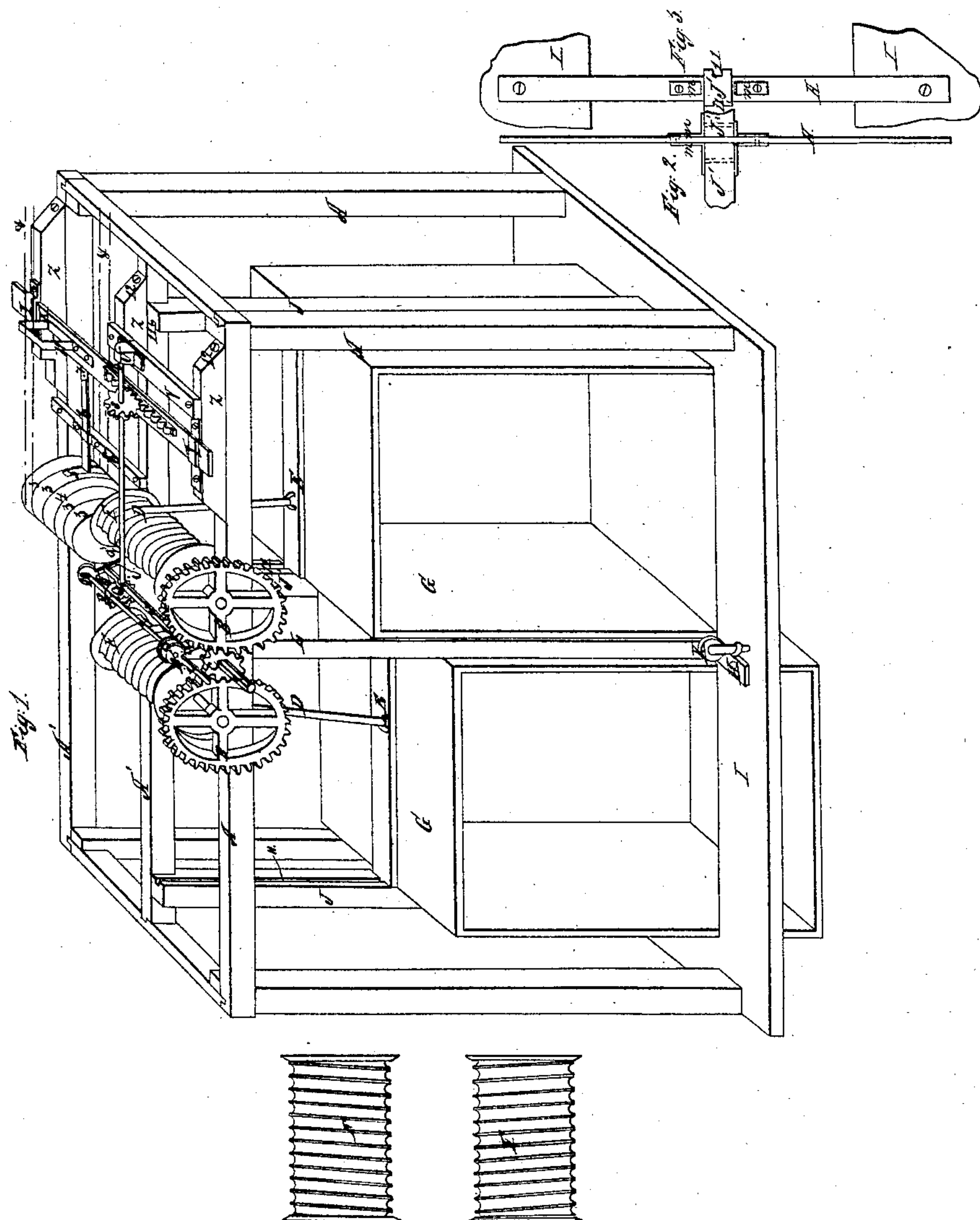


*H. Malley,*  
*Elevator,*  
*Nº 62,549,*

*Patented Mar. 5, 1867.*



*Witnesses:*  
*A. L. Chapin*  
*Albert Hayward*

*Inventor:*  
*Henry Malley*

# United States Patent Office.

HENRY MALLEY, OF CHICAGO, ILLINOIS.

