(No Model.)

3 Sheets—Sheet 1.

T. BECK.

CAR LOADING MACHINE.

No. 525,181. Patented Aug. 28, 1894.

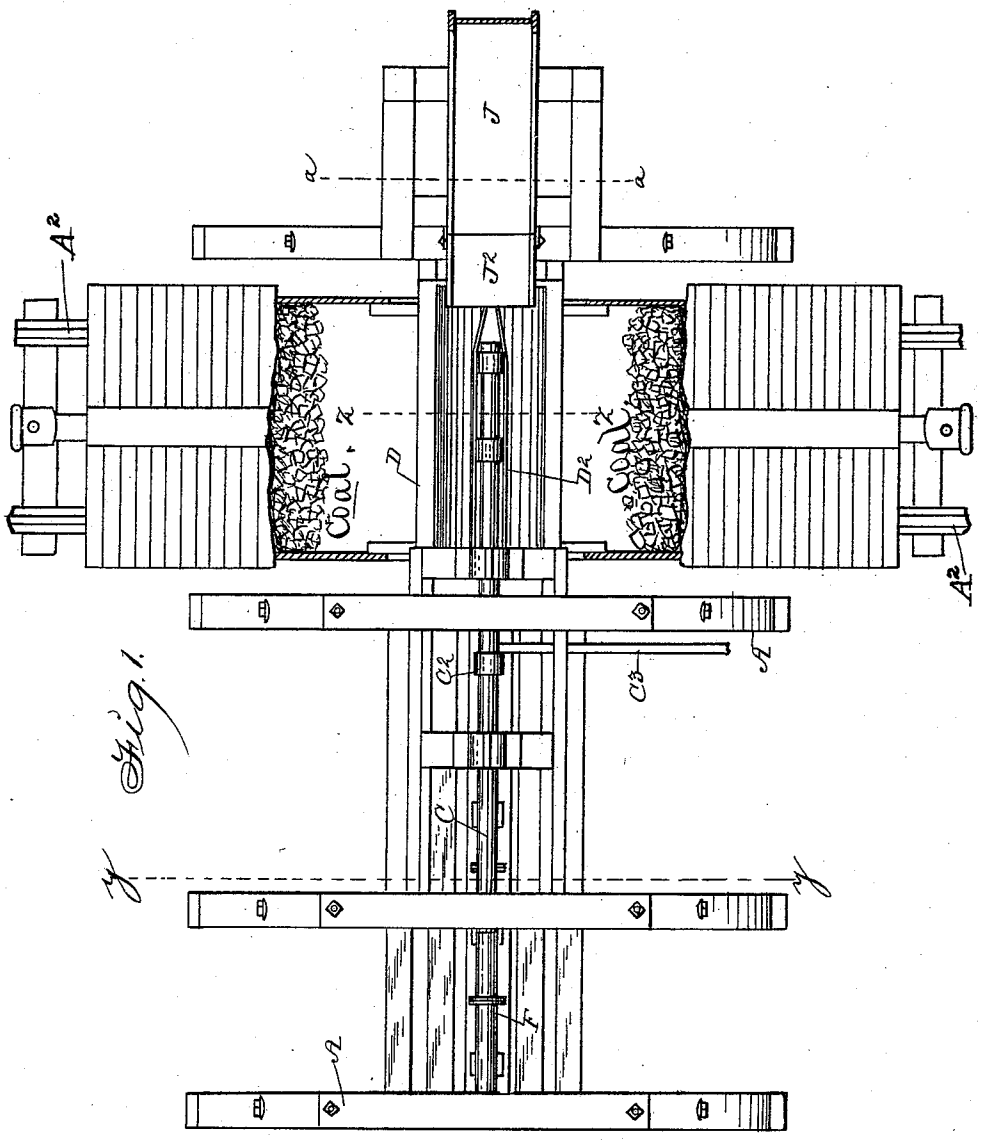


Fig. 1.

