

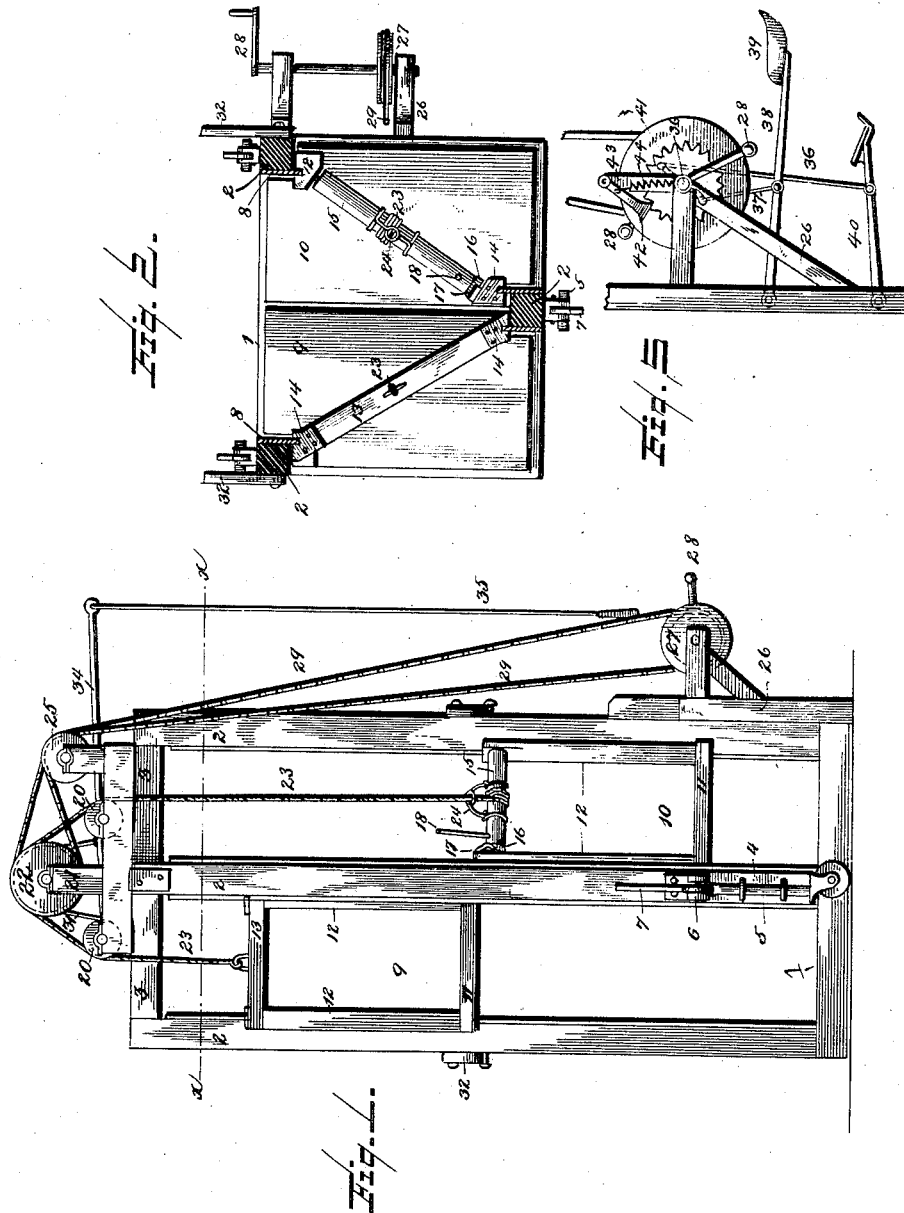
(No Model.)

2 Sheets—Sheet 1.

A. C. NEWTON.  
ELEVATOR.

No. 385,722.

Patented July 10, 1888.



Witnesses:

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Inventor:

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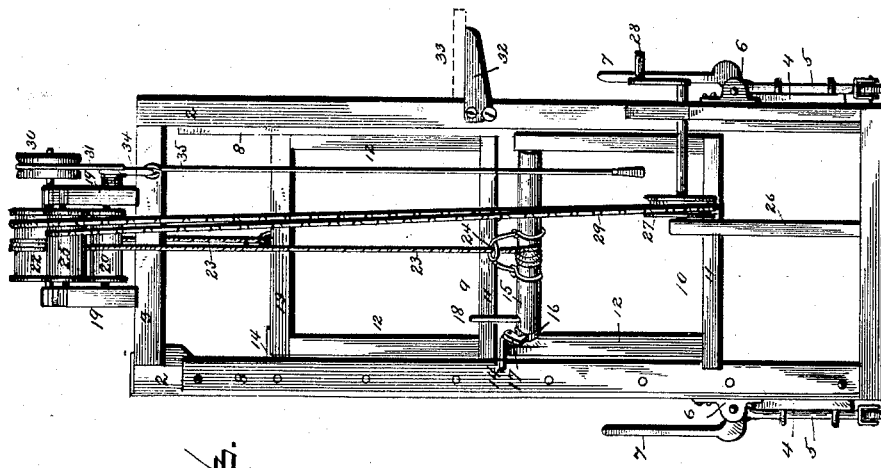
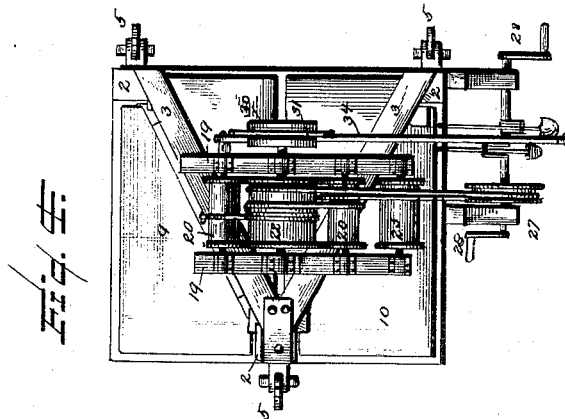
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2 Sheets—Sheet 2

