

No. 720,837.

PATENTED FEB. 17, 1903.

C. A. NEEDHAM.  
AERIAL DEVICE.

APPLICATION FILED MAY 27, 1902.

NO MODEL.

Fig: 1.

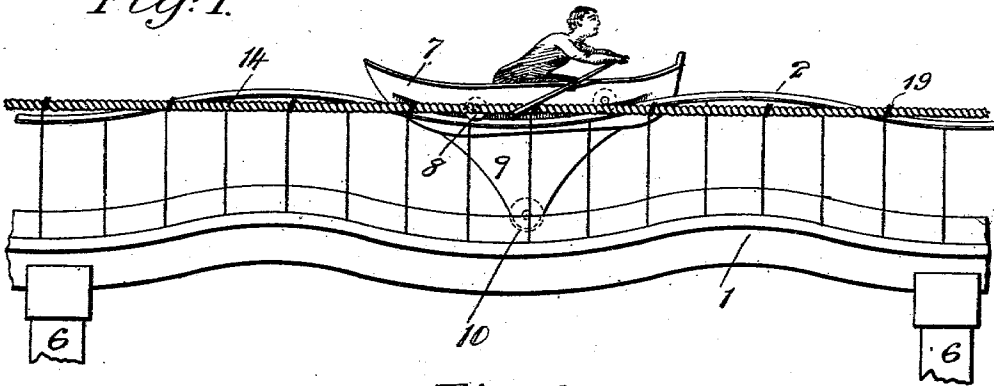


Fig: 2.

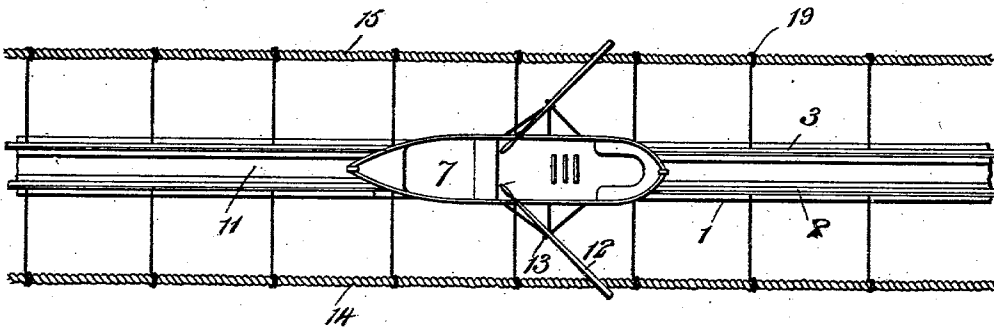


Fig: 3.

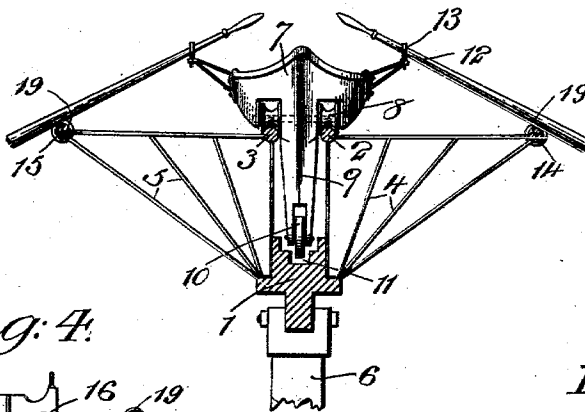
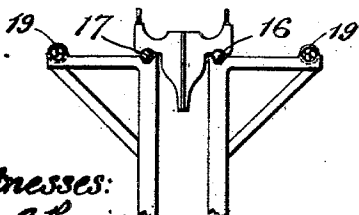


Fig: 4.



Witnesses:  
John A. Dennis  
George Barry Jr.

Fig: 5.



Inventor:  
Charles A. Needham  
by attorney  
Mount Seward

# UNITED STATES PATENT OFFICE.

CHARLES A. NEEDHAM, OF NEW YORK, N. Y.

## AERIAL DEVICE.

SPECIFICATION forming part of Letters Patent No. 720,837, dated February 17, 1903.

Application filed May 27, 1902, Serial No. 109,148. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. NEEDHAM, a citizen of the United States, and a resident of the borough of Manhattan, in the city and State of New York, have invented a new and useful Improvement in Aerial Devices, of which the following is a specification.

This invention relates to an improvement in aerial devices, and has for its object to provide an aerial device comprising an elevated way or track, a boat fitted to travel along the same, and manually-operated means for propelling the boat along the elevated way or track.

A further object is to provide a device of the above character in which oars carried by the row-boat in position to be grasped by the person within the boat are fitted to frictionally engage cables extending along the elevated way or track in proximity to the same.

