(No Model.)

A. E. BROWN.

HOISTING AND CONVEYING MACHINE.

No. 302,705. Patented July 29, 1884.

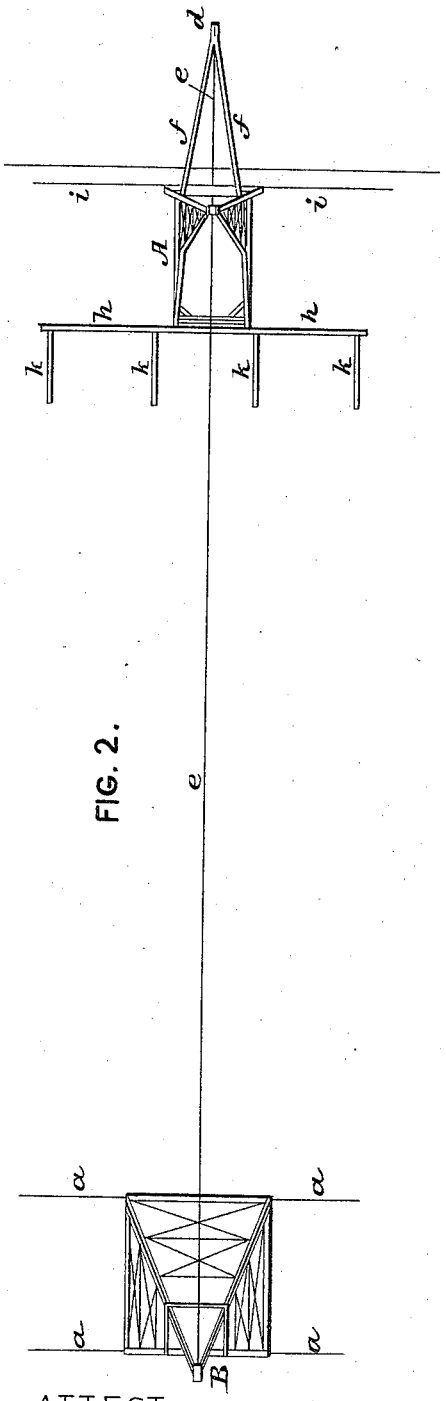

FIG. 2.

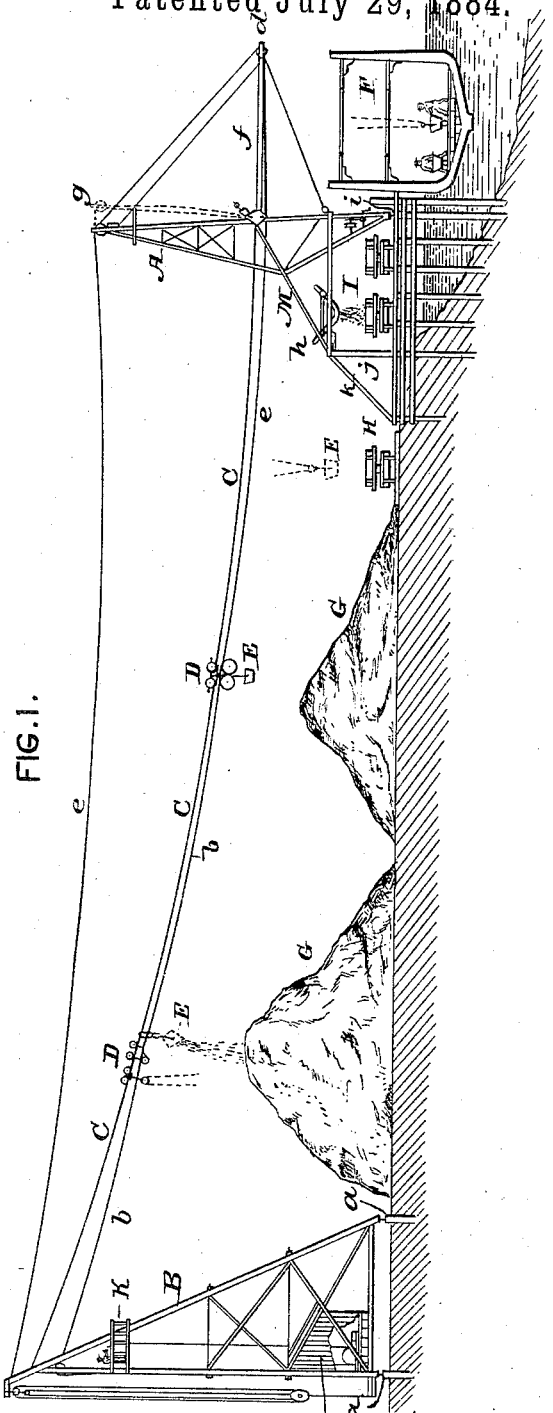

FIG. 1.