Witnesses:
R. H. Orwig.
C. F. Wilcox

Inventor: Thomas Beck.
By Thomas G. and J. Ralph Orwig.
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

T. BECK.

CAR LOADING MACHINE.

No. 525,181. Patented Aug. 28, 1894.

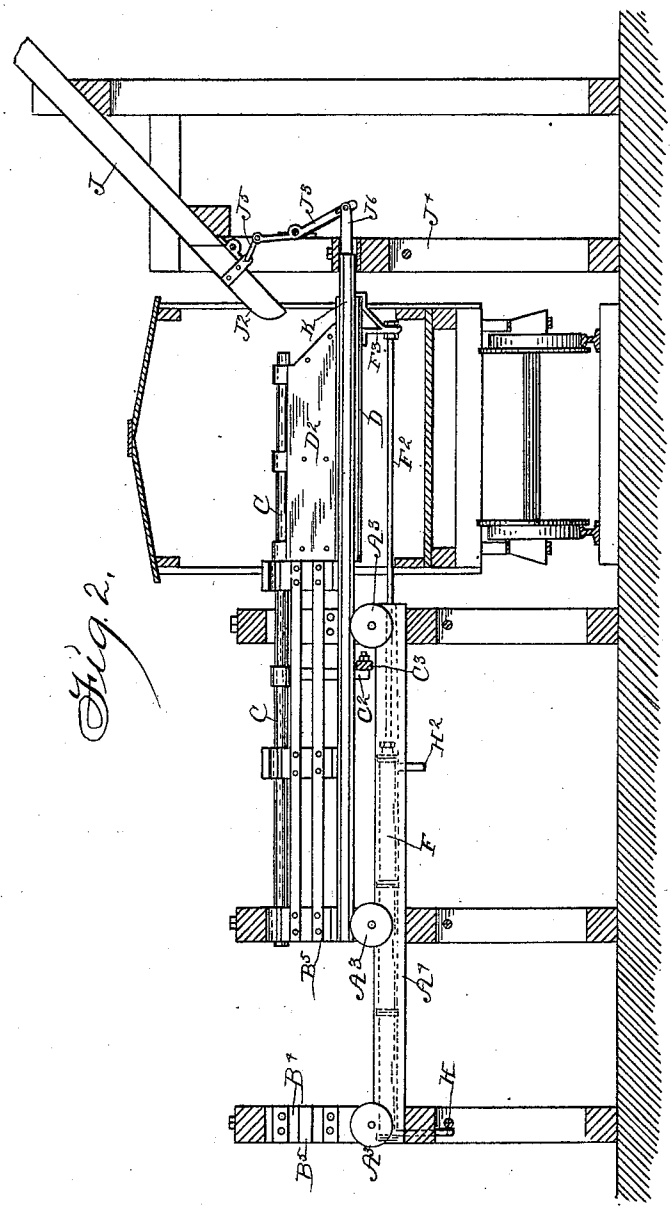


Fig. 2.

Witnesses:
R. H. Orwig.
C. F. Wilson

Inventor: Thomas Beck,
By Thomas G. and J. Ralph Orwig,
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 3.

T. BECK.

CAR LOADING MACHINE.

No. 525,181. Patented Aug. 28, 1894.

Fig. 3.

