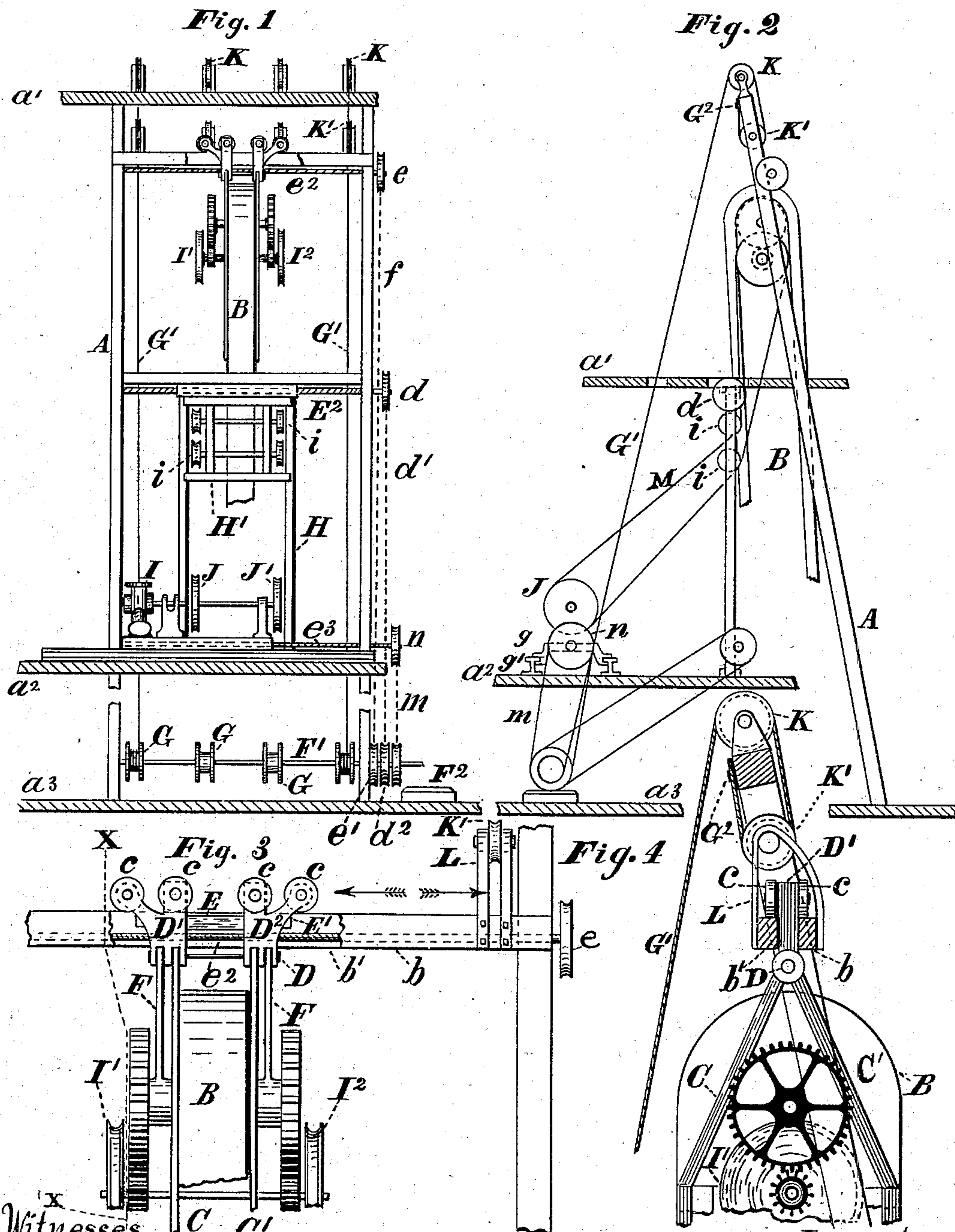


(No Model.)

R. DUNBAR.  
GRAIN CONVEYER.

No. 257,855.

Patented May 16, 1882.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ROBERT DUNBAR, OF BUFFALO, NEW YORK.

## GRAIN-CONVEYER.

SPECIFICATION forming part of Letters Patent No. 257,855, dated May 16, 1882.

Application filed January 28, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT DUNBAR, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Elevators, of which the following is a specification.

