(No Model.)

A. F. THAYER.

CAR DUMPING APPARATUS.

No. 404,447. Patented June 4, 1889.

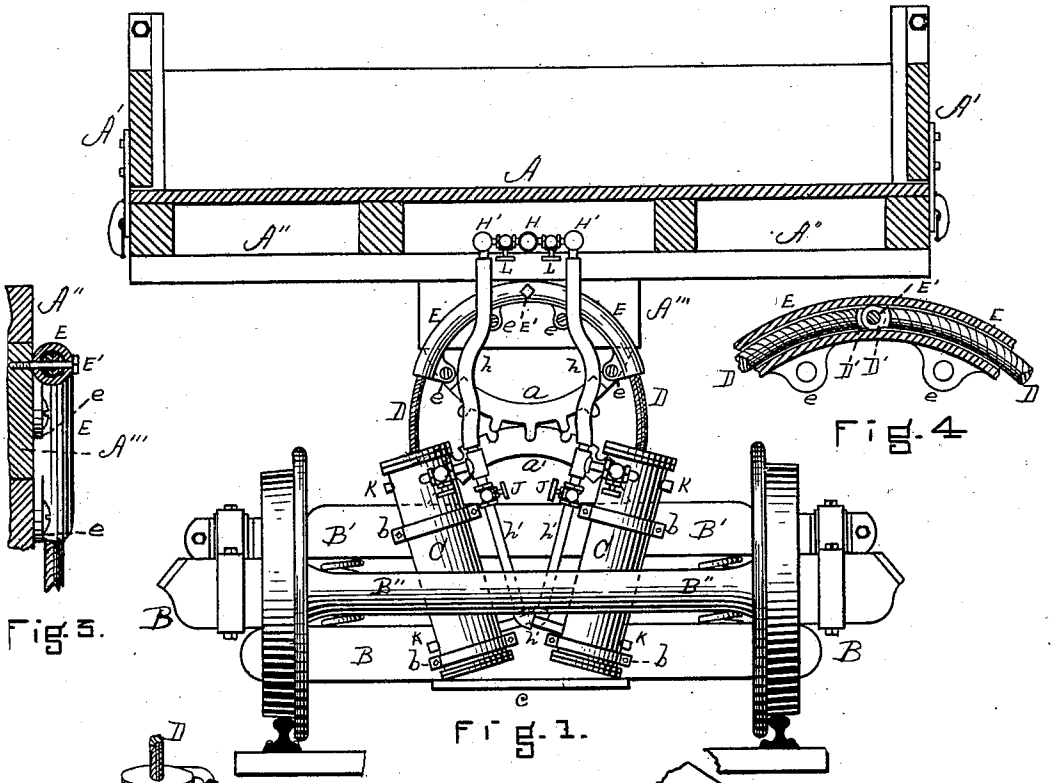


Fig. 1.

Fig. 3.

Fig. 4.

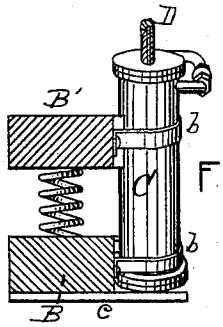


Fig. 5.

Fig. 2.

WITNESSES.

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CAR-DUMPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 404,447, dated June 4, 1889.

Application filed March 11, 1889. Serial No. 302,861. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. THAYER, of Maple Hill, in the county of Wabaunsee and the State of Kansas, have invented new and useful Improvements in Car-Dumping Apparatus, of which the following is a specification.

This invention relates to that class of car-dumping apparatus in which the cars are tipped and their contents dumped by the employment of steam, compressed air, or analogous power located, preferably, in the locomotive drawing the train; and it consists in certain improvements below described, whereby the operation is performed with greater certainty and is generally facilitated and made practicable, especially as applied to cars with whole or solid bottoms.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a cross vertical section of a dumping-car provided with my device, which, together with the truck, is shown in elevation. Fig. 2 is a similar view showing the device in operation, a portion of the car and of one of the cylinders being represented as broken out. Fig. 3 is a vertical section taken centrally longitudinally with the car, showing the bolt which passes through the looped ends of the flexible piston-rods below described. Fig. 4 is a longitudinal section of a portion of the curved tube below described with the flexible piston-rods meeting and secured together therein. Fig. 5 is a detail showing the method of fastening a cylinder to the truck.

