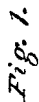
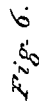


W. ELMES.
Elevators.

No. 132,459.

Patented Oct. 22, 1872.



Witnesses.

Joe I. Peyton
E. Davidson

Inventor:

Wm. Elmes
by his Atty
Wm. D. Baldwin.

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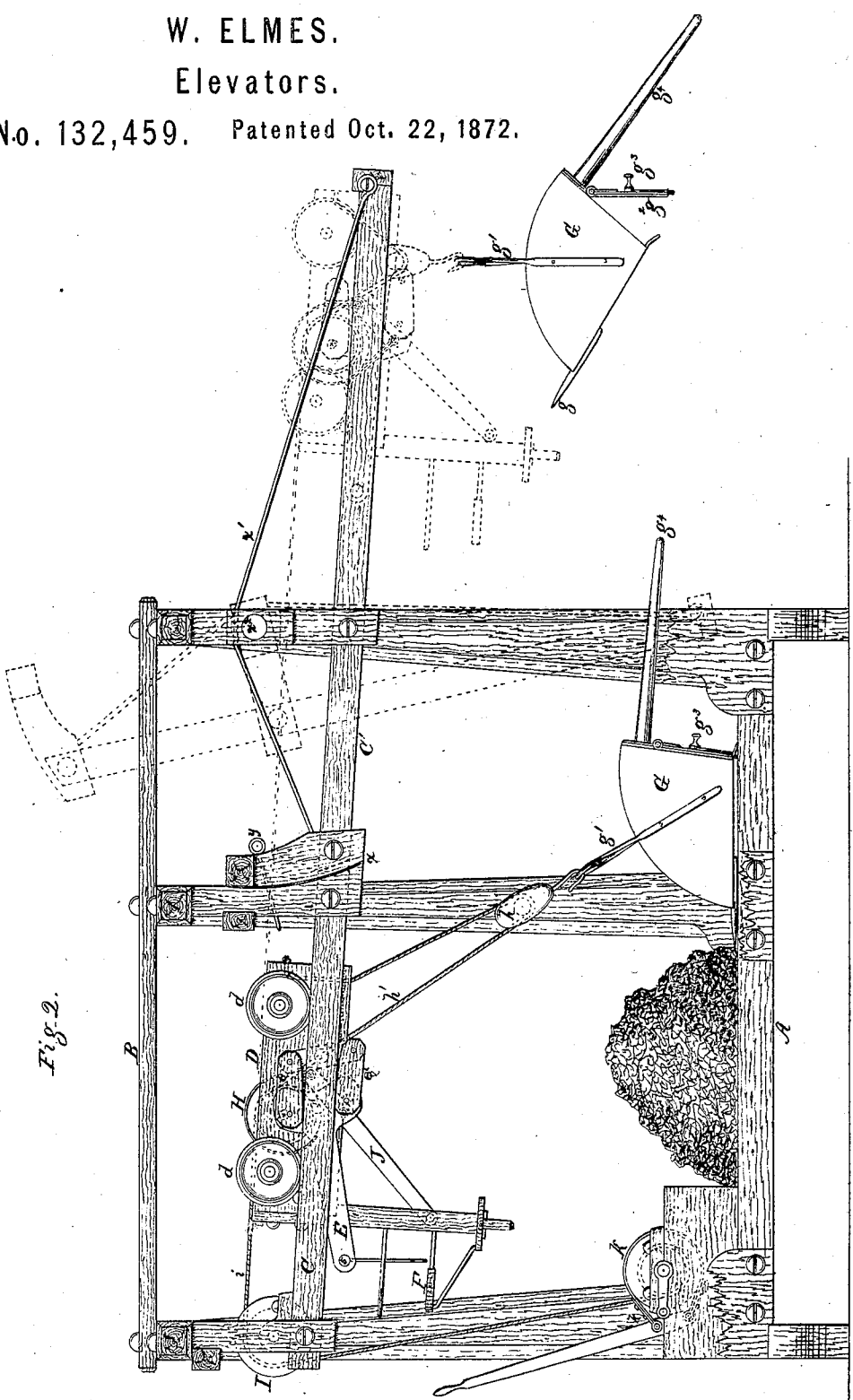


Fig. 2.

Witnesses.

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Fig. 4.

