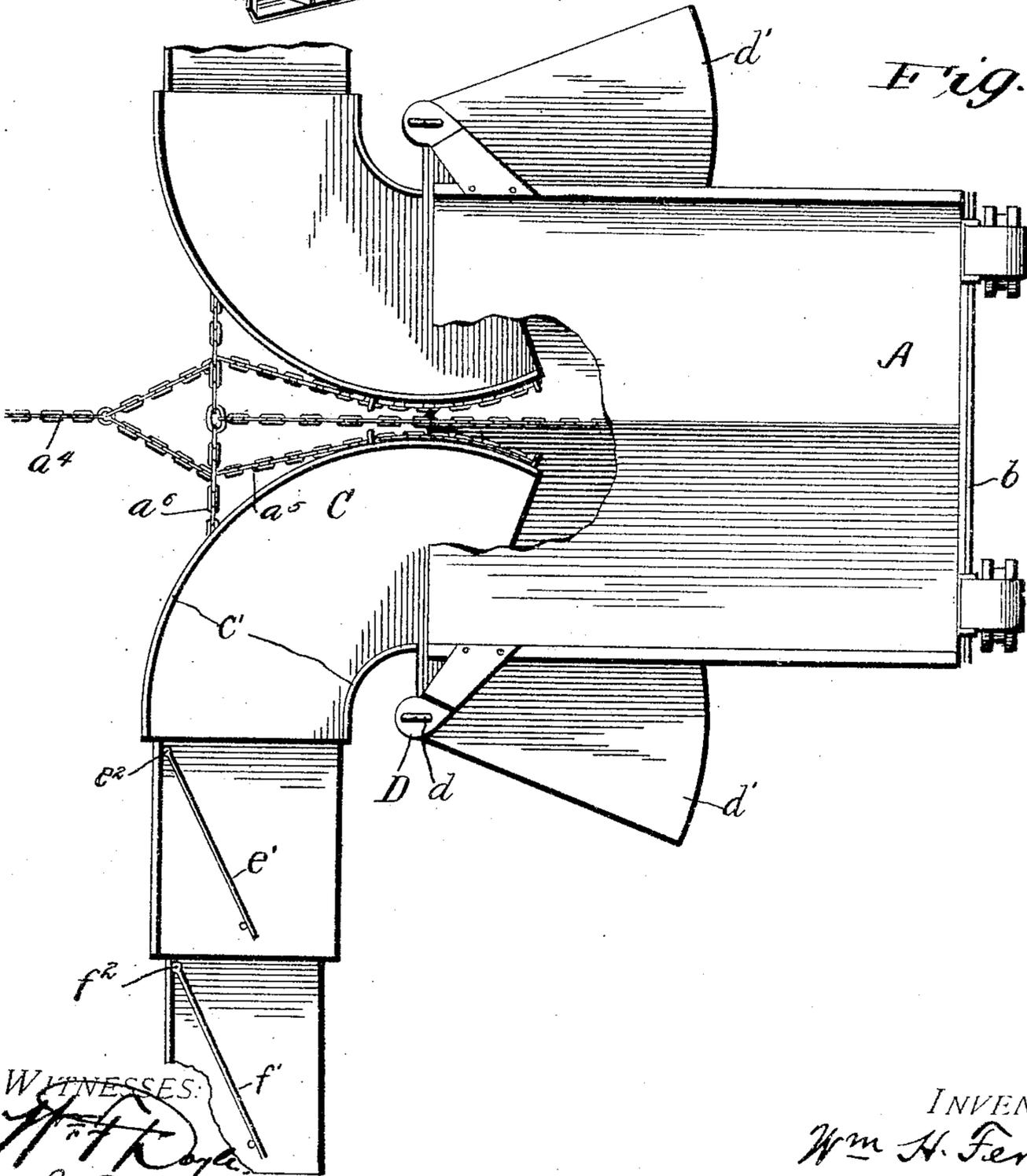


Fig. 2.



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2 SHEETS—SHEET 2.