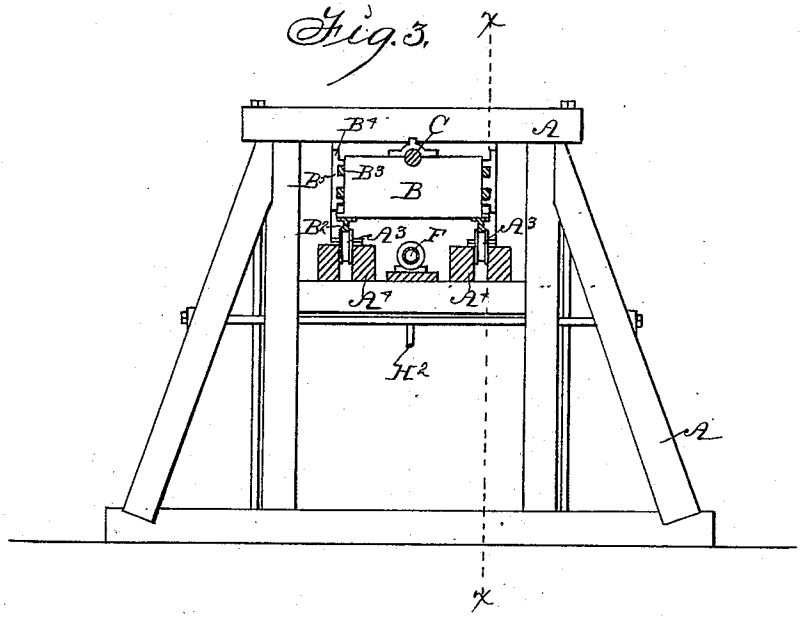


Fig. 4.

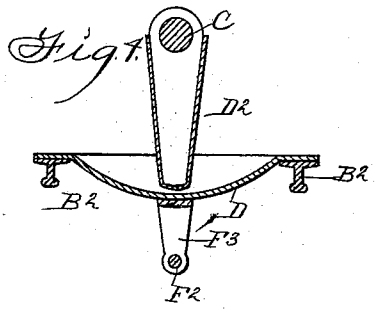
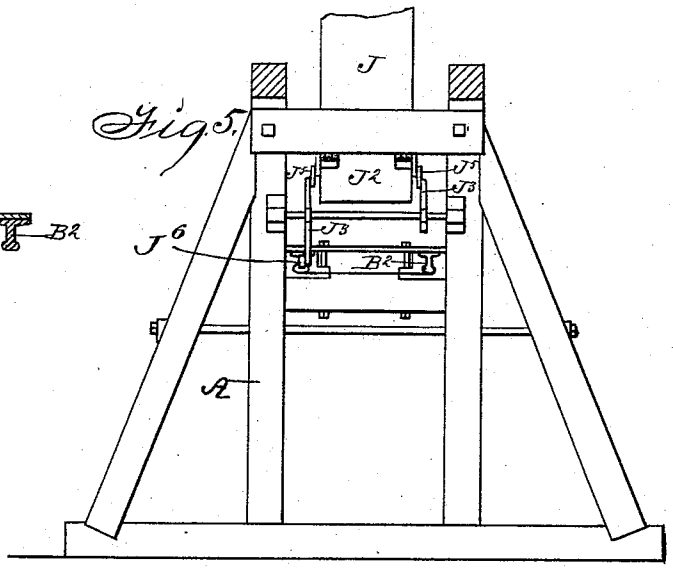


Fig. 5.



Witnesses:
R. H. Orwig,
C. F. Wilcox.

Inventor: Thomas Beck,
By Thomas C. and J. Ralph Orwig,
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS BECK, OF DES MOINES, IOWA.

CAR-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 525,181, dated August 28, 1894.

Application filed March 31, 1894. Serial No. 505,975. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BECK, a citizen of the United States, residing at Des Moines, in the county of Polk and the State of Iowa, have invented a new and useful Car-Loading Machine, of which the following is a specification.

The objects of this invention are, first, to provide a machine adapted to be placed in the central portion of a railway car to receive coal, grain, or other like substances that may be fed thereto through a chute, and provided with means whereby the distributing device may be extended into position in a car or moved outwardly therefrom, and a further object is to provide means whereby the end of a chute leading to the said car may be automatically elevated when the distributing or loading device is in position in the car, and automatically drop into a position where the car will not engage the same when the distributing device is withdrawn from the car.

With these objects in view, my invention consists, first, in the construction and arrangement of a device adapted to be placed in the central portion of a car to receive coal, grain, or like substances, and so arranged that when vibrated the said substances will be thrown toward the ends of the car.

