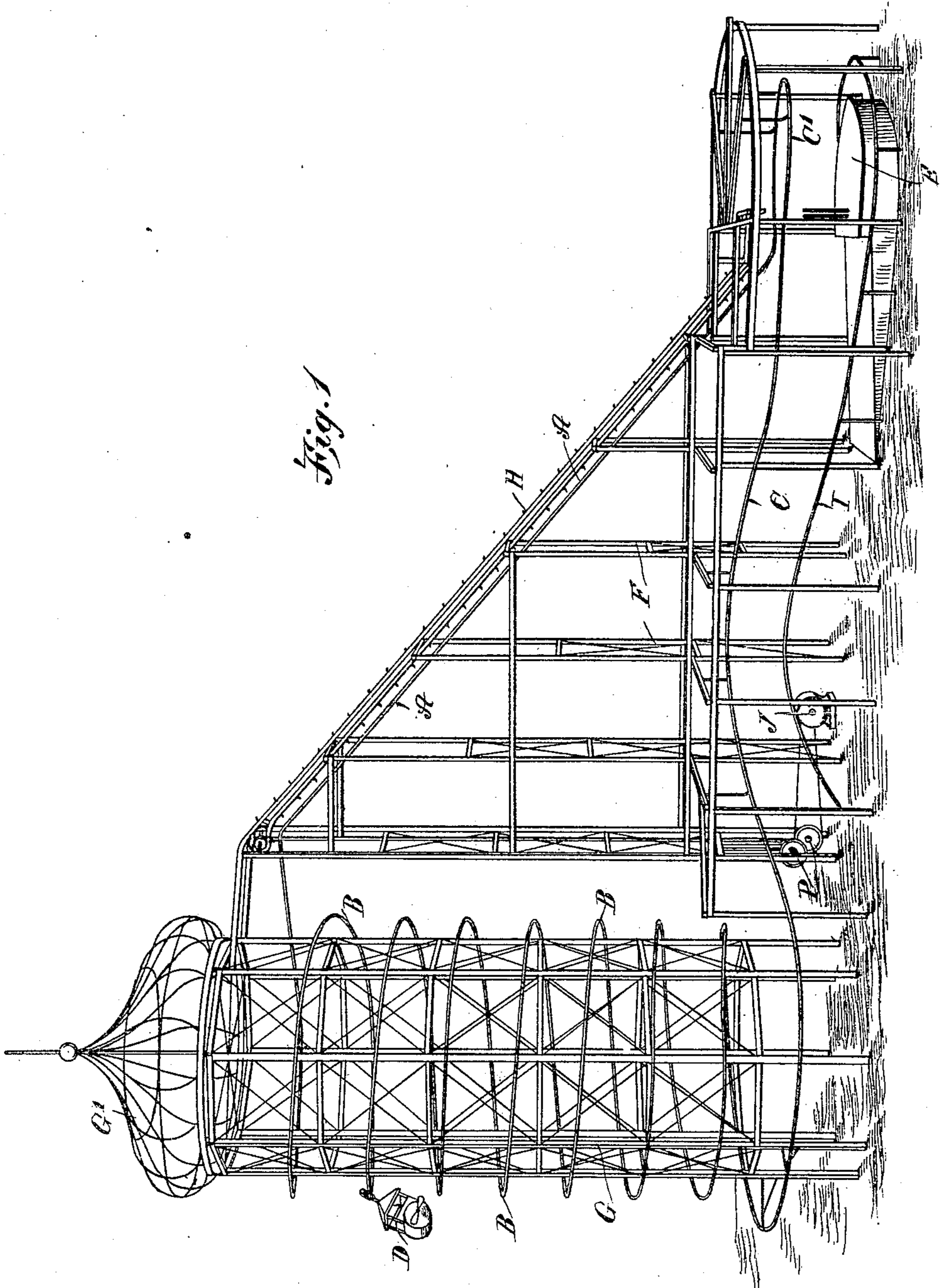


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INCLINED RAILWAY.  
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3 SHEETS—SHEET 1.