The object of my invention is to provide a suitable means for supporting a vertically-adjustable elevator and connecting therewith a horizontally-adjustable mechanism, whereby the elevator and its connections may be more easily adjusted horizontally, so as to readily adapt it to be used in one hatch of a vessel while an ordinary stationary elevator is being used in another hatch, and so that it can be easily adapted to and used in different vessels where the distance between the hatches varies, as will be more clearly hereinafter shown by reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the apparatus and a section through some of the floors of an elevator-building, showing also a part of one of the supporting-beams broken away so as to expose a portion of the supporting and horizontally-adjusting mechanism. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged front elevation of the supporting device and a portion of the elevator and gearing, a part of one of the supporting-beams being broken away; and Fig. 4 represents a side elevation of the same, partly in section, showing in addition a section through the upper beam or floor and a side elevation of one of the top pulleys over which one of the cables or chains for lifting or lowering the elevator is passed.

A represents the usual frame-work of an elevator.  $a^1 a^2 a^3$  are sections through portions of floors, through which it passes and is secured in any well-known way.

The elevator B is supported on two vertically-adjustable beams,  $b b'$ , by means of the iron bars  $C C'$ , which are firmly secured to the elevator by bolts or in any well-known way. The supporting-bars  $C C'$  are jointed by a bolt, D, to strong supports or bars  $D' D^2$ , which are arranged so as to slide or move between the beams  $b b'$ , (see Figs. 3 and 4,) and are fastened together by a beam, E, and bolt  $E'$ . (Shown in Fig. 3.) A series of wheels,  $c$ , are se-

cured to each side of the supports  $D' D^2$ , so as to turn easily thereon and roll back and forth on the beams  $b b'$ . (See Fig. 4.) A screw-shaft,  $e^2$ , provided with a pulley,  $d$ , passes through nuts in the bars  $D' D^2$ . The pulley  $d$  is connected by a cable, chain, or belt,  $d'$ , to an engine-pulley,  $d^2$ . If desired, an additional strengthening or supporting bar, F, may be used in addition to the bars  $C C'$ , as shown in Fig. 3. The lower engine-shaft,  $F'$ , is provided with winding-drums G and other necessary connections, and cables  $G'$  for raising or lowering the elevator, and a pulley,  $e$ , connected with the engine pulley  $e'$  by a cable,  $f$ , the lower engine being located on a foundation,  $F^2$ , for giving the horizontal movements or adjustments to the elevator, the frame H, tightening-pulley frame  $H'$ , and engine I and its connections. In Fig. 1 I have shown a screw-shaft,  $e^2$ , arranged below the beams  $b b'$ , and in Fig. 3 it is shown as arranged between said beams.

$I^1 I^2$  are the pulleys for operating the elevator, and  $J J'$  the pulleys on the engine-shaft, which connects with them by means of a cable, chain, or belt.

The engine I is arranged in slideways  $g g'$ , and is moved from one side of the frame A to the other by the screw-shaft  $e^2$ , while one or more screw-shafts,  $E^2$ , operate the frame H. The cables for lifting or lowering the elevator pass from the winding-drums G, to which they are fastened securely, to the upper pulley, K, over which it passes, and then under and around the pulley  $K'$ , and from thence up to the upper part of the frame, to which it is firmly fastened by a bolt,  $G^2$ . (See Fig. 2.) The pulleys  $K'$  are held in place by the iron straps L, (see Figs. 3 and 4,) and are so formed that the wheels  $c$  can pass under them as the elevator is being adjusted back and forth horizontally.

M in Fig. 2 represents the cables for connecting the wheels  $I^1 I^2$  with the engine wheels or pulleys  $J J'$  for running the elevator.

The operation of my invention will be fully understood from the foregoing description and accompanying drawings.

I claim—

1. An elevator, B, suspended on rollers  $c$  and their supporting and connecting mechanism  $C C' D' D^2$  and beams  $E E'$ , substantially as specified, in combination with a screw-shaft,

$e^2$ , provided with a pulley,  $e$ , for connecting by a suitable cable,  $f$ , with the engine-pulley  $e'$ , for the purpose of giving it a horizontal adjustment, substantially as described.

5 2. An elevator, B, provided with rollers  $c$  and their connecting and supporting mechanism C C' D' D<sup>2</sup> and beams E E', as specified, and having the driving-pulleys I' I<sup>2</sup>, frames H H' and tightening-pulleys, and the engine I  
10 and its connecting-cables, in combination with

the horizontally-adjustable screw-shafts, the winding-drums G and their connecting-cables and pulleys, and a suitable engine, whereby either a horizontal or vertical adjustment may be given to the elevator.

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Witnesses:

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