2 Sheets--Sheet 1.

J. BYERLY.

Apparatus for Loading Carts.

No. 140,884. Patented July 15, 1873.

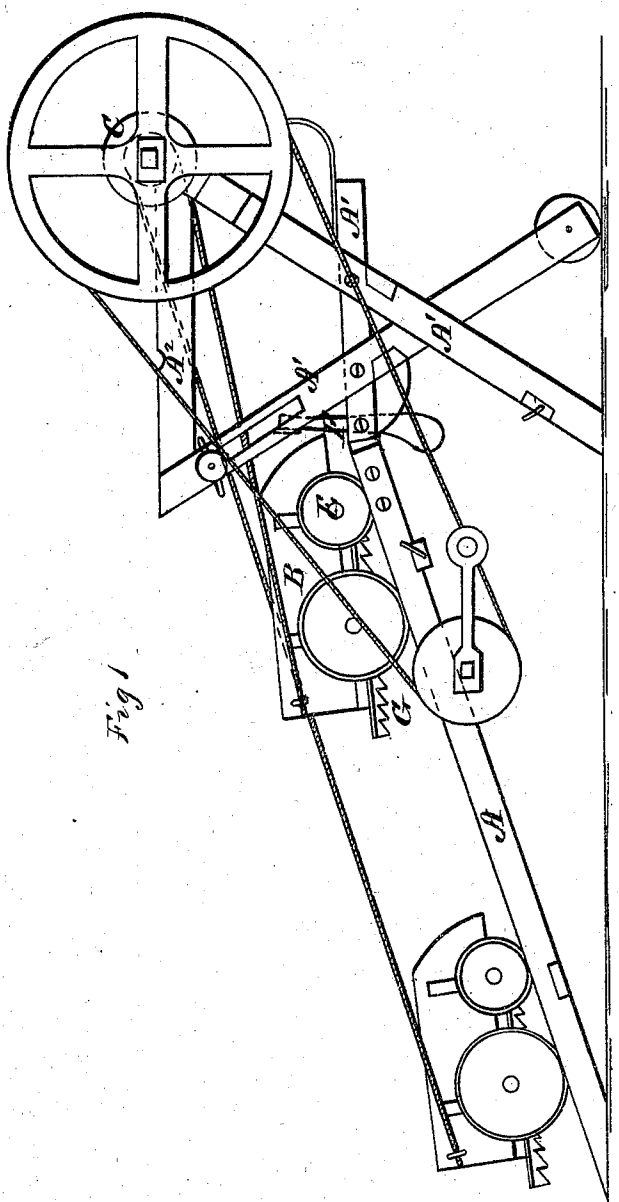

Fig 1

Witnesses,
P. L. Durand
A. H. Bigelow

Inventor
Jacob Byerly,
By his Attorney,
T. H. Opperman.