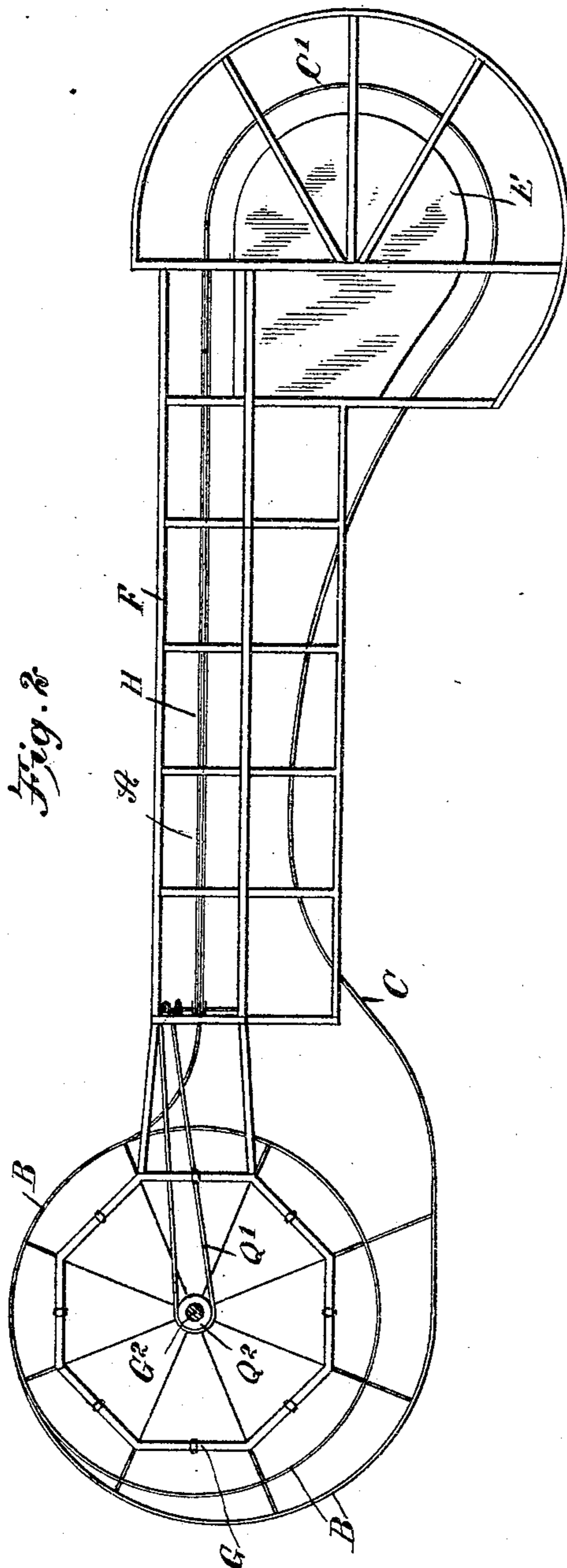
WITNESSES  
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3 SHEETS—SHEET 3.