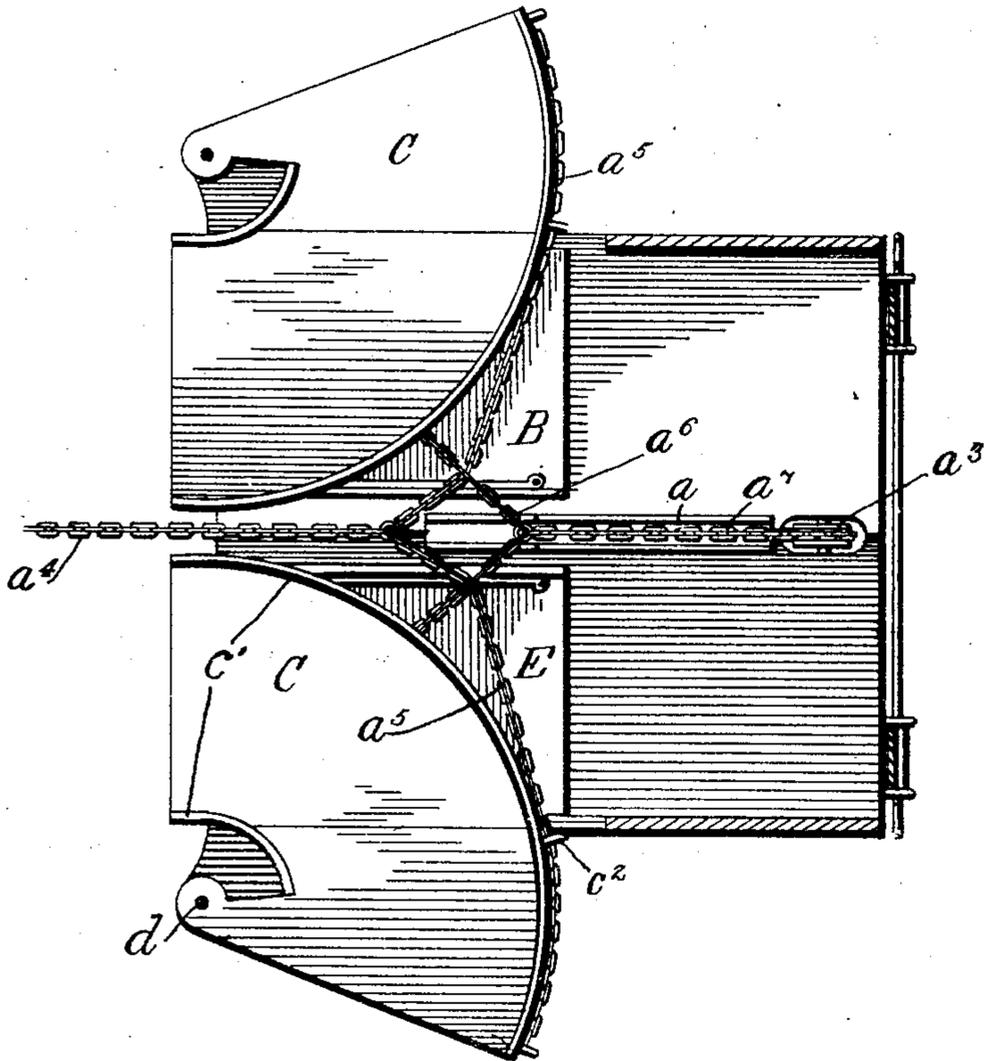


Fig. 3.

Fig. 4.

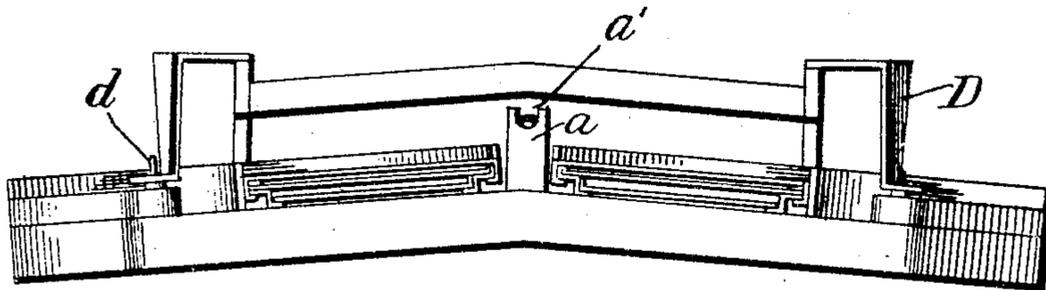
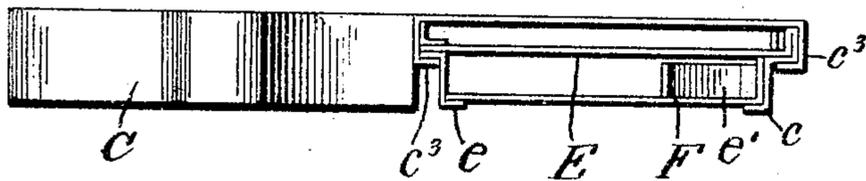


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. FERN, OF SCRANTON, PENNSYLVANIA.