My invention consists further in the construction, arrangement and combination therewith of mechanism whereby the said distributing device may be placed in position in the car, or withdrawn therefrom, and my invention consists further in the arrangement and combination with the device of a chute having its end portion hinged and means connected therewith whereby said hinged portion may be automatically swung into position to lead into the car when the distributing device is placed therein or to swing downwardly so as not to engage the car when the said device is withdrawn.

My invention consists further in certain other details of construction, arrangement and combination of parts, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of the complete device placed in a car as required in practical use, a portion of the top and sides of the car being broken away to show the construction of certain parts. Fig. 2 is a transverse sectional view of the complete apparatus, and also of the car, taken through the line X—X of Fig. 3. Fig. 3 is a transverse sectional view through the line Y—Y of Fig. 1. Fig. 4 is a transverse sectional view of the distributing device through the line Z—Z of Fig. 1. Fig. 5 is a transverse sectional view through the line *a*—*a* of Fig. 1.

Referring to the accompanying drawings the reference letter A is used to indicate a suitable raised frame extending at right angles to a railway track A^2 and provided with the flanged rollers A^3 adapted to move longitudinally of the frame between the blocks A^4 as clearly shown in Fig. 3.

B indicates a frame or carriage having the tracks B^2 fixed to its lower surface adapted to enter the flanged rollers A^3 and provided with tongues or strips B^3 at its sides adapted to enter the grooves B^4 formed in the plates B^5 located in the frame A at the sides of said frame B so as to allow said frame or carriage to move longitudinally in the frame A but in no other direction.

C indicates a rock shaft mounted in suitable bearings in the top of the frame B extended longitudinally thereof and projecting forwardly beyond the central portion of its end.

C^2 indicates a crank arm fixed to and projecting downwardly from the shaft C, and C^3 is a pitman connected with the lower end of said crank and adapted to have a reciprocating motion imparted to its outer end to operate the said shaft.

D indicates a receiving pan bowed downwardly in its central portion and having its edges supported by the tracks B^2 and extended longitudinally of the frame or carriage B beyond one end thereof and of approximately the same length as the width of a car.

D^2 indicates a wing or shovel fixed to and projecting downwardly from the end of the shaft C directly above the pan D and of approximately the same length. Its lower end projecting into close proximity to the bottom of the said pan. It will be readily seen that when solid substances are placed upon the pan D, if a reciprocating motion is imparted to the pitman C^3 the wing or shovel D^2 will be

vibrated in such a manner as to throw said substances outwardly toward the ends of the car and it will also be obvious that the frame or carriage B and also the pan and said wing or shovel may be moved longitudinally so as to enter a car or be removed therefrom.

F indicates a cylinder of a length corresponding to the length which it is desired to give to the movement of the carriage or frame B and which is located beneath the said frame or carriage and extended parallel therewith. F^2 indicates a piston rod inserted in said cylinder and extended forwardly therefrom to the outer end of the pan D, to which it is connected by means of the bracket F^3.

H and H^2 indicate steam pipes arranged to enter the opposite end of the cylinder F. By this arrangement it will be readily seen that if steam were admitted through the pipe H^2 assuming the device to be in the position shown in Fig. 2, the piston F^2 would be forced rearwardly and thereby carry the entire frame or carriage D rearwardly and steam admitted in the pipe H would force the same forwardly or outwardly.

J indicates a suitable chute leading downwardly from a suitable source of supply to a point in proximity to the tracks and directly opposite the frame A. J^2 indicates the lower section of the said chute hinged thereto and capable of swinging downwardly into a vertical position or of being swung upwardly so as to enter a car on the said track, as clearly shown in Fig. 2.

J^3 indicates a lever pivoted to a frame J^4 located directly beneath the said pivoted section of the chute and J^5 is a link connected with one end of the said lever and also with the said section J^2.

J^6 indicates a rod extended horizontally through an opening in the frame J^4 so that when said rod is pushed downwardly from the tracks the section J^2 will be elevated. To provide for elevating this section automatically when the distributing device is run into a car, I have extended a rod K forwardly beyond the lower end of the pan D to engage the rod J^6.