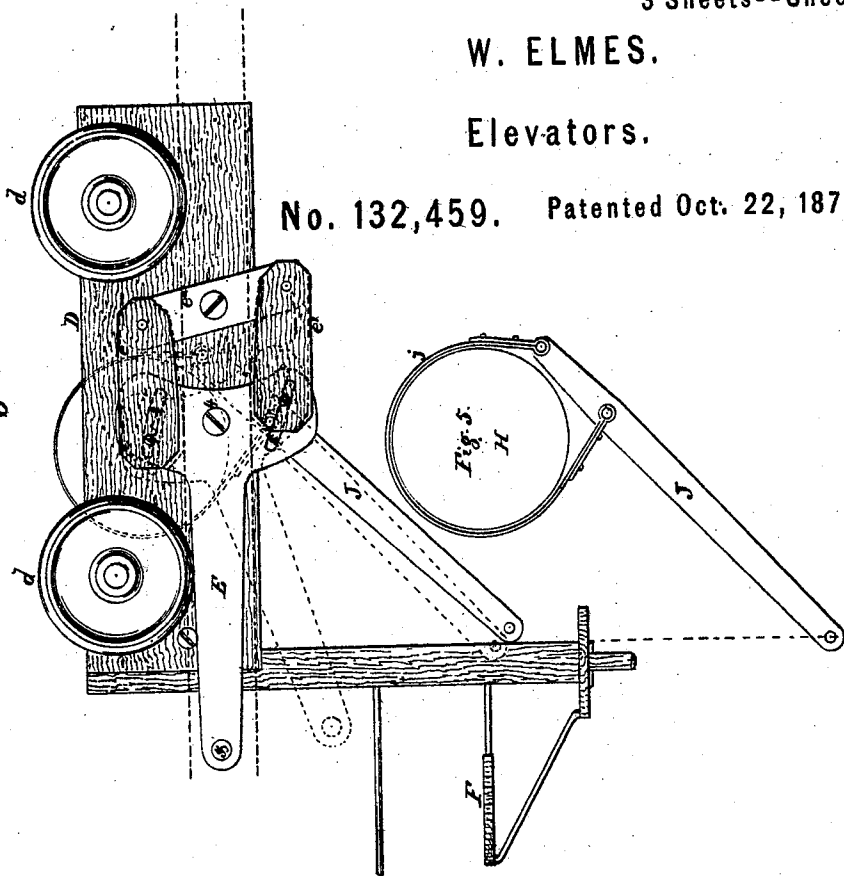
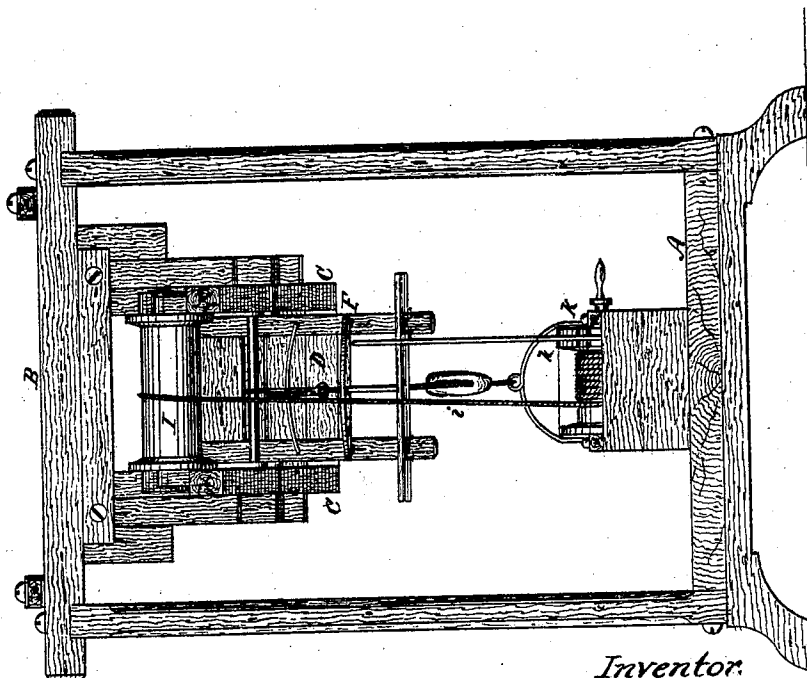


Fig. 3.



Witnesses.

Joel S. Ryton
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Inventor.

Wm. Elmes
by his Atty
Wm. D. Baldwin

UNITED STATES PATENT OFFICE.

WILLIAM ELMES, OF GEORGETOWN, ASSIGNOR TO HIMSELF AND ALEXANDER RAY, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **132,459**, dated October 22, 1872.

To all whom it may concern:

Be it known that I, WILLIAM ELMES, of Georgetown, in the District of Columbia, have invented certain new and useful Improvements in Machinery for Loading, Lifting, Carrying, and Dumping Coal and other articles, of which improvements the following is a specification:

My invention, although capable of being used for many other purposes, is more especially adapted to the loading of coal into a vessel from a wharf, or vice versa; and its object is to do this work in an efficient, economical way by mechanism, and thus dispense as much as practicable with hand-labor. The subject-matter claimed is hereinafter particularly specified.

The accompanying drawing of my improved apparatus shows all my inventions embodied in the best way now known to me. Obviously some of my improvements may be used without the others, and the details of construction of the mechanism may be varied somewhat, in ways well known to skillful constructors of such machinery, without departing from the spirit of my invention.