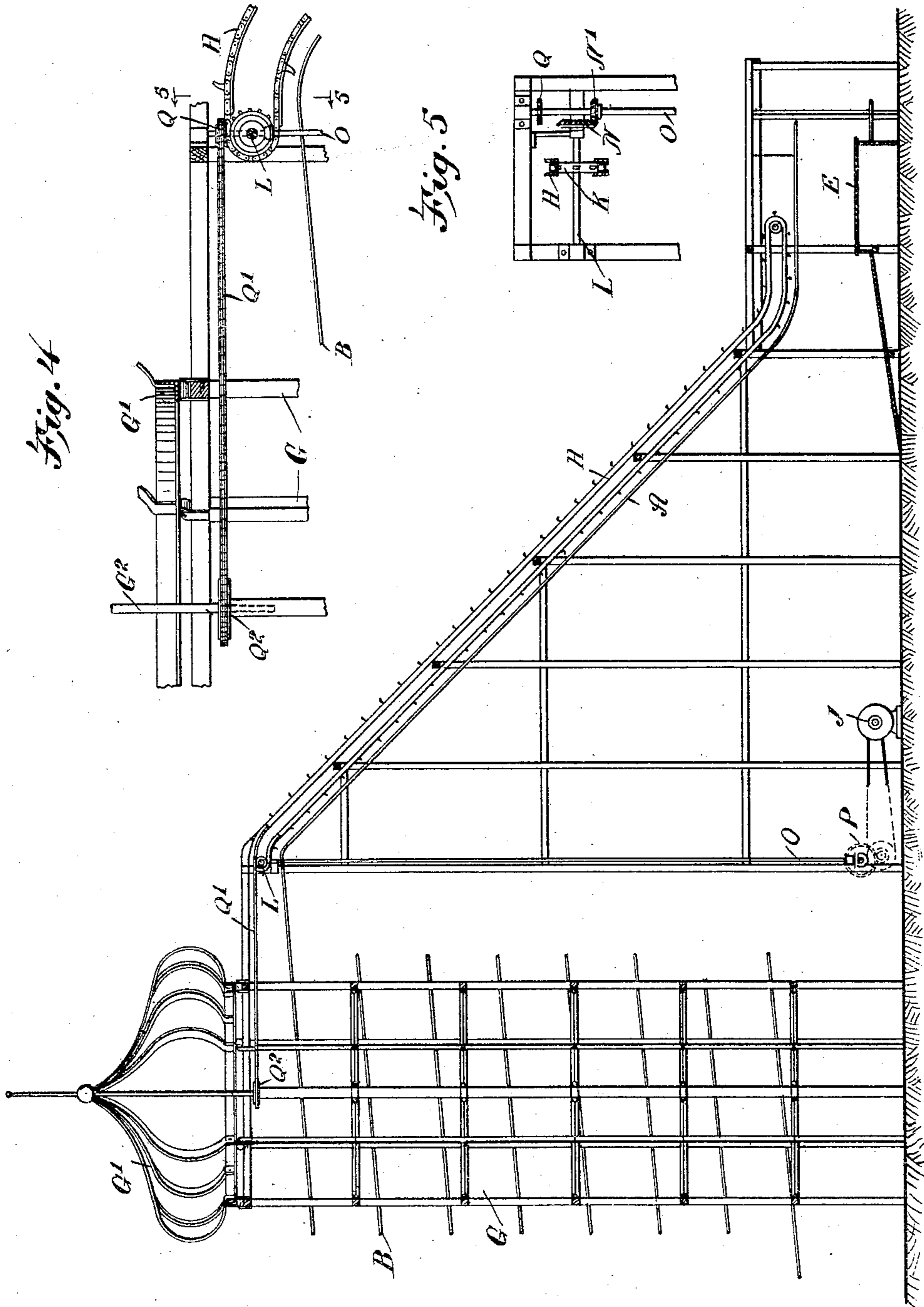


Fig. 4

Fig. 5

Fig. 3

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# UNITED STATES PATENT OFFICE.

ALBERT F. SMITH AND ALVIN T. SMITH, OF LONGBEACH, CALIFORNIA, ASSIGNORS TO  
NATIONAL AIRSHIP SPIRALWAY COMPANY, A CORPORATION OF CALIFORNIA.

## INCLINED RAILWAY.

955,217.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed July 7, 1909. Serial No. 506,307.

*To all whom it may concern:*

Be it known that we, ALBERT F. SMITH and ALVIN T. SMITH, both citizens of the United States, and residents of Longbeach, in the county of Los Angeles and State of California, have invented a new and Improved Inclined Railway, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved inclined railway for use in pleasure resorts, exhibitions and like places, and arranged to provide a continuous track for a suspended car to travel on, the track having an up-track, a spiral down-track, and a return-track connecting the lower end of the spiral down-track with the lower or starting end of the up-track.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the inclined railway; Fig. 2 is a plan view of the same, the revolving top of the tower for the spiral down-track being omitted and the driving shaft for the said top being shown in section; Fig. 3 is a sectional side elevation of the inclined railway; Fig. 4 is an enlarged sectional side elevation of the upper end of the structure partly broken away; and Fig. 5 is a cross section of the same on the line 5—5 of Fig. 4.

The track of the improved inclined railway is preferably made continuous, and consists of an inclined up-track A, a spiral down-track B and a return-track C, connecting the lower end of the down-track B with the lower or beginning end of the up-track A. On the continuous track mentioned is adapted to travel a suspended car D, as plainly indicated in Fig. 1, and the passengers traveling in the car D embark and disembark at a station E, located at the junction of the lower end of the up-track A with the return-track C.