A still further object is to provide an undulating elevated way or track for the row-boat, so as to cause the boat to rise and fall as it is propelled by the occupant along the said way or track.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents my improved aerial device in side elevation, showing the manner of propelling the boat along the elevated track or way. Fig. 2 is a top plan view of the device. Fig. 3 is an enlarged vertical transverse section through the elevated way or track, showing the boat in end elevation. Fig. 4 is a detail view of a modified form of antifriction connection between the boat and its supporting way or track, and Fig. 5 is a view in perspective of a modified form of oar in which the outer end of the oar is provided with an elastic cover for increasing the frictional contact between the oar and the cable which it engages.

The elevated way or track shown herein comprises a central longitudinal channel-rail 1 and two upper side rails 2 and 3, rigidly connected to the central frames 4 and 5. The center rail 1 is supported at a predetermined distance above the ground by a plurality of posts 6. These side rails 2 and 3 and the center rail 1 may be made undulating, as shown, so as to cause the boat, to be hereinafter de-

scribed, to rise and fall as it is propelled along the said rails.

The boat is denoted by 7, and it may be made of any desired shape and size to suit different requirements. This boat has an antifriction connection with the elevated way or track, the form shown in Figs. 1, 2, 3, inclusive, being constructed and arranged as follows: The boat is provided with two traction-wheels 8 on each side of the boat in position to travel along the rails 2 and 3 of the elevated way. The boat may be cut away adjacent to these traction-wheels 8, if so desired, so as to mount the body of the boat as closely as possible to the said rails. The boat 7 is further provided with a depending plate or portion 9, the lower end of which is provided with a guide-wheel 10, located within the channel 11 in the center channel-rail 1, so as to act as a guard to prevent the boat from jumping off the rails 2 and 3.

The boat 7 is provided with one or more pairs of oars 12, pivoted in oarlocks 13, carried by the boat. The outer ends of these oars 12 are preferably made considerably heavier than the inner ends to cause them to rest with considerable weight upon the cables to be immediately described.

Cables 14 and 15 are secured along the elevated way or track upon opposite sides of the rails thereof by the frames 4 and 5, which connect the upper rails 2 and 3 to the lower center rail 1. These cables are so located that they will be engaged by the outer portions of the oars 12, so that when the oars are swung by the occupant, with their outer portions in engagement with the cables, the boat will be propelled along the elevated way or track by the frictional engagement of the oars with the said cables.

In the form shown in Fig. 4 I have shown the boat as having a ball-bearing engagement 16 and 17 with the elevated way or track.

In Fig. 5 I have represented the oar 12 as being provided with a covering 18, of rubber or other elastic material, along its outer portion, so as to insure a still greater frictional contact between the oar and the cable.

The cables 14 and 15 may be provided with abutments 19 at intervals along the same, if so desired, for insuring the frictional engagement between the oars 12 and the said cables.

It is evident that changes might be resorted to in the form, construction, and arrangement of the several parts without departing from the spirit and scope of my invention. Hence  
5 I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

1. An aerial device comprising an elevated way or track, a boat fitted to travel along the  
10 same and manually-operated means entirely independent of the way or track for propelling the boat along the said elevated way or track.

2. An aerial device comprising an elevated  
15 way or track, a boat fitted to travel along the same, cables extending along the track and manually-operated means carried by the boat for frictionally engaging the cables.

3. An aerial device comprising an elevated  
20 way or track having a central longitudinal rail and side rails spaced therefrom, a boat fitted to travel along the said rails and manually-operated means for propelling the boat along the elevated way or track.

25 4. An aerial device comprising an elevated way or track having a central longitudinal rail and side rails, cables extending along the elevated way or track, frames for connecting the cables, the side rails and the center rail,

a boat fitted to travel along the elevated way 30 or track and manually-operated means carried by the boat fitted to frictionally engage the said cables for propelling the boat along the way or track.

5. An aerial device comprising an elevated 35 way or track, a boat fitted to travel along the same, cables extending along the said way or track and manually-operated means for propelling the boat along the way or track comprising oars having weighted outer portions 40 fitted to frictionally engage the said cables.

6. An aerial device comprising an elevated way or track, a boat fitted to travel along the same, cables extending along the track having 45 abutments at intervals thereon and manually-operated means carried by the boat arranged to engage the said abutments for propelling the boat along the elevated way or track.

In testimony that I claim the foregoing as 50 my invention I have signed my name, in presence of two witnesses, this 24th day of May, 1902.

CHARLES A. NEEDHAM.

Witnesses:

FREDK. HAYNES,  
HENRY THIEME.