LOADING DEVICE.

SPECIFICATION forming part of Letters Patent No. 779,699, dated January 10, 1905.

Application filed April 6, 1904. Serial No. 201,848.

To all whom it may concern:

Be it known that I, WILLIAM H. FERN, a citizen of the United States of America, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Loading Devices, of which the following is a specification.

This invention relates to the loading of coal, and particularly to a chute for carrying coal, coke, or other material into box-cars, provision being made for discharging the material near the ends of said cars, and provision is also made for adjusting the position of the parts in order that the coal may be discharged at points more remote from the ends of the cars as the car is filled.

It is also the purpose of this invention to provide means for adjusting the parts in order that the material may be discharged in a line with the main chute, where the center of the car is to be supplied with material.

Furthermore, it is the object of this invention to provide means for directing the material to the sides of the car as it travels along the chute and its extensions, thus insuring the filling of the car without undue handling or shoveling of the material.

Furthermore, an object of this invention is to provide means whereby the chute embodying the invention may be moved with relation to a series of lips for loading coal or other material, thus permitting the employment of a loader of this character successively with a series of lips and a series of cars.

Furthermore, an object of the invention is to provide a series of chutes so nested with relation to the traveling member that the space required for the device when not in use is minimized, provision being made for the projection and retraction of the chutes with relation to the main portion thereof.

Finally, an object of the invention is to provide a loader of the character noted which will possess advantages in points efficiency and durability, proving at the same time comparatively inexpensive to manufacture and maintain.

With the foregoing and other objects in view the invention consists in the details of

construction and in the arrangement and combination of parts to be hereinafter more fully set forth and specifically claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts throughout the several views, in which—

Figure 1 is a view in elevation, showing the rail which is supposed to be suitably supported and elevated with respect to loading-lips; but as the lip and the particular supporting means form no part of the present invention they are not shown in detail. Fig. 2 is a top plan view of the invention with the rail omitted. Fig. 3 is a horizontal sectional view showing the chutes in plan. Fig. 4 illustrates the end of the device with the chutes nested. Fig. 5 is a view in elevation, showing one of the chutes on a slightly-larger scale than elsewhere illustrated.

In the drawings, 1 denotes a suitable track; 2, the hanger-brackets, having wheels 3, which run on the track. The hanger-brackets are connected to the base A by means of the rod *b* being run through coinciding eyes of the hanger-brackets and base. As illustrated in Figs. 2 and 4, the top of the base is inclined from the center to its two sides in order to direct the material passing thereover to the chutes C. The base is in the form of a housing and it has on its floor a central longitudinal bridge *a*, with a grooved upper surface *a'* to act as a guide for the operating-cable *a*². It is observed that the term "cable" as employed herein is to embrace any flexible connection which may be utilized for the purpose of operating the device (to be hereinafter described) and that such cable may comprise a chain, a rope, a wire, or any other connection having the required flexibility. A sheave *a*³ is mounted in a hole in the bottom of the base, and the cable is run thereover to the outside in order that the operator may manipulate the cable by pulling thereon to adjust the parts in one direction. That portion of the cable extending rearwardly is preferably joined to that portion of the coupling marked *a*⁴, which extends from the forward end of the base. Suit-

able brackets D are secured to the base at the sides near the forward ends, the said brackets depending to a point near the bottom of the base and having apertures for the reception of the pivotal pins d . The bottom of the base has side extensions d' , which form supports for the chutes C when they are adjusted to the position shown in Fig. 3. It will be observed that these said chutes are curved and that the bottoms of the said chutes have lugs e , which receive the pivotal pins d . The chutes are also provided with flanges e' on each side in order to confine the material directed thereto. Branch cables a^5 diverge from the cable-sections a^4 and have their ends secured to the inner ends of the chutes C, the said chutes being provided with guides e^2 , through which the cables a^5 are run in order to confine the said cables with respect to the edges of the chutes C. Shorter cables a^6 have their ends connected to the end a^7 of the cable a^2 , and the outer ends of the cables a^6 are connected to the chutes C on their inner surfaces intermediately of the two ends, the point of attachment being determined by the position to be assumed by the chutes when in their operative position, as shown in Fig. 2—that is, the cables a^6 serve the double function of limiting the outward swing of the chutes C and serve to return the chutes within the base when a pull is exerted on the cable a^2 .