Figure 1 is a plan; Fig. 2, a side elevation; Fig. 3, an end elevation; Fig. 4, a side view of the truck; Fig. 5, a view of the brake; and Fig. 6, a view of the clamping-lever.

Over or upon a wharf or platform, A, a stout frame, B, is erected in such manner as to leave an unobstructed central space for the reception of a tram-way, C C', suspended beneath the frame, and so constructed as to leave the space between its rails clear. A truck, D, is made of such width as to traverse freely in the space between the rails of the tram-way, and its sides are of such depth as to extend above and below the rails, by which mode of construction its center of gravity is lowered and its lateral escape from the tram-way prevented. The truck is mounted on flanged wheels *d* which run upon the tram-way. The latter, it will be observed, inclines forward and downward at a slight angle, (say, about five degrees,) that the loaded truck may run forward with ease. To prevent accidents, brake-shoes *e e'*, arranged on each side of the truck above and below each rail of the tram-way, are pivoted at one end to a link, *e²*, fixed on the truck, and at the other carry pins 1 which work in slots 2 3 in a brake-lever, E, rocking

on a pivot, 4, on the truck. These levers extend behind the truck, and are connected by a cross-bar, 5. An attendant rides in a carriage, F, suspended from the truck, and controls its movements, as hereinafter explained. Fig. 4 illustrates the operation of this clamping-brake. A hod, G, (by preference constructed with teeth *g*; a fixed bail, *g¹*; a swinging gate, *g²*, fastened with a spring-catch, *g³*, and a guiding-handle, *g⁴*,) is suspended by a block, *h*, and hoisting-rope *h'* from the truck, to which one end of the rope is secured, while the other winds round a spool, H, mounted on the truck. A friction-band, *j*, embraces the spool, and is controlled by the attendant on the truck by means of its lever J. A track-rope, *i*, likewise attached to the spool H, runs over a roller, I, to a windlass, K, located in any convenient position, and driven by any suitable power and gearing. A coupling-clutch friction-brake, *k*, is applied to this windlass.

The following is the best method of working my apparatus: Supposing the position to be that shown in full lines in Fig. 2. An attendant guides the hod by means of its handle into the pile of coal; the attendant on the carriage clamps the truck to the track by the brakes E; the engineer starts the windlass, and the rope is wound around the spool H, dragging the hod into the coal, and, when full, lifting it clear of the pile. The attendant on the carriage then clamps the spool by means of the lever J, and thus holds the hod in its elevated position, simultaneously releasing the truck-brakes. The engineer then releases the windlass, the rope *i* unwinds, and the truck runs by its own gravity down the incline to the place of discharge, where the latch *g³* is tripped and the hod emptied. The dotted lines in Fig. 2 show this position. If the hod has been lowered the attendant clamps the truck on the track, the engineer starts the windlass, and the hod is lifted. The friction-brake is then applied to the spool, and the clamps *e e'* are released, when the truck is drawn up the incline by the engineer. The truck is then clamped on the track, the spool released, the hod descends, and the operation above described is repeated.

Under some circumstances—such, for instance, as where the distances to be traversed

always remain uniform—it may be advantageous to use devices automatically to stop the movements of the hod and truck, and to control the motive power and the discharge from the attendant's carriage on the truck. My invention contemplates the use of such devices when deemed expedient, their mode of application being well known to skillful constructors of such machinery. I have, however, in practice, in coal-hoisting, found the plan above described more practical, as the distance between the points of loading and discharging constantly varies. The tram-way in this instance, it will be observed, projects beyond the frame or wharf so as to extend over a vessel. In order that the tram-way may be removed out of the way when not in use, I divide it transversely at x ; brace the outer section C' by tie-rods x^1 ; hinge it to swing on a pivot, x^2 , so that it may turn into the position shown in dotted lines in Fig. 2, and lock it in place by pins y .

I claim as my invention—

1. The construction of the wharf, the frame, and the pivoted, suspended projecting section of the tram-way, as set forth, to project over the vessel while loading, and to swing out of the way when not in use.

2. The combination of the tram-way, the truck, and the clamping-shoes to lock it upon the rails, substantially as set forth.

3. The truck, constructed, as described, with a suspended carriage for the workman, to enable him to control the brakes, as set forth.

4. The combination of the tram-way, the truck, the hoisting-spool, and the winding-rope, substantially as set forth, to enable the attendant to regulate both the hoisting of the hod and the traverse of the truck.

5. The hod, constructed as described, with gathering-teeth, a guiding-handle, a fixed bail, a swinging door, and a latch.

6. The combination of the hod, the hoisting-rope, the truck, the clamping-shoes, the spool, its friction-brake, and the track-rope and windlass, substantially as set forth, to enable the attendant on the carriage to check the ascent of the hod, hold it up, and release the carriage to be drawn back.

In testimony whereof I have hereunto subscribed my name.

WILLIAM ELMES.

Witnesses:

E. C. DAVIDSON,
BALTIS DE LONG.