(No Model.) 2 Sheets—Sheet 1.

C. E. ALBRO.

ELEVATOR.

No. 453,457. Patented June 2, 1891.

FIG. 7.

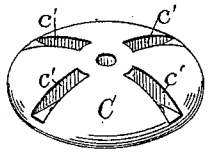


FIG. 1.

FIG. 9.

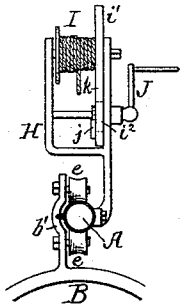


FIG. 2.

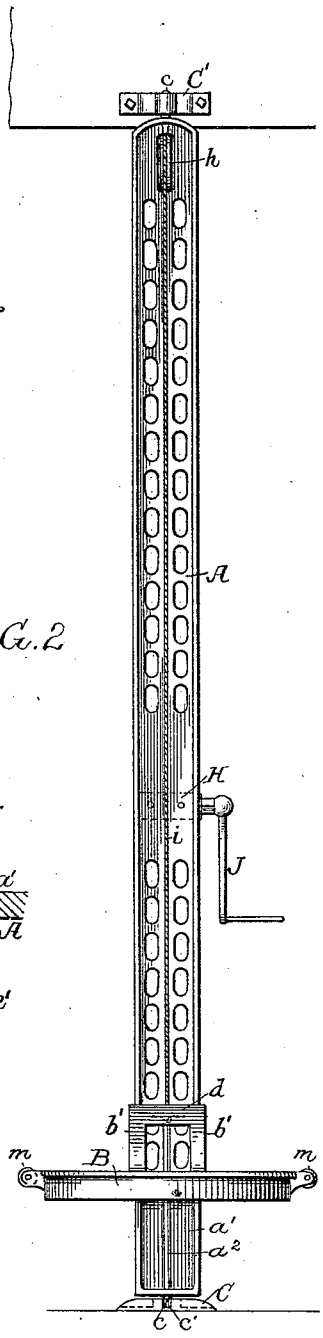
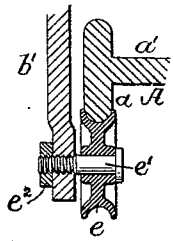


FIG. 8.



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(No Model.) 2 Sheets—Sheet 2.

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FIG. 3.

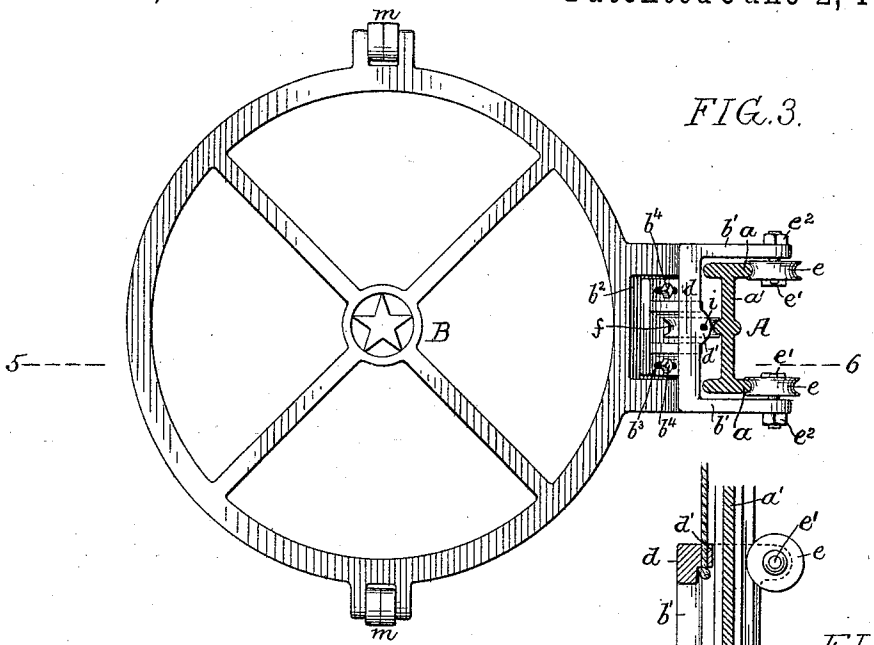


FIG. 5.

