

No. 824,183.

PATENTED JUNE 26, 1906.

W. E. KNOWLTON.  
TRACK CLEARER.

APPLICATION FILED FEB. 20, 1905.

Fig. 1.

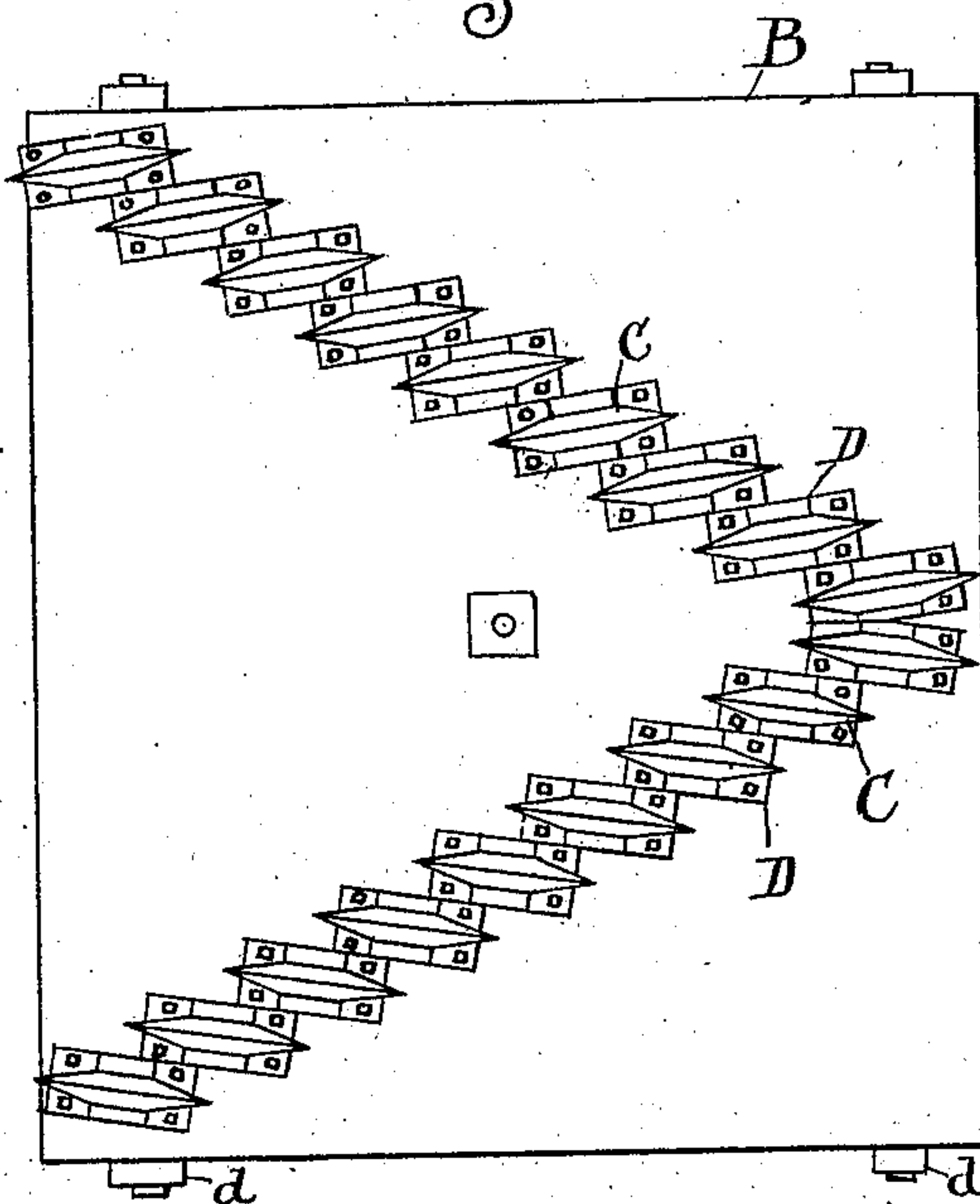
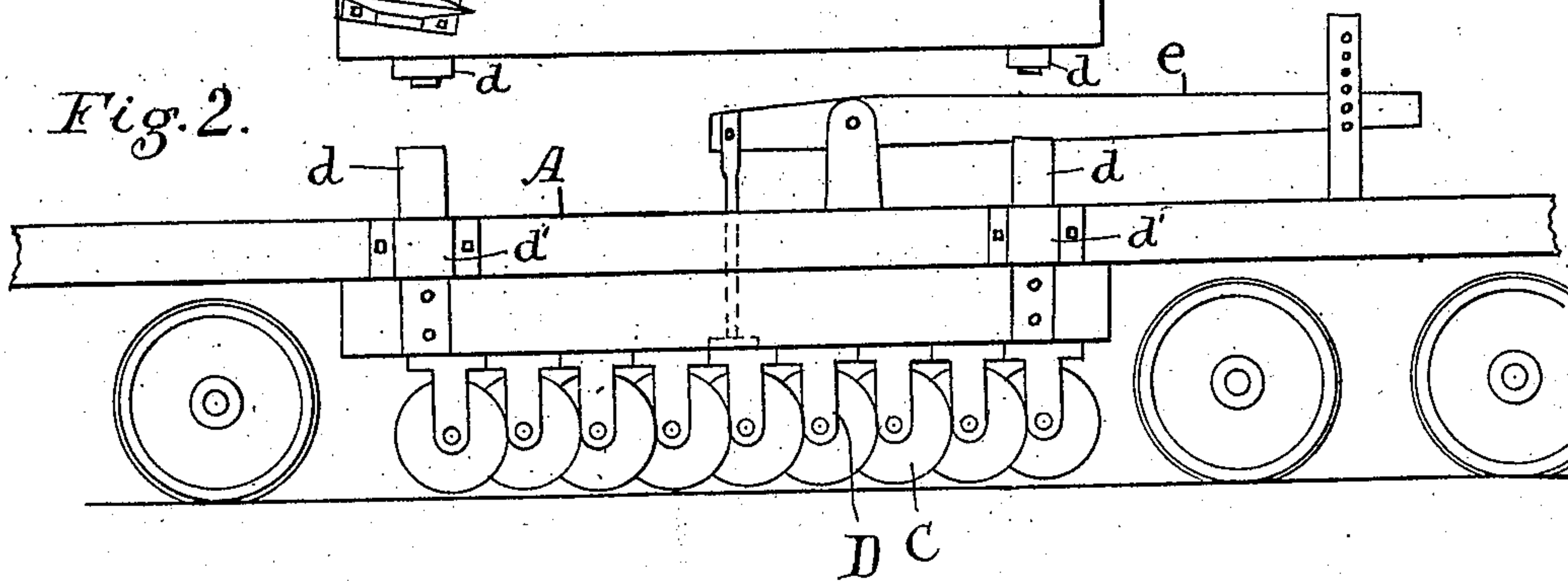