2 Sheets--Sheet 2.

J. BYERLY.

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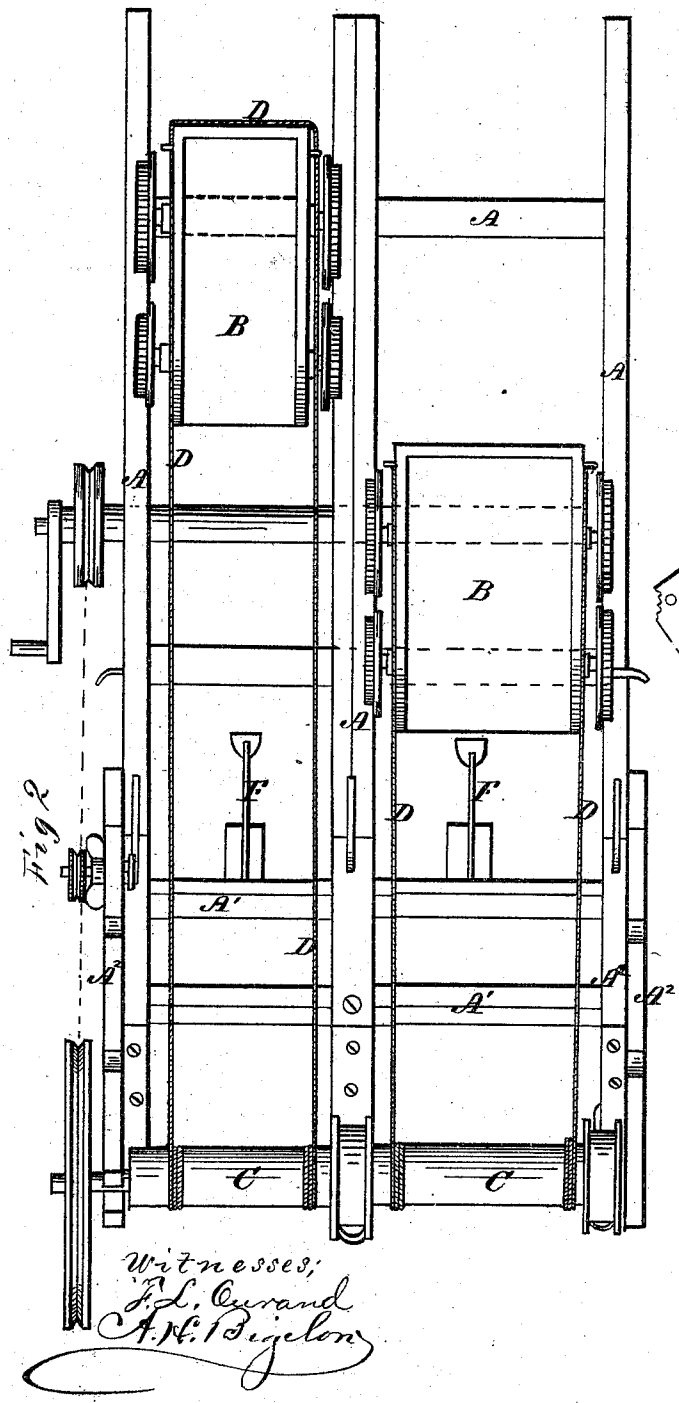

Fig 2

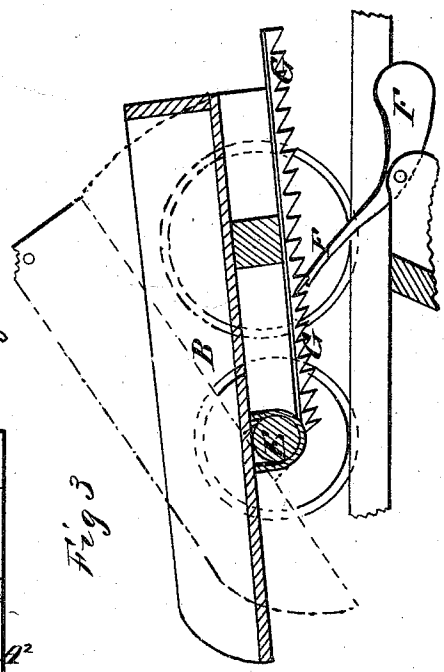

Fig 3

Witnesses;
F. L. Durand
A. N. Bigelow

Inventor
Jacob Byerly,
By his attorney,
T. N. Upperman

UNITED STATES PATENT OFFICE.

JACOB BYERLY, OF FREDERICK, MARYLAND.

IMPROVEMENT IN APPARATUS FOR LOADING CARTS.

Specification forming part of Letters Patent No. **140,884**, dated July 15, 1873; application filed June 26, 1873.

To all whom it may concern:

Be it known that I, JACOB BYERLY, of Frederick, in the county of Frederick and State of Maryland, have invented certain new and useful Improvements in an Apparatus for Loading Carts, which improvements are made upon the machine described and shown in the Letters Patent granted to B. G. Fitzhugh, under date of April 15, 1873, No. 137,768, and in which Letters Patent I am interested by assignment duly recorded in the transfers of patents, United States Patent Office; and I do hereby declare that the following is a full, clear, and exact description of my said invention, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a side elevation of a machine embracing my improvements; Fig. 2, a plan or top view thereof; and Fig. 3, a detached view of one of the cars and its pawl, the dotted lines showing the position it occupies when being dumped.