In practical operation a car is run on the track A with the doors at its sides in proximity to the frame or carriage B. Steam is then admitted into the pipe H and the entire frame or carriage B moved forwardly until the pan D enters the car and the rod K has engaged the rod J^6 so as to throw the chute section J^2 upwardly to direct the flow of coal or grain into the pan D. A reciprocating motion is then imparted to the pitman C^8 and the wing or shovel D^2 vibrated to throw the substances outwardly toward the ends of the car and when the car is filled, by admitting steam through the pipe H^2, the distributing device may be drawn out of the car and the chute section J^2 dropped into a horizontal position so as to not be engaged by the sides of the car when moved.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States therefor, is—

1. An improved automatic car loading machine, comprising a suitable frame adapted to be moved at right angles to a railroad track, a curved pan fixed to said frame and adapted to enter a car on said track and receive coal from a chute, a rock shaft mounted in suitable bearings in said frame, a shovel having its top fixed to said shaft and its lower edge in proximity to the said pan so that, when reciprocated, the contents of the pan will be thrown straight outwardly from both sides thereof, an arm fixed to said rock shaft and projected downwardly therefrom and a pitman pivotally attached to said arm for the purposes stated.

2. An improved automatic car loading machine comprising a suitable frame adapted to be moved at right angles to a railroad track, a pan fixed to the forward end of said frame adapted to enter a car and receive coal or the like from a chute, a rock shaft mounted in suitable bearings in said frame a wing or shovel fixed to the outer end thereof and extended downwardly into proximity to the said pan, an arm fixed to said shaft and extended downwardly therefrom and a pitman pivotally attached to said arm a suitable chute located at the opposite side of the track, a chute section connected with the lower end of said chute and adapted to be extended into a car, mechanism adapted to be actuated by said sliding frame when it is placed in a car to extend the chute section, a steam cylinder beneath the sliding frame fixed to a stationary support, a piston therein, a piston rod extended forwardly therefrom and connected with the said sliding frame and means for admitting steam into either end of said cylinder substantially as and for the purposes stated.

3. In combination with a suitable distributing device arranged to slide at right angles to a railway track and in and out of a car thereon, of a chute having its lower section hinged and adapted to be swung into a car to discharge into a distributing device in the car, a lever pivoted to a suitable support below the said hinged section, a link connecting said hinged section with the said lever and a projection from the aforesaid distributing device adapted to engage the lower end of the said lever when the distributing device is run into a car, for the purposes stated.

4. An improved distributing device comprising a suitable frame having flanged rollers mounted thereon to be capable of moving longitudinally of the frame, a suitable carriage having tracks fixed to its lower surface adapted to enter said flanged rollers and projecting beyond the forward ends thereof, a sheet metal pan fixed to said forward ends, guides at the sides of said carriage arranged to allow a longitudinal motion of the carriage and restricting its motion in all other directions, a rock shaft mounted in the top of said carriage,

a crank projecting downwardly therefrom, a pitman pivoted to the lower end of said crank, a wing or shovel fixed to the forward end of said rock shaft to extend in close proximity to the said pan, a steel cylinder located in the said frame and of a length corresponding to the length which it is desired to extend the distributing device into a car, a piston inserted therein and connected with the outer end of the said pan and two supply pipes leading into the opposite ends of said cylinder and connected with a suitable source of steam supply, an inclined chute leading toward the said pan from the opposite side of the track, a hinged section at its lower end, a lever pivoted in a suitable support below said hinged section, a link connecting the top of said lever and the bottom of the hinged section, a rod extended through a suitable opening below the said hinged section and pivotally connected with the lower end of the said lever and a projection extended forwardly from the aforesaid pan adapted to engage said rod when the pan is placed in position in a car, all arranged and combined substantially in the manner set forth and for the purposes stated.

THOMAS BECK.

Witnesses:
J. RALPH ORWIG,
THOMAS G. ORWIG.