A represents the floor of a dumping-car. A′ A′ are the swinging sides, and A″ a cross-bar secured to said car.

B is the truck, of which B′ is the bolster and B″ the axle, all constructed substantially as usual.

a and *a′* are respectively the upper and lower castings constituting a dumping rocker, (not new in this invention,) said castings being supported in the ordinary manner, the upper one by a block A‴, rigidly secured to the car-body, and the lower one by the bolster of the truck.

C C are a pair of steam or air cylinders secured to the truck between the bolster and the axle in any suitable manner, in this instance by means of the metallic straps *b*, and resting upon a plate *c*, bolted to the truck. The exact relative position of these cylinders is not material, the angles shown in the drawings being perhaps as convenient as any. In each of these cylinders plays a piston C′, (see broken-out portion of Fig. 2,) said piston being provided with a flexible piston-rod D. This piston-rod is made of some material which is flexible enough to adjust itself to any degree of curvature which may occur during the tipping or dumping of the car, the material shown in the drawings being a wire cable. These piston-rods are provided at their outer ends with loops D′ and extend into a curved tube or frame E, secured to the block A‴ by means of the clamps *e*. These flexible piston-rods enter the tube E at its opposite ends, and their looped ends D′ meet in the center of the tube and overlap until their holes are coincident, and a bolt E′ passes through said tube and through said looped ends, as shown in Figs. 1, 3, and 4.

H is a main supply pipe or tube, to which motive power, in the shape of steam, compressed air, or analogous material, is introduced from the engine, which may be a stationary one or the locomotive which draws the train.

H′ H′ are branch pipes, and *h h* are flexible tubes connecting the branch pipes with the supply-pipes *h′ h′*, which connect with the cylinders above and below the pistons.

J J are stop-cocks in the pipes *h′*.

K K are outlets in the cylinders.

L L are the cut-offs to the branch supply-pipes *h′ h′*.

It is evident that by means of this apparatus and by suitably adjusting the cock and shut-off J L power in the form of steam or compressed air may be applied through the pipes and tubes H H′ *h h′* to the pistons C′, so as to raise one and simultaneously lower the other and thereby tip the car to the side desired, said tipping being accomplished by the flexible piston-rod D, connected with the piston which is being lowered, pulling on the bolt E′, while the other piston-rod, which is connected with the piston, being raised, allows of such pulling, as do also the flexible tubes *h h*. Thus the car may be tipped as gradually as desired and be under perfect control from the engine during the whole of

its movement. It is also evident that by adjusting the stop-cocks J either cylinder can be used separately, and, moreover, by the use of either or both cylinders the contents of the car may be unloaded either by the direct action of the piston-rods themselves or by the use of pulleys, cranks, chains, or any device for dumping or inclining the car.

In taking steam from the locomotive pipes are run under the cars and flexible tubular connections made between the cars similar to those now employed by the air-brakes now in common use.

It will be understood that the action or power in the cylinder directly acted on and doing the work is always downward, there being a pull-motion which draws the flexible piston-rod, (whose flexible quality is important and necessary,) the other cylinder working in the opposite direction, as a matter of course. As one cylinder works with a different motion than the other, it acts as a reverser, enabling the person dumping the car to check its dumping at any angle by this reverse action, as is desired when a car is to be held rigid at a certain angle in order to distribute rock ballast along the track.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device for dumping cars by the employment of steam, compressed air, or analogous power, the combination, with the car-body, truck, cylinders, and pistons, of the flexible piston-rods D, constructed and arranged substantially as above set forth.

2. In a device for dumping cars by the employment of steam, compressed air, or analogous power, the combination of the truck, the pair of cylinders C C, provided with pistons C′, the flexible piston-rods D, having their outer ends connected together, as shown, and the car-body and curved tubular frame E, arranged and constructed to operate substantially as described.

3. The combination of the car-truck, the cylinders C, supported thereby, pistons C′, flexible piston-rods D, provided with the looped ends D′, the tubular frame E, supported by the car, bolt E′, pipes or tubes h' H′ H, flexible tubes h, cocks and cut-offs J L, and car and rockers, substantially as and for the purpose described.

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Witnesses:
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