Reference is hereby made to the Letters Patent hereinbefore referred to for a description of the general characteristics of the machine. I shall, therefore, proceed to describe only the improvements which I have made.

My invention consists, first, in the use of weighted pawls, so located and arranged on the frame of the machine as that they engage automatically with the racks underneath the cars to hold the latter on the dumping-platform, and, when said cars are dumped, as that they are released therefrom by the act of dumping, in the manner and for the purpose to be hereinafter described. My invention further consists in the arrangement of the drawing-ropes in such a manner as that they are continuous and have play upon the body of the cart, so that preponderance of weight in the load on one side or the other may be compensated for by the shifting of the rope on the car-body, as will be more fully set forth.

A represents the timbers of the rear frame of the machine, and A^1 the forward timbers thereof, said timbers serving, in part, as ways, on which run the cars B. The forward frame is braced by a horizontal timber, A^2, on which the pulley-shaft C is mounted in suitable bearings. This arrangement of the forward frame of the machine admits of the adjustment of the pulley-shaft C toward the rear or front, according to the character of the earth being dumped.

When the machine is in operation a chain is affixed to one of the timbers A of the rear frame, and to one of the cross-beams of the forward frame A^1, in order to firmly brace the two together at any desired angle, and to prevent the machine from being carried over as the loaded cars are run onto the dumping-platform.

The apparatus may be worked by hand-power, or by the moving off of the loaded cart, as fully described in the Letters Patent before referred to; but inasmuch as this constitutes no part of my invention it need not be further explained.

It has been demonstrated, practically, that instead of separate ropes connected to either side of the car-body and to the pulley-shaft, a single continuous rope is much to be preferred, as such an arrangement compensates for the preponderating weight of the load on one side or the other of the cart. I have, therefore, shown at D such an arrangement of rope passing from the pulley-shaft C around the car-body and back again to said shaft, the said rope passing over pulleys at the rear of the car to adjust itself to draw in a line with the ways on which it runs, whatever may be the manner in which the car is loaded, and whether the rope be coiled evenly on the pulley or not.

Another feature of my improvement is that the cars B are made to dump upon the forward axles E thereof as the pivotal point, instead of carrying up with them their trucks, which required much power and necessitated a strain upon the machine. In addition to this disadvantage, when the cars had been dumped, the wheels thereof would oftentimes not find their proper position upon the ways, and the cars would have to be adjusted by hand. By my improvement the wheels do not leave the ways at all, and the strain upon the machine is greatly lessened because of having to dump the car-bodies only.

Instead of the detents described in the Letters Patent cited, which serve to hold the cars on the dumping-platform, I employ pawls F of

such construction, or so weighted as that they engage automatically with the racks G underneath the cars, and are automatically released therefrom after the cars have been passed onto the dumping-platform and while in the act of dumping. This arrangement dispenses with an attendant to pull the ropes actuating the detents, which requires the time not only while the car is being dumped, but after and until it has passed on the ways below said detents.

These several improvements I have found to remove the objections which existed against the machine in practical operation, inasmuch as there is no necessity for the employment of an attendant, except where hand-power is used, the machine, as an entirety, being strictly automatic in its operation.

Having described my invention, I claim—

1. The weighted pawls F F, in combination with the racks G on the bottom of the cars, arranged and operating as described.

2. The continuous drawing-ropes *d*, arranged and operating in the manner and for the purpose described.

3. The arrangement of the several parts composing the cart-loading apparatus, herein described and shown, viz, the rails A A^1, forming the ways on which the wheels of the cars run, the pulley-shaft C having the continuous ropes, the cars B held and released automatically by the weighted pawls, the whole operating substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name.

JACOB BYERLY.

Witnesses:

EDM. F. BROWN,

A. H. BIGELOW.