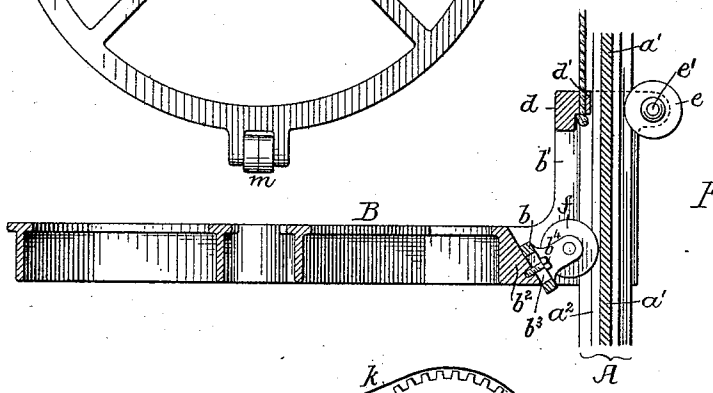


FIG. 6.

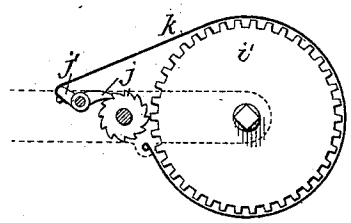
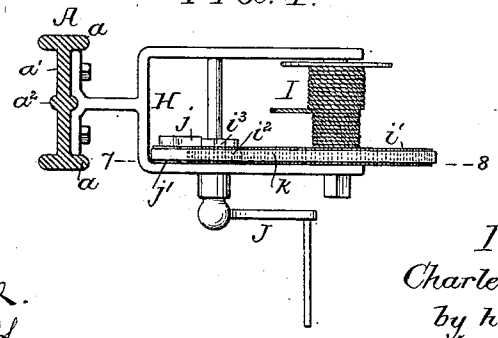


FIG. 4.



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UNITED STATES PATENT OFFICE.

CHARLES E. ALBRO, OF PHILADELPHIA, PENNSYLVANIA.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 453,457, dated June 2, 1891.

Application filed February 25, 1891. Serial No. 382,687. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. ALBRO, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Elevators, of which the following is a specification.

The object of my invention is to construct an elevator or lift in the form of a crane that can be used in the cellars of dwelling-houses or office-buildings for lifting ashes from the cellar to the street; but it will be understood that the device can be used for other purposes without departing from my invention.

In the accompanying drawings, Figure 1 is a side view of my improved elevator. Fig. 2 is a front view. Fig. 3 is an enlarged sectional plan on the line 1 2, Fig. 1. Fig. 4 is a sectional plan on the line 3 4, Fig. 1. Fig. 5 is a section on the line 5 6, Fig. 3. Fig. 6 is a section on the line 7 8, Fig. 4. Fig. 7 is a perspective view of the step-plate. Fig. 8 is a sectional plan of adjusting-screw for sheave, and Fig. 9 is a view of a modification.

The device consists of a standard on which travels a platform, the standard being on pivots, and is preferably arranged in close proximity to the cellar-window, so that when the platform is raised to the height of the window it can be swung around into the window-opening, from which the receptacle containing the ashes or other material can be readily removed and discharged, and by swinging the platform into the cellar again it can be lowered ready for a second load.

Referring to the drawings, A is the mast or standard, made in the form of an I-beam, the central web a' having at each side a rounded raised rib a^2, and the beam may be lightened by forming openings on each side of this rib, as clearly shown in Fig. 2. The mast is provided with journals c c at each end, the lower journal being adapted to a step-plate C, (clearly shown in Fig. 7,) the upper journal being mounted in a suitable bearing C′, which can be secured to the joist or ceiling of the cellar. As will be noticed on reference to Fig. 7, the step-plate C has a number of recesses c', and carried by the mast A is a pivoted pawl c^2, one arm of which engages with one of the notches c' in the plate C. The other arm c^3 projects outward and can be readily operated by the foot, so that when the mast is to be swung around the operator lifts the arm c^3, throwing the pawl out of engagement with the notches, allowing the mast to turn, the pawl dropping into one or other of the notches, holding the mast in position.

