

No. 793,333.

PATENTED JUNE 27, 1905.

J. J. WEAVER.
CHAIN DOG.

APPLICATION FILED APR. 24, 1905.

Fig. 1.

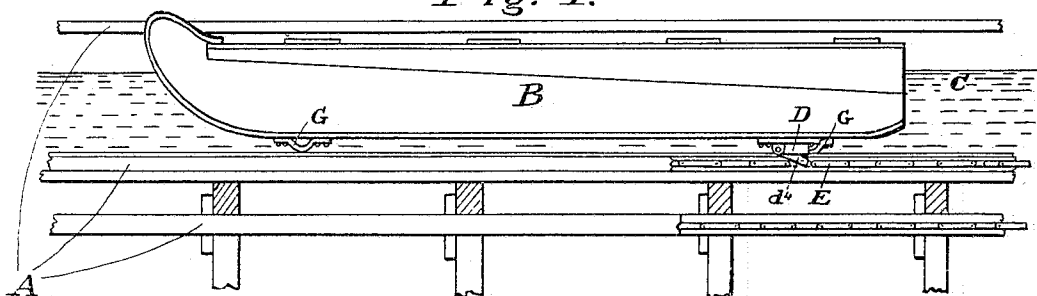


Fig. 2.

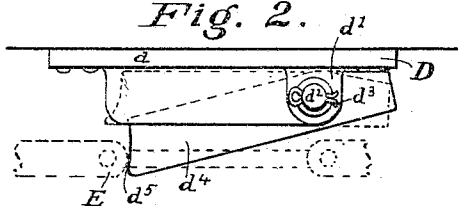


Fig. 3.

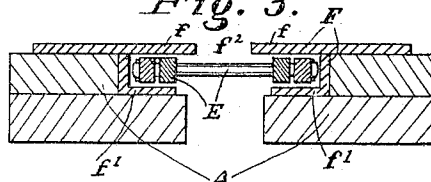


Fig. 4.

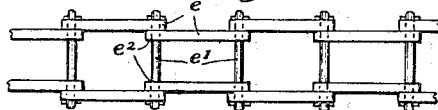


Fig. 6.



Fig. 5.

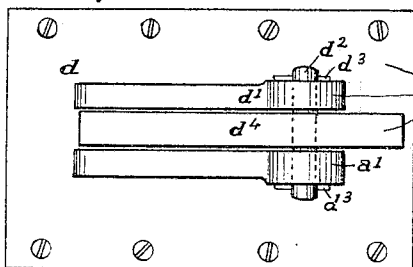


Fig. 7.

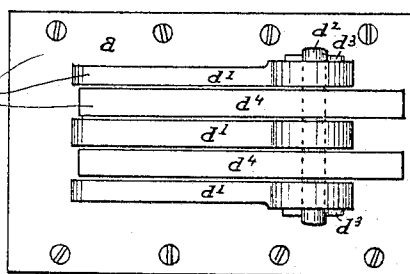
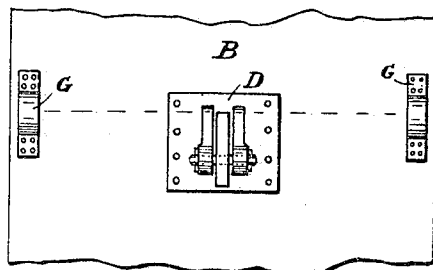


Fig. 8.



WITNESSES:

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JEROME J. WEAVER, OF LUDLOW, KENTUCKY.

CHAIN-DOG.

SPECIFICATION forming part of Letters Patent No. 793,333, dated June 27, 1905.

Application filed April 24, 1905. Serial No. 257,245.

To all whom it may concern:

Be it known that I, JEROME J. WEAVER, a citizen of the United States, residing at Ludlow, in the county of Kenton and State of Kentucky, have invented new and useful Improvements in Chain-Dogs, of which the following is a specification.

My invention relates to automatically-operating oscillating dogs designed to engage any suitable cable or chain.

It is especially valuable in avoiding the expense of an operator on mechanical pleasure devices having cars, boats, &c., designed to be occupied by passengers, which vehicles move by gravity part of the way and are dragged back to the upper level by attaching same to a cable, chain, or the like.

Formerly a person stationed on the vehicle operated a grip or other device to connect the cable or the like with the vehicle to elevate the latter. In some cases where a chain or knotted cable was used a fixed dog attached to a convenient portion of the vehicle engaged suitable places on the endless chain. In some devices of this sort means were necessarily provided for keeping the fixed dog out of the way until it should contact with the chains at a safe point to insure proper connections. With my improved dog no such cumbersome or expensive auxiliaries are required, and one or more such dogs properly placed insure operative contact of chain and dog whenever the speed of the propelling element shall have exceeded the speed of the carrying element, so that practically no jerks or jars result when the vehicle passes from the motion by gravity to the chain-motion. It also releases from the chain or cable easily when the vehicle has reached the top of elevating incline, while it holds as securely as any other form of dog when in operation.

I have with my device secured cheapness, superior efficiency, and simplicity of operation.

