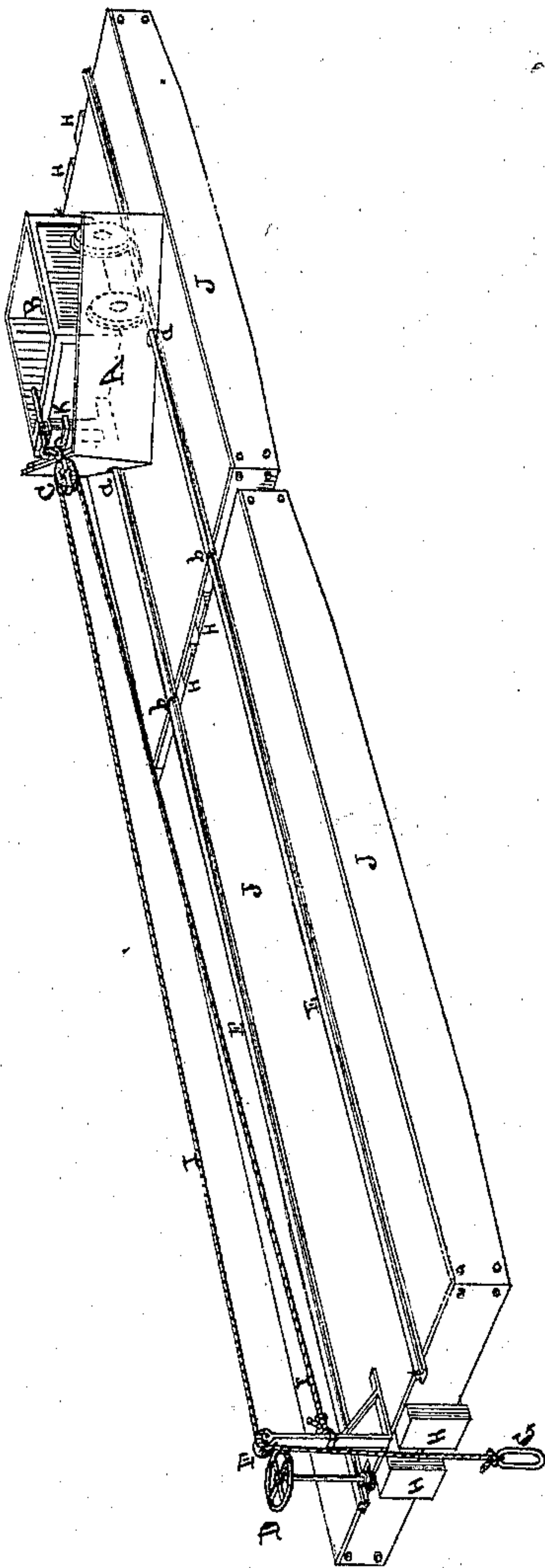


**G. S. CALDWELL.**

## Machines for Unloading Flat-Cars.

No. 138,476.

Patented May 6, 1873.



David Knight  
Eliot Marome } WITNESSES:

INVENTOR, *Geo. S. Caldwell*  
by *J. Wright his atty.*

# UNITED STATES PATENT OFFICE.

GEORGE S. CALDWELL, OF AUBURN, NEW YORK.

## IMPROVEMENT IN MACHINES FOR UNLOADING FLAT CARS.

Specification forming part of Letters Patent No. **138,476**, dated May 6, 1873; application filed September 4, 1872.

*To all whom it may concern:*

Be it known that I, GEORGE S. CALDWELL, of the city of Auburn, Cayuga county, New York, have invented a Machine for Unloading Platform-Cars, of which the following is a specification:

My invention relates to a machine for unloading gravel, dirt, or other material, from the ordinary platform-cars used upon railroads.

The drawing represents an elevation, showing the machine upon its track, as seen diagonally from the front.

A is the front part of the machine, which is triangular in shape. I form the sides thereof of plank, and so arranged as to meet and form an angle of about forty-five degrees at their junction, in front; but I do not intend to confine myself to any particular angle, as that may be varied as desired; the more acute the angle the less will be the resistance in removing the load. When it is intended to have the load equally divided, one-half thereof to be deposited upon each side of the car, in that case, these sides of the triangular parts of the machine should be made of equal lengths, so that the front point thereof will pass along and over the center line of the platform of the car, and thus divide its load in two equal parts; but if it shall be desired to divide the load unequally, then the sides of this triangular part should be made of unequal lengths, as it is obvious that if either side shall be lengthened, the other must be correspondingly shortened, and thus vary the proportion of the load, which will be discharged from the respective sides of the platform. In case it should be desired to discharge all the load over one side of the platform, the front part of the machine should be formed of one straight piece, made to stand oblique to the frame, so as to remove the load all in one direction, and thus discharge it over one side only of the platform. The length of these side pieces must necessarily be such as that they will sweep over the whole width of the platform. They may be sheathed with iron, or, if made of hard wood, a strip of iron upon the lower part thereof, extending down sufficiently far so as to sweep as near as practicable to the surface of the platform without coming in contact therewith, will answer. *a a* are notches formed in