The up-track A and the return-track C are built on a suitable frame-work F, and the down-track B is mounted integrally on the tower G, provided with a revolving top G', preferably illuminated by electricity or other suitable means. The lower end of the down-track B and the beginning end of the up-track A are approximately on the same hori-

zontal plane, and the return track C is preferably made undulating, as plainly indicated in the drawings, and the connection between the return track C and the up-track A is preferably in the form of a loop C', located immediately above the similarly-constructed station E, as shown in Figs. 1, 2 and 3. The up-track A is provided with the usual hauling chain H, adapted to engage the suspension means of the car D, to haul the car up the inclined up-track A to the summit thereof. The car D on reaching the summit passes out of engagement with the hauling chain H and now travels onto and down the spiral down-track B by its own momentum, the car D during this downward travel on the down-track B swinging into an inclined position relative to the vertical, as plainly indicated in Fig. 1, by centrifugal force. The car D on reaching the lower end of the down-track B passes onto the return-track C and travels forward on the same by the momentum acquired during the downward travel on the down-track B, so that the car readily travels forward on the undulating track C around the loop C' to the lower end of the up-track A.

Below the return track C is arranged a friction stop and guide rail I, under the control of the operator in charge of the railway at the station, so as to check the speed of the returning car and to bring the same to a standstill at the station E, for the passengers to disembark and for new passengers to embark for the next journey.

The hauling chain H is propelled by suitable mechanism driven from a motor J, as indicated in Figs. 1 and 3, the driving connection being preferably at the upper end of the chain H, which passes at this point around a sprocket wheel K, secured on a transverse shaft L, connected by bevel gear wheels N and N' with a vertical shaft O driven from the motor J by a reducing gearing P, as indicated in Figs. 1 and 3.

On the shaft O is secured a sprocket wheel Q, connected by a sprocket chain Q' with a sprocket wheel Q<sup>2</sup>, fastened on the shaft G<sup>2</sup>, for the revolving top G' of the tower G, so as to revolve the said top G' whenever the inclined railway is in use, that is, when the motor J is running and the hauling chain H is traveling, to haul the cars up the inclined up-track A, as previously explained.

It will be seen that by the arrangement

described, the passengers in a car are carried up the up-track A, and in doing so approach the revolving top G' of the tower G, and then the car during its downward travel  
 5 on the down-track B swings outward by centrifugal force, thus rendering the ride in the car exceedingly interesting and exciting.

Having thus described our invention, we claim as new and desire to secure by Letters  
 10 Patent:

1. A railway having a continuous track, and a car suspended from the said track and adapted to travel thereon, the said track having an up-track, a spiral down-track, a  
 15 return track connecting the lower end of the said down-track with the beginning end of the said up-track, and a tower supporting the said down-track, the latter being exterior of the tower.

20 2. A railway having a continuous track, and a car suspended from the said track and adapted to travel thereon, the said track having an up-track provided with power-propelling means for moving the said car  
 25 up on the up-track, a spiral down-track, a return track connecting the lower end of the said down-track with the beginning end of the said up-track, and a tower having a revoluble top driven from the said power propelling means, the tower exteriorly support-  
 30 ing the said down-track.

3. A railway having a continuous track, a car suspended from the said track and adapted to travel thereon, the said track  
 35 having an up-track, a spiral down-track, and a return track connecting the lower end of the said down-track with the beginning end of the said up-track, the said lower end of the down-track and the beginning end of  
 40 the said up-track being approximately in the same horizontal plane, and a friction stop and guide rail for engagement with the bottom of the car to check the speed thereof, the said rail being arranged below and follow-  
 45 ing the contour of the said return track.

4. A railway having a tower provided with a revolving top, and an inclined up-track leading to the said tower immediately below the said top.

5. A railway having a tower provided 50 with a revoluble top, a continuous track having a spiral portion surrounding the tower and an inclined portion leading to the tower below the top, a car suspended from the track and traveling on the same, means for 55 moving the car up the inclined track, and means for revolving the top of the tower from the car operating means.

6. A railway having a tower provided 60 with a revoluble top, a spiral track on the outside of the tower, an inclined track leading to the upper portion of the tower below the top, an undulating return track connecting the spiral and inclined tracks to form a continuous track, a car suspended from the 65 track and traveling on the same, means for moving the car up the inclined track, and means for revolving the top of the tower from the car moving means.

7. A railway comprising a tower, a spiral 70 track on the outside of the tower, a frame work at one side of the tower, an inclined track supported by the frame and leading to the upper portion of the tower, a return track connecting the lower ends of the spiral 75 and inclined tracks to form a continuous track, the connection between the return track and the inclined track being in the form of a loop, a car suspended from the track and traveling thereon, and means for 80 moving the car up the inclined track.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALBERT F. SMITH.  
 ALVIN T. SMITH.

Witnesses:

F. A. KNIGHT,  
 CAROL SHEPHERD.