Fig. 2.



Witnesses:  
*W. W. Hinchey*  
*C. W. Hinchey*

Inventor:  
William E. Knowlton  
by S. W. Bates  
his atty.



# UNITED STATES PATENT OFFICE.

WILLIAM E. KNOWLTON, OF PORTLAND, MAINE.

## TRACK-CLEARER.

No. 824,183.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed February 20, 1905. Serial No. 246,442.

*To all whom it may concern:*

Be it known that I, WILLIAM E. KNOWLTON, a citizen of the United States of America, and a resident of Portland, county of Cumberland, State of Maine, have invented certain new and useful Improvements in Track-Clearers, of which the following is a specification.

My invention relates to a track-clearer adapted particularly to be used for removing ice and hard snow from street-car tracks.

The accumulation of ice and hard snow between the rails of street-car tracks causes great trouble and expense in northern climates. The ice accumulates in the center until the motor-casing drags against it, requiring a great amount of extra power to run the cars. The rails also are at the bottoms of deep grooves, and any added quantity of ice or snow quickly blocks the track, making it difficult to run the cars. So far as I am aware, no mechanical appliance has ever been successfully used for removing ice from between the tracks, one of the great difficulties being that the ice is usually filled with said sand and gravel. The result is that the only way of removing the ice is by hand-labor, and large amounts of money are usually spent by the street-railroad companies in digging out the ice from their tracks in the winter.

The object of my invention is to construct a track-clearer which will readily break up the ice, so that it can be removed by a plow or other like means, and I accomplish this object by the use of a series of pivoted disks adapted to roll on the ice and set at an acute angle with the line of motion of the car, plow, or other vehicle to which the disks are secured.

I illustrate my invention by means of the accompanying drawings, in which—

Figure 1 is a plan of the under side of the beam to which the rolling disks are attached; and Fig. 2 is a side elevation of a car, showing the disks in position.

A represents a car or other suitable vehicle, and B is the beam, to which the disks C are secured. The disks are made, preferably, of cast iron or steel, thick in the center and sharp at the edge, and they are pivoted to suitable bearings D, which are fastened by

bolts to the under side of the beam. The bearings are so set that the disks will make an acute angle with the line of motion of the car, and they are preferably arranged in a series extending across the track and out on each side, following diagonal lines, so that they will make parallel cuts. The inclination of the disks on one side of the center line of the track is the reverse of that on the opposite side, so that the lateral strain due to the action of the disks will be equalized, and the angle is such as to throw the ice outward from the center.

The beam is provided with suitable means for raising and lowering. As here shown, it is guided by uprights *d*, passing through guides *d'*, and a lever *e* furnishes means for raising and lowering the beam.

In operation it will be seen that the disks have a rolling motion which acts to loosen the ice and to crowd it to one side. There is little or no danger of injuring the apparatus by striking crossings, &c., as the disks will readily roll over any obstructions. These disks may be of any suitable material; but in practice I prefer to make them of cast-iron, with comparatively sharp edges and thickened centers. They may also be supported in any suitable manner, either by means of a beam, as here shown, or any other framework. It is evident that the disks may be used between the tracks or at the sides, or indeed they may be used in any position when ice is to be cut, whether on street-car tracks, highways, or in any other situation.

The edges of the disk need not necessarily be formed smooth, as here shown, as they may be corrugated or formed with teeth or otherwise.

I claim—

1. In a track-clearer for removing ice, the combination of a car or other vehicle provided with a series of pivoted disks set at an acute angle to the line of motion of the car and adapted to roll on the ice.

2. In a track-clearer for removing ice, the combination of a car or other vehicle provided with a series of pivoted disks with thickened centers and sharpened edges set at an acute angle to the line of motion of the car and adapted to roll on the ice.

3. In a track-clearer for removing ice the  
combination of a car or other vehicle, a beam  
beneath said car, means for raising and low-  
ering said beam and a series of disks pivoted  
5 on the under side of said beam and set at an  
acute angle with the line of motion of the car  
and adapted to roll on the ice.

Signed at Portland this 15th day of Febru-  
ary, 1905.

WILLIAM E. KNOWLTON.

Witnesses:

S. W. BATES,  
C. M. GODFREY.