these side pieces, so as to pass over the rails *E E* and allow the lower edges of the side pieces to be extended below the top of said rails. B is the rear part of the machine, made square in form, with sides about two feet high, within which any heavy material may be placed so as to overbalance the front part of the machine and prevent the side pieces of the triangular part from touching upon the iron rails, or upon the platform of the cars when in operation. The frame of the machine should be substantially constructed, to carry the triangular front part thereof, and to resist the strain caused by the pressure of the material to be removed. This machine, when thus constructed, I place upon two or more pairs of wheels, so constructed as to run upon the rails *E E*, and with flanges to keep them thereon—in other words, shaped like the ordinary railroad-car wheels. *E E* are iron rails, for which I use the ordinary railroad-iron rails. These rails are laid lengthwise of the platform of the car and parallel with the center line thereof. They should be of such length so as to extend beyond the ends of the platform so far as to reach within about a quarter of an inch of a point in a line perpendicular to the face of the bumper-blocks *H H* of the car, as shown at *b b*, so that, when the bumper blocks of two connected cars meet, the ends of the rails upon these cars will reach to within about half an inch of each other, thus forming a continuous track over the whole train, however numerous the cars composing it. D is the key used for winding up the brake, and is so constructed and arranged that it may be removed at pleasure, and thus leave an unobstructed space over which the machine may traverse. F is a standard firmly fastened upon the forward end of the forward car of the train. Upon the top of this standard a roller may be placed, over which the rope by which the machine is drawn forward passes. This roller is placed at such height above the platform of the car so as to correspond in height with the pulley C, through which the rope passes, in order to allow the draft to be in a line parallel with the upper surface of the platform, and thus prevent the drawing down of the front end of the machine when in operation. I I is the rope by which the machine



is drawn forward. One end of this rope is firmly affixed to the standard F, and the rope is extended thence to the pulley C, through which it is passed, and is returned thence to and over the roller upon the top of the said standard, having a coupling-link, G, attached to the other end thereof for the purpose of being used to connect the rope with the locomotive. The object of thus arranging the rope is to pull the cars toward each other at the same time that the machine is drawn forward, and thus bringing the bumper-blocks of connecting cars in contact, so that the ends of the iron rails upon those adjoining cars shall approach as near as practicable toward each other, and at the same time preventing the cars from moving forward during the process of unloading. K is an apparatus firmly secured to the upper part of the front of the machine, to which the pulley C is coupled. This apparatus is so arranged as that, by pressing down upon a lever, the pulley C is immediately uncoupled, and the forward movement of the machine thereby arrested at the pleasure of the operator. This apparatus is the same as that ordinarily used upon canal-boats for casting off the tow-line. J J is the platform of an ordinary platform-car.

Having thus fully described my invention, I will now state the operation thereof. The machine being placed upon the rails at the rear end of the rear car of the train, and the coupling-link G being connected with the locomotive in the usual manner, the locomotive, having been first detached from the train, is moved forward, and as the locomotive moves it draws upon the rope I I. The first effect of this will be to draw the cars composing the train together until the bumper-blocks come in contact, and then the machine will be moved forward, and as it is moved forward the wings or sidepieces of the front part will press the gravel or other material upon the platform toward and over the sides thereof, and thus unload the cars. If it should so happen that any of the rails upon any one of the cars should, by reason of the position of the car upon the railroad track, not be in line with the rails upon the cars immediately connected therewith, and

over which the machine was passing, it is obvious that when the front part of the machine should be sufficiently advanced so that the lower part of the side thereof should press against the rail with which it shall first come in contact, it will press against the side of that rail and force that end of the car in the proper direction until the rails thereon shall be brought in line with those upon the car over which the wheels of the machine are passing, and thus enable the machine to pass onto that car. When the machine shall have reached so far as to have removed the material from the entire train, by uncoupling the pulley C its forward movement will be immediately arrested, and it may then be moved by hand—which is easily done by two men—to the place at the rear of the train from which it started, and the train is then ready to be taken by the locomotive for another load; and thus a train of twenty ordinary-sized platform-cars may be unloaded within the space of five minutes, which, if done by hand, would require the labor of eighty men for the space of at least forty minutes.

Having thus described my invention and the operation thereof, what I claim as my invention is—

1. In combination with one or more cars for carrying earth or other material, the scraper, with wheels thereunder upon which it is supported and carried, and the rails or guides for guiding and directing said scraper over or upon said cars, as and for the purpose described.

2. In combination with a series of cars for carrying earth or other material, having guiding-rails with their ends extended so as to form a permanent and continuous track throughout the series of cars, with a scraper having supporting-wheels to run and be guided on said rails, as and for the purpose described.

3. The combination of the attachment k with the scraper, as and for the purpose described.

GEO. S. CALDWELL.

Witnesses:

DAVID WRIGHT,  
EDW. C. MARVIN.