The same form of device will operate equally well on conveyers for coal and the like.

In the particular embodiment of my invention selected for illustration herein, Figure 1 is a side elevation of a section of a "shoot-the-chutes" flume with boat for passengers and with parts of chain-guide, &c., broken

away to show chain and dog in operative contact; Fig. 2, a side elevation of my improved dog, showing two extreme positions of dog-bar; Fig. 3, a section across the chain-guide and chain in same; Fig. 4, a plan view of dog-chain; Fig. 5, a bottom plan view of dog for chain; Fig. 6, a plan view of "knotted" cable, (an alternative element;) Fig. 7, a bottom plan view of dog for knotted cable; Fig. 8, a bottom plan view of a shoot-the-chutes boat, showing runners and dog properly placed.

The flume or framework of the chute as a whole is designated as A. Within this flume the boat B moves in one direction, and the motion of said boat is usually accelerated by its momentum acquired in descending the "coasting-chute." (Not shown.) Such pleasure devices have a chute down which the boat glides by gravity and another up which the boat is carried by an endless chain or cable.

To the bottom of the boat at any convenient point or points, preferably in line with or near where the runners are placed, are attached one or more chain-dogs D, composed of plate d^1 with raised lugs or ribs d^2 on the under side thereof, through which passes a pin d^3 , held in place in any convenient manner, as by cotter-pins d^4 , or by beading over the ends. Between the ribs d^2 is placed a dog-bar d^5 , so shaped and placed as to have such a limited up-and-down movement on the pin d^3 as to permit the excess of weight on the rear end thereof to normally hold the bar depressed at that end enough to operatively contact with a link of the chain E. The dog-bar d^5 may be cut any suitable shape at d^6 to insure secure holding contact of dog and chain.

Runners G G are shoes placed in pairs on opposite sides of the boat and are so placed and of such height as to permit the boat to glide smoothly over vertically-curved portions of the chute. The dog being preferably on a line with either or both pairs of the runner-shoes is always equidistant from the chain, and positive holding contact of the dog-bar is insured.

The chain may be of any convenient construction that provides at suitable distances horizontally-open spaces large enough to admit the dog d^1 and having link ends adapted to engage the rear end of the dog, as shown

in Fig. 4, in which e represents the link side bars held in operative position by rods e' , with shoulders e^2 e^3 , adapted to hold opposite link-bars their normal distance apart. These rods pass through side bars of adjacent links near their ends and may be held in operative position by beading over the ends of the rods. Against these rods near the middle the dog-bar d^4 presses, carrying forward dog and vehicle to which it is attached at the rate chain travels.

A guide F is provided for the chain E to run in. This guide is attached firmly to the frame of the chute A and is provided with upper plates f and angle-plates f' , which form the bottom and sides, or may be made of channel-irons. Guide may be open below and above has a slot f^2 , adapted to receive and guide the dog-bar d^4 . In this slot the dog-bar trails.

It will be apparent from the description that whenever the speed of the vehicle exceeds the speed of the chain the dog passes freely over the chain-links, the rear end dropping into each horizontally-open link and rising in passing over the end of the link or connection-rod. When the speed of the vehicle has diminished, (the speed of the chain being normally constant,) until the speed of the chain is more rapid, then the dog will catch in the next horizontally-open link and dog and vehicle will move forward at the rate of and with the chain. Therefore the vehicle speed will change from its own motion to the chain's motion so gradually as to be practically imperceptible to passengers.

A suitable knotted cable, such as shown in Fig. 6, may be used instead of the chain, and then a device with two dog-bars, such as shown in Fig. 7, will be used.

It is obvious that a variety of chains and cables and suitably-formed dogs constructed on the same principle may be used without departing from the spirit of my invention.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In combination with a conveyer, a dog under the vehicle thereof, having a dog-bar pivoted toward its forward end, said bar having limited vertical oscillation and adapted at its rear end to operatively contact with a suitable endless traveling member, such traveling member, and a guide for such endless traveling member and said dog-bar, substantially as set forth.

2. In combination with a pleasure device carrying passengers, a dog under the vehicle thereof, having a dog-bar pivoted toward its forward end, said bar having limited vertical oscillation and adapted, at its rear end, to operatively contact with a suitable endless traveling member, such traveling member and a guide for such endless traveling member and said dog-bar, substantially as set forth.

3. In a "shoot-the-chutes," the boat thereof provided with a dog on its under side, said dog having a dog-bar, pivoted toward its forward end, said bar having limited vertical oscillation, and adapted at its rear end to operatively contact with an endless traveling chain, such chain and a guide therefor and for said dog-bar, substantially as set forth.

4. In combination with a conveyer supported from beneath, a dog on the under surface thereof in line with weight-carriers, said dog having limited vertical oscillation and adapted at its rear end to operatively contact with a suitable endless chain, said chain and means for maintaining a suitable portion of said chain in potentially operative relations to said dog, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JEROME J. WEAVER.

Witnesses:

JOSEPH R. GARDNER,
HARRY HENKE.