Adapted to travel on the mast A is a platform B, which is provided with two arms b', extending one on each side of the mast. Mounted on each arm is a wheel e, having a grooved face adapted to the rounded edge of each of the rear flanges a of the mast A, as clearly shown in Fig. 3. These wheels are preferably mounted, as shown in Fig. 8, on a bolt e', carried at the upper extremity of the arm b'. This bolt e' screws into the arm, and is provided with a jam-nut e^2, so that the wheels e e can be adjusted on the arms to adapt them to the mast A, so that the arms will not strike the mast.

b is an adjustable bearing for a wheel f, having a grooved face, which is adapted to the rib a^2 on the mast. This bearing is mounted on an inclined seat b^2 on the platform B and has slots b^3, through which the securing-bolts b^4 pass into the seat b^2. Thus I am enabled to make the several parts without accurate fitting, and after the parts are prepared and when put together the bearing b can be so adjusted that the wheels e and f will run evenly on the ribs of the mast.

In some instances on very light or small elevators the wheels may be discarded and simple bearing-faces used.

Secured to a cross-bar d, tying the upper ends of the arms b' together, is a lug d', having an opening through which passes the elevating-rope i. This elevating-rope extends to the upper portion of the mast and passes around a sheave h, journaled in suitable bearings on the mast, to the rope-drum I, preferably provided with gear-wheels i', meshing with a pinion i^2. The rope-drum and pinion are adapted to bearings in the bracket H, secured to the mast. The shaft of the pinion and the shaft of the drum are so formed that a handle J can be applied to one or the other for raising or lowering the platform B.

As shown in Fig. 6, the pawl j engages with the teeth of the ratchet-wheel i^3, preventing back motion, said pawl having an arm j', to which is secured a band k, adapted to pass around the drum, which is secured to the

bracket H, so that when the platform is raised to its proper position the pawl can be thrown out of gear with the ratchet-wheel i^3, at the same time applying the band to the drum, forming a friction-brake for the same, so that the platform cannot be raised or lowered without first loosening the band. There is a slight lost motion between the band and the wheel to allow for the free motion of the pawl. When the elevator is at rest, the pawl can be thrown out and a friction-band applied, thus locking the parts.

The platform is provided with anti-friction rollers m m, so that the box or receptacle can be readily removed from the platform.

In Fig. 9 I have shown the mast A in the form of a ribbed tube, with rollers adapted to each side of the tube, the platform being guided by the rib on the mast.

By placing the elevator, as above described, near the window or other opening ashes or other substances can be readily removed from the cellar or other place by simply placing the receptacle on the platform, raising said platform by the mechanism described above, and when the platform has reached the required height turning so that the load can be readily removed through the window or other opening. If the opening is on the pavement, the mast can be so arranged in respect thereto that the platform can be raised and moved directly under the opening and project the receptacle through the opening.

I claim as my invention—

1. The combination, in an elevator or lift, of the pivoted mast, a platform having bearings at its lower end adapted to the front portion of the mast and a bearing at its upper end adapted to the rear portion of the mast, a lifting-rope attached to the upper portion of the platform at the front, passing around a pulley at the upper end of the mast to a winding-drum, and brackets supporting said winding-drum, the whole arranged substantially as set forth.

2. The combination, in an elevator, of the mast, platform B, ribs a a and a^2 on said mast, the two ribs a a being on one side of the mast and the rib a^2 on the opposite side, a flanged wheel f on the platform, adapted to the rib a^2, and arms extending on each side of the mast, having flanged wheels e e adapted to the ribs a a, with mechanism for raising and lowering the platform, substantially as described.

3. The combination, in an elevator, of the ribbed mast, pivots therefor, a platform, arms thereon extending on each side of the mast, wheels on said arms adapted to the rear ribs of the mast, a bearing adjustably secured to the platform, and a roller carried thereby and adapted to the front rib of the mast, whereby the platform can be adjusted in respect to the mast, with mechanism for raising and lowering said platform, substantially as described.

4. The combination, in an elevator, of the mast, the platform, a rope or chain attached to the platform, a pulley at the upper end of the mast, around which the rope passes, a drum on which said rope or chain is wound, bearings for said drum and operating-shaft, gears connecting the operating-shaft to the drum, a pawl engaging with ratchet-teeth on the gear, and a friction-band attached to a fixture at one end and passing over the rope-drum and attached to the pawl at the opposite end and so arranged that when the pawl is thrown out of gear the band is thrown into frictional contact with the drum, substantially as described.

5. The combination of the mast, ribs thereon, a platform, arms extending from said platform at each side of the mast, wheels adapted to the ribs on the mast, and screw-studs carrying the wheels, said studs adapted to screw-threaded orifices in the arms, whereby the wheels can be adjusted in respect to the mast, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. ALBRO.

Witnesses:
JNO. E. PARKER,
HARRY SMITH.