From the foregoing description and the illustration referred to it will be obvious that the chutes C are capable of being swung on their pivots d to stand at different angles with relation to the base. The manipulation of the chutes C is accomplished, as stated, through the medium of the cables a^2 and a^4 , the direction of pull determining the direction of movement of the said chutes.

Depending from the under surface of the outer ends of the chutes C are guides e^3 , in which are slidable the chute extensions E, and the extensions E have depending guides e , in which are slidable other extensions F, so that by the use of the two extensions E and F, as well illustrated in Figs. 1 and 2, the material may be conveyed to points remote from the base or by nesting the extensions to a more or less extent the distance of the ends of the extensions from the main chutes C may be varied. It is my purpose to provide the extensions E and F with guide-strips e' and f' , which are pivoted on the upper surfaces of the said extensions at the points e^2 and f^2 , and the said guide-strips may be adjusted diagonally of the said extensions for the purpose of deflecting the course of the material traveling over the said extensions, the said guide-strips serving to cause the material to travel transversely of the said extensions and accomplishing the result of filling the sides of a car with the material. The guide-strips may be held in their adjusted positions with relation to the extensions by any suitable means.

In moving the base along the track the cable a^2 may be utilized or a supplemental connection G may be secured to the base, depending therefrom within reach of an operator.

From an inspection of Fig. 3 it will be seen that the extension-chutes E when nested under the chutes C prevent the said chutes C from swinging on their pivots, as they would engage the side walls of the base, owing to the fact that they project beyond the curved edges of the said chutes C.

Having fully described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a loading device, a base adapted to travel to aline with and receive material from a chute or lip, chutes pivoted to the base, extensions slidable in the chutes, a cable, connections from the cable to the chutes and means whereby the cable limits the movement of the chutes in one direction.

2. In a loading device a suitable traveling base, a bridge centrally of the base, a cable run thereover and through the bottom of the base, chutes pivoted to swing on a plane parallel with the bottom of the base, connections from the cable to the chutes, whereby the said chutes are moved in one direction and limited in their swing, connections from the opposite end of the cable attached to the chutes for moving the said chutes in an opposite direction, extensions nested under the chutes and deflecting-strips on the upper surface of the extensions.

3. In a loading device, a suitable moving base having an oppositely-inclined upper surface, chutes pivoted to swing under the upper surface of the base, means for moving the said chutes in either direction, guides on the under surfaces of the chutes, and extensions nested thereunder, substantially as described.

4. In a loading device, a movable base, chutes pivoted thereto and extension-chutes carried by and slidable with relation to the first-named chutes and adapted to bind against the base when nested from movement, and cables for moving and limiting the movement of said pivoted chutes.

5. In a loading device, a movable base, chutes pivoted to the base, means for moving said chutes in either direction, and extensions nested thereunder.

6. In a loading device, a movable base, chutes pivoted to the base, means for moving said chutes in either direction, extensions nested thereunder, and guide-strips on the extensions.

7. In a loading device, a base, chutes pivoted to swing transversely of and on a plane approximately parallel with the plane of the base, means for moving said chutes, and extensions nested thereunder.

8. In a loading device, a base having an aperture near one end, a sheave mounted in the

aperture, a bridge on the base, a cable run thereon and through the aperture, passing over the sheave, chutes pivoted to the base extensions nested thereunder, and connections 5 from the chutes to the cable.

9. In combination, a track, brackets slidable on said track, a base carried by the brackets, chutes pivoted to the base, means for moving the chutes, and extensions nested thereunder.

10. In a loading device, a base, chutes pivoted to the base, a cable passing through the base and connections from the cable to the chutes.

11. In a loading device, a base, chutes pivoted to the base, a connection between the chutes, and cables attached to the connections to move the chutes in either direction.

12. In a loading device, a base, chutes pivoted to the base, a connection between the chutes intermediate their ends, a cable secured to the connections and passing through the base, a connection between the ends of the

chutes and a cable secured to the last-named connection.

13. In a loading device, a base, chutes pivoted to the base, flexible connections between the chutes, guides on the chutes for the connections, and cables secured to said connections.

14. In a loading device, a base having side extensions, and chutes pivoted to the base and adapted to be supported by the extensions when in an inoperative position.

15. In a loading device, a base, curved chutes, lugs on the chutes pivoted to the base; and extensions adapted to be nested under the chutes.

In testimony whereof I affix my signature, in the presence of two witnesses, this 4th day of April, 1904.

WILLIAM H. FERN.

Witnesses:

R. W. MORGAN,
WM. A. GAUL.