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# UNITED STATES PATENT OFFICE.

ANDREW C. NEWTON, OF CRESCENT, NEW YORK.

## ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 385,722, dated July 10, 1888.

Application filed March 1, 1888. Serial No. 265,766. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW C. NEWTON, a citizen of the United States, residing at Crescent, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Elevators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has relation to freight-elevators, and is especially designed for use in raising and lowering brick from and into the hulls of vessels and for use in kilns for lowering or raising brick after they are dried.

15 The objects and advantages of the invention will hereinafter appear, and the novel features be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a front elevation of an elevator constructed in accordance with my invention. Fig. 2 is a transverse section on the line *xx* of Fig. 1. Fig. 3 is a side elevation; Fig. 4, a plan of the same, and Fig. 5 is an enlarged detail of the elevator-operating mechanism.

25 Similar numerals indicate like parts in all the figures of the drawings.

1 represents the base of the frame-work, which, for the purpose of stability, is rectangular. From two of the opposite corners of the base 1, and intermediate the corners of the opposite side of the base, are uprights 2, there being three in number, and forming, when joined at the top by tie-bars 3, a triangle.

35 Upon the outer face of each of the uprights 2, and near their lower ends, is secured a bracket 4, in which is adapted to slide the spindle of a caster, 5. Mounted above the bracket 4 in ears 6, secured to the uprights 2, is a pivotal cam-lever, 7, which, when thrown in a horizontal position, forces the casters below the surface of the base 1, thus raising said base and permitting the elevator to be rolled upon said casters from one point to another.

45 When the elevator has reached its destination, the levers 7 are swung to a vertical position and the base of the elevator lowered to the ground.

Secured to the sides of the uprights 2, and

50 extending inwardly, are guide-plates 8, in

which are mounted the elevator-cars 9 and 10. The cars 9 and 10 are supported at their two diagonal corners, (see Fig. 2,) and consist of the usual platform, 11, the sides 12, and the cross-bar 13. At the top of the cross-bar 13 there are mounted and project laterally slotted castings 14, which embrace vertical guides 8. The platform 11 of the car is also notched to embrace the vertical beams or uprights 2, so that said car is held in a vertical position for movement within said guides. At the opposite side of the frame-work is mounted the car 10. This car comprises in its make-up the side pieces, 12; but in lieu of the tie-bar 13 (shown in the car 9) a windlass, 15, connects said side pieces at their top or upper ends. This windlass is provided with a ratchet, 16, into which is adapted to take a gravity-pawl, 17, and is also provided with a lever, 18, by which it may be rotated and held in a desired position by the ratchet and pawl.

Mounted upon the tie-bars 3, at the top of the frame-work of the elevator, are cross beams 19, which are ranged opposite each other and provided with bearings, in which are mounted ordinary pulleys or sheaves, 20. Intermediate the sheaves 20 is an elevated bearing, 21, in which is mounted a drum, 22.

Connected to the cross bar 13 of the elevator-car 9 is a cable, rope, or sprocket-chain, 23, which passes up over one of the pulleys 20, is coiled around the drum 22 two or three times, and thence down over the opposite pulley 20, and wound around the windlass 15 of the opposite car, 10. A bail, 24, formed of wire, is mounted loosely upon the windlass 15, and is formed with an eye, through which the cable 22 passes, and is guided to its proper position upon said windlass, that will be hereinafter described.

At one end of the cross-beams 19 is located in suitable bearings a pulley or sheave, 25. In a frame-work, 26, secured to the upright 2 and to the base 1, is journaled a windlass, 27, having an operating-crank, 28, located at a suitable distance from the ground. The windlass may be either in the form of a sprocket, as shown, or have simply a plain surface, as is usual in such cases.

29 represents an endless sprocket-chain, ca-

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100

ble, or rope, which passes around the drum and sprocket-wheel 27, over the pulley 25, and around the drum 22, which, if desired, may also be provided with or formed as a sprocket, whereby a positive rotation thereof through the medium of said chain 29 and windlass 27 is assured. The pulley 25 is what may be termed a "twin pulley," to accommodate the endless chain 29, so that while one section of the pulley is working in one direction its companion is working in an opposite direction.