ATTEST.

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UNITED STATES PATENT OFFICE.

ALEXANDER E. BROWN, OF CLEVELAND, OHIO.

HOISTING AND CONVEYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 302,705, dated July 29, 1884.

Application filed June 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER E. BROWN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hoisting and Conveying Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My invention relates to a new and useful improvement in that class of hoisting and conveying machines in which a cable-tramway is employed; and it consists in the novel feature of construction or combination of devices hereinafter described, and which will be more specifically pointed out in the claim of this specification.

To enable those skilled in the art to which my invention relates to understand and practice the same, I will now proceed to more fully explain my improvement as I have so far practiced it, referring by letters to the accompanying drawings, forming part of this specification, and in which I have illustrated my invention carried out in the best form now known to me.

In the drawings, Figure 1 is a side elevation of my improved cable-tramway hoisting and conveying apparatus. Fig. 2 is a top view of the same.

In the two figures the same part will be found designated by the same letter of reference.

As will be observed by reference to the drawings, my improved apparatus is adapted to the purposes of hoisting ores or other materials out of boats and conveying the same to and depositing them at some desired locality on shore; or hoisting and conveying from on shore and discharging or loading into boats any such materials; or handling various materials in either loading into and unloading from cars stuff to be taken from or to be deposited at given localities on shore, or stuff to be transported from cars on shore to boats at the dock, or vice versa.

A is the outer pier, or that one nearer the dock. B is the inner pier, and C is the cable-tramway upon which travels the hoisting and conveying carriage or machine proper, D, by means of which and its bucket E the material to be handled is either lifted out of a boat at the dock, as seen at F, and conveyed on shore and there deposited in piles G, or transported from the boat to cars at H, or from said cars or boat to cars at I; or from one locality on land to another, or otherwise, as the exigencies of the case may require. The inner pier, B, is mounted on a railroad-track, *a a*, so that, as usual, it may be easily moved along sidewise to different localities, and contains or carries at or near its base the engine-house J, (containing the hoisting-engine,) and near its top the stand K, for the accommodation of the attendant who manages the apparatus and regulates those operations thereof which are not automatic.

b is the hoist-cable, which, as usual, runs from the drum of the engine at J to the rear or inner side of the machine D, while *e* is the cable extending from the outer or forward side of the machine D over an idler, *d*, (in the outer end of the bridge or hinged apron *f*,) and thence upwardly, obliquely, over an idler, *g*, in top of outer pier, A, and thence back over the top of pier B to the counter-weight L, all in a manner familiar to those skilled in the art, and according to constructions shown in United States patents heretofore granted to me on hoisting and conveying machines. The outer pier, A, like the inner one, is mounted, so as to be capable of movement or adjustment sidewise on a track, which is, however, composed of a forward rail, *i*, that is on the ground-level, and a hindmost rail, *h*, which is laid on an elevated horizontal beam arranged parallel to the rail *i*, and supported by vertical posts *j* and oblique braces *k*, that receive the backward thrust of the braces M of the pier framework. At Fig. 1 the hinged apron or bridge *f* is shown in full lines down in its working position, and turned up into a position of disuse in dotted lines.

As is well understood by those skilled in the art, there is more liability to pull over the back pier than the front one, on account of its greater height. The placement of the engine-house, hoisting-machinery, &c., in the lower part of this pier, as shown at J, Fig. 1, enables me to make the pier itself lighter, (and consequently sufficiently strong at less ex-

pense,) since I get the benefit of the weight (and the leverage over the fulcral point) by the pressure of these heavy appliances located, as shown, at the rearmost portion of the base of the pier.

If found expedient, the engine-house may be made purposely very heavy, (by a stone flooring, &c.;) or, in addition to the necessary material, the weight may be supplemented by heavy stone-work located within or adjacent to the engine-house.

The general operation of the apparatus as an entirety needs little or no special explanation, in view of all that I have so far explained, and the drawings, and the familiarity of those skilled in the art with my patented and with other cable-tramway hoisting and conveying apparatus.

What I claim as new, and desire to secure by Letters Patent, is—

In combination with the front pier and a cable-tramway, a back pier movable on tracks transversely to the tramway, and having located within it, and preferably near the back portion of the base thereof, the hoisting-engine and machinery, for the purpose of giving to said back pier a capacity to withstand the forward pull (on its top part) of the cable-tramway, all substantially as hereinbefore described.

In witness whereof I have hereunto set my hand this 19th day of May, 1884.

ALEX. E. BROWN.

In presence of—

W. B. SCOTT,

JAMES CORRIGAN.