

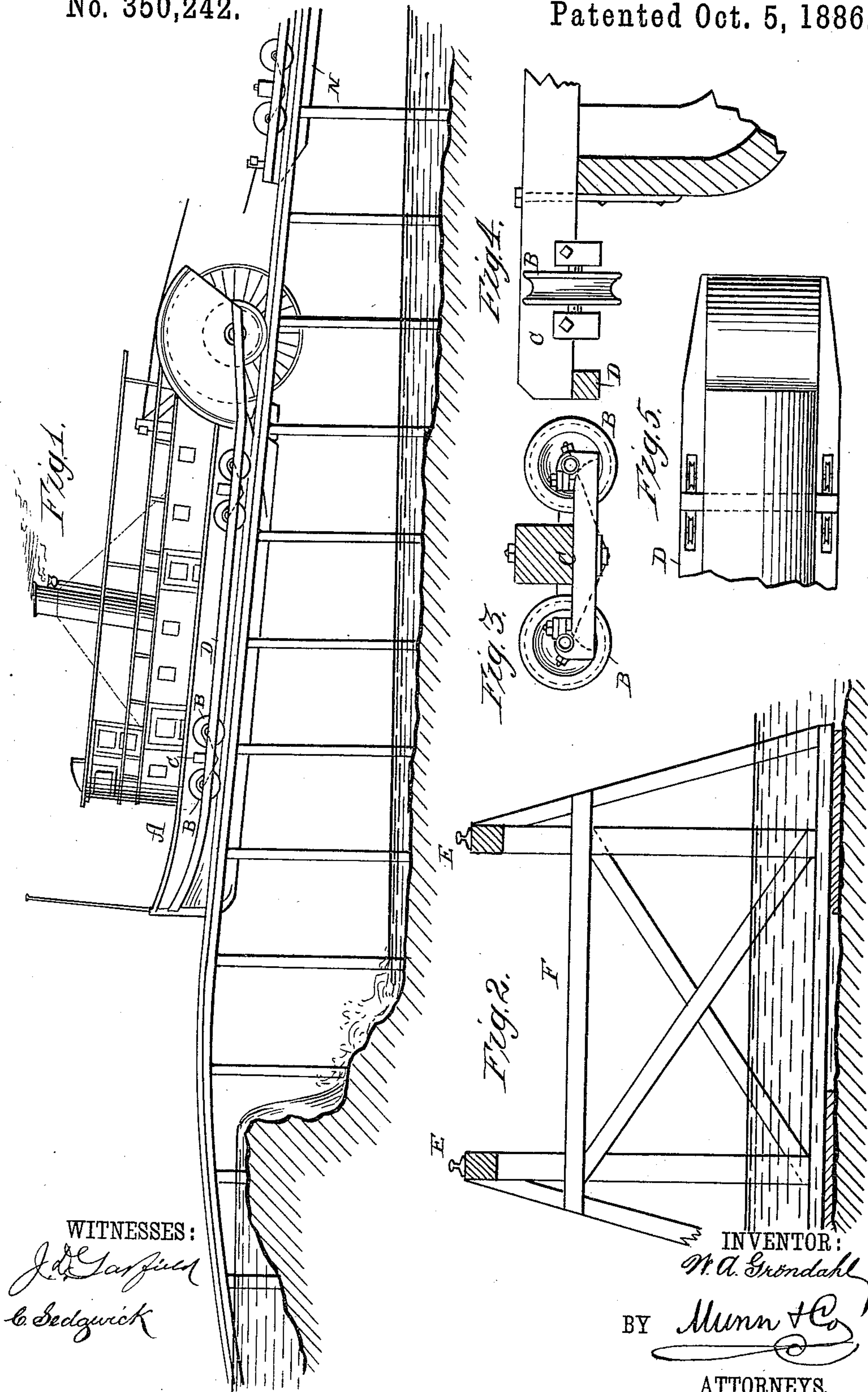
(No Model.)

W. A. GRÖNDAHL.

APPARATUS FOR CARRYING VESSELS OVER OBSTRUCTIONS.

No. 350,242.

Patented Oct. 5, 1886.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILHELM A. GRÖNDAHL, OF PORTLAND, OREGON.

APPARATUS FOR CARRYING VESSELS OVER OBSTRUCTIONS.

SPECIFICATION forming part of Letters Patent No. 350,242, dated October 5, 1886.

Application filed March 20, 1886. Serial No. 195,968. (No model.)

To all whom it may concern:

Be it known that I, WILHELM A. GRÖNDAHL, of Portland, in the county of Multnomah and State of Oregon, have invented a
5 new and Improved Method of Carrying Vessels Over Obstructions, of which the following is a full, clear, and exact description.

My invention relates to an improved apparatus for transporting vessels over obstructions, the object of the invention being to carry
10 vessels over such obstructions as rapids and falls in rivers that would otherwise not be navigable, so that a continuous transport upon such rivers is rendered possible; and to the
15 end named the invention consists of a properly-constructed way arranged in connection with vessels having trucks carrying wheels that are adapted to run upon said way, a proper motive power being arranged to advance the
20 vessels over the way, as will be hereinafter described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate
25 corresponding parts in all the figures.

Figure 1 is a sketch illustrating the general arrangement of the apparatus designed to carry out my improved method of transporting vessels. Fig. 2 is a cross-sectional view of the
30 trestle illustrated in Fig. 1, and designed as the way upon which the vessels are to move. Fig. 3 illustrates the construction of one of the trucks carried by one of the vessels. Fig. 4 is a sectional view of a portion of a vessel, representing in detail the construction of the
35 guard; and Fig. 5 is an inverted plan view of a portion of a scow or barge constructed in accordance with the terms of my invention.

In carrying my invention into practice, I
40 construct a steamboat, A, with wheels B B,

mounted on truck C, arranged within a guard-rail, D, of the vessel, the wheels B being designed to run upon rails E, carried by a trestle, F, or any other form of suitable foundation. The wheels B are, as stated, mounted within
45 the line of the guards, the idea being to prevent all possible injury to the wheels when the vessel is lying against a wharf. The motive power, when the vessel is running upon the rails E, is furnished by the engine employed
50 to propel the paddle-wheel, connection being made with the shafts of the wheels B directly from the paddle-wheel shaft, or indirectly through the medium of gearing or otherwise. Barges N, that are to be towed or transported
55 by the steamboat, are furnished with side trucks and guard-rails, such as those described in connection with the steamboat, the construction being precisely the same, except that the wheels of the barges are not driving-wheels.
60 In certain cases the barges might be towed over the obstruction by means of power applied from a stationary engine, or such stationary engine might be employed to draw the
65 steamboat, or to assist in such drawing.

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

In transporting vessels, the combination, with a vessel, of trucks comprising timbers
70 projecting from the sides of the vessel, to the outer ends of which timbers are applied guard-rails, and wheels suspended from said timbers inside of said guard-rails, substantially as shown and described, and for the purpose set
75 forth.

WILHELM A. GRÖNDAHL.

Witnesses:

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