Mounted upon the shaft of the drum 22, and at one side thereof, is a brake wheel or pulley, 30, over which passes a brake-strap, 31, the ends of which are secured to a pivoted brake-lever, 34, from which depend an operating-rod, 35, which is within easy reach of the operator standing in position at the operating-crank 28.

Taking, for example, the operation of lowering brick within a kiln, we will suppose that a wheelbarrow of brick is rolled upon the car 9, and an empty barrow is rolled upon the car 10. The weight of the brick will be sufficient to lower the car 9 and raise the car 10, through the medium of the cable 23, the lowering motion being regulated by the operator through the medium of the brake-operating rod 35. The operation is repeated until the pile of brick is diminished to such an extent as is desired. As the pile grows less, it becomes necessary to have the cars automatically stopped at a point convenient to the height of the pile. Now, by making the cable 23 longer, which is done through the medium of the windlass 15, the bottom of one car may be made to reach the base at such a time when the bottom of the opposite car is at the desired point, inasmuch as when taking, for instance, the car 10, which we will suppose to be loaded, reaches the bottom or base 1, no further pull or weight is exerted upon the cable 23, and the upward motion of the car 9 is consequently stopped. To permit the cars to go the full height of the frame-work, the cable 23 is wound upon the windlass 15 the desired number of times. Secured to the outer sides of the two opposite beams, 2, and pivotally connected thereto, are brackets 32, which may be swung up out of position against said uprights or down into position, as shown in Fig. 3. A board, 33, is laid transversely across these brackets and serves as a rest or support for one end of any ordinary plank or gangway leading from the brick-pile over which the bricks are carried.

In Fig. 5 and also in Fig. 4 I have shown mechanism for operating the elevator, and it differs from that before described in that the sprocket or drum 27 is mounted upon a crank-shaft, 36, to the cranks of which are connected pivotal rods 37 38. The rod 37 is pivoted to an arm, 38, upon the outer end of which is mounted a seat, 39, for the operator,

and the opposite end of the arm or lever 38 is pivoted to the frame-work 26. The other depending rod, 36, is connected at its lower end to a treadle, 40. In this instance also the crank-shaft 36 is provided with operating-crank 28 at each of its ends, and also with a toothed wheel or ratchet, 41, at one end, into which is adapted to take a double-toothed pawl, 42, pivoted to a vertical arm, 43, mounted on the frame-work 26. A spring, 44, connected to the pawl 42 intermediate its pivot and working ends serves to retain the pawl in mesh with the ratchet-wheel. By the pivoting of the pawl 42 the same may be reversed to engage with the ratchet-wheel at either side of the arm 44, thus adapting it either for raising brick from the hold of a vessel or from a kiln. The two cranks on the shaft 36 are set at about a quarter of a revolution apart, as are also the two end cranks 28, so that the weight of the operator serves to revolve the drum one-fourth around, his foot upon the treadle the second fourth, his hand the third fourth, and his remaining hand completes the revolution, thus avoiding dead-centers. Although I have described these means of operation to facilitate operating the elevator-cars, yet I do not confine my invention in this respect, but hold that various other means may be employed to accomplish the same results.

Having described my invention, what I claim is—

1. In an elevator, the combination of a three-cornered frame-work, with an elevator-car mounted therein and having bearing in said frame-work at opposite diagonal corners of the car, substantially as specified.

2. In an elevator, the combination of a three-cornered or triangular frame-work, with a pair of elevator-cars mounted therein and taking bearing at diagonally-opposite corners, substantially as specified.

3. In an elevator, the combination, with the frame-work thereof, of a pair of elevator-cars mounted for movement therein, a cable connecting the cars and passing over a drum mounted on the frame-work, and an endless cable or chain passing over the drum, and a windlass for operating the same, substantially as specified.

4. In an elevator, the combination of the frame-work provided with two elevator-cars connected by a cable, a drum arranged upon the frame-work over which said cable passes, an endless belt or cable for operating the drum, and a windlass or pulley having an operating-crank for operating the cable, substantially as specified.

5. The combination, with the base 1, having the uprights 2, arranged in triangular form, arranged as described, and connected by the tie-bars 3, of the drum 22, pulleys 20, all mounted in the cross-pieces 19, the cable 23, the endless belt 29, for operating the drum,

and the windlass 27, for operating the belt, substantially as specified.

5 6. In an elevator, the combination of the frame-work 26, the crank-shaft 36, having the drum 27, operating cranks 28, ratchet-wheel 41, and pawl 42, mounted on the arm 43, and having the spring 44, with the connecting-rods 37 and 36, the former connected with the lever 38, having seat 39, and the latter connected

with the pivoted treadle 40, substantially as is specified.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW C. NEWTON.

Witnesses:

C. A. WALDRON,  
JOHN HIGGINS.