*Letters Patent No. 62,549, dated March 5, 1867.*

## IMPROVEMENT IN HOISTING MACHINE.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, HENRY MALLEY, of Chicago, in the county of Cook, and State of Illinois, have invented a new and useful improvement on Lifting Machine; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure I is a perspective representation of my improved lifting machine.

Figure II is a longitudinal elevation of the cross-tie attached to the floor, showing how the central guides are connected.

Figure III is a plan view of the same.

The nature of my invention consists, first, in placing the reverse pulley between the spiral grooved drums, and connecting it with suitable gearing, in order that the brake used for checking the motion of the machine may be operated by means of a chain or rope passing over the reverse pulley and down between the platforms, in a convenient position to be reached from either by a person standing therein. This first arrangement is important from the fact that the platforms cannot be successfully operated when the chain passing over the reverse pulley is arranged in any other position than between them, because a person passing up or down in the platforms must necessarily be able to control their direction. Second, in connecting and supporting the central guide by means of cross-ties and knees, in order that each section of the machine may be arranged to suit the different heights of stories in the building in which it is placed. The entire machine, as constructed, forms a simple and effectual means of elevating and lowering goods and merchandise in warehouses and hotels of one or more stories.

In the drawings, only one story is represented, I being the floor. A A' represents the frame supporting my lifting machine. G G show the platform boxes in which the merchandise is put when the same is to be elevated or lowered. F shows the right and left-hand spiral grooved drums, on which the rope or chain D operates. These drums F have the usual suitable shafts, resting in boxes attached to the upper part of the frame A A'. B represents cog-wheels attached to the shafts passing through the drums F. These cog-wheels are made to operate the drums in the proper direction for lowering either of the platforms G, while the other is passing upward, by means of the small cog-wheel C attached to the shaft 9, passing through the pulleys 3, 3, 4, 3, 2, the pulley 4 being the only one secured to the shaft 9, the other pulleys being loose ones, used for the convenience of changing the direction of the belt. i represents inclined standards terminating in the circular head 10, in which are made bearings for supporting the shaft o, to which is attached the reverse pulley 15. L is the chain or rope passing over the reverse pulley 15, and around under the pulley K, used for reversing the direction of the platforms G and operating the brake. P shows the bevel cog-wheel attached to the shaft o, which operates the bevel cog-wheel Q attached to the shaft r. n shows the tie secured to the braces i which support one end of the shaft r, the other end being supported by the box U, resting upon the cross-tie V. S shows the ratchet-wheel which operates the rack t attached to the slide X operating in the loops y. W is the band-guide attached to the slide X, used for throwing the band on and off of the tight and loose pulley 3, 4, &c. 6 represents the brake-bar attached to the slide X by means of the joint 7, extending through a cap attached to the cross-bar 8 and connected permanently to the brake 5. J J' J represent vertical guides in which are made the grooves 11, for receiving tongues projecting outward from the platforms G, in order to prevent a lateral motion. H shows the cross-tie secured to the floor I, by means of bolts or otherwise, in a substantial manner. The object of this is to form a substantial support for the ends of the central guide J'. This arrangement is necessary, because when the machine is adjusted in a building containing more than one floor, the central guide J' would otherwise be too weak to properly support the platforms G in their upward and downward passage. But by using a central guide J' for each story, and connecting the same to the cross-tie H by means of the cast-iron elbows m with suitable bolts, a strong support is provided for guiding the inner sides of both platforms. It will be seen that the opposite ends of the drum F are placed nearly over the centre of the platforms G. This is done in order that the ropes D attached to the platforms G at E may be as perpendicular as possible when the platforms are elevated to their extreme height.



*Operation.*

Any power may be used for elevating which will properly operate the pulley 4. Two bands must be used, running in opposite directions, in order that the motion of the platforms may be reversed, which may be accomplished by turning the reverse pulley 15 by means of the chain L; this will operate the devices above described so as to move the band-shifter W far enough to throw the bands on or off the pulleys 3 4 in the usual manner, at which time the brake 5 will operate against the tight pulley 4 and check its motion. The weight to be raised can be put in platform boxes G in the usual manner.

Having thus fully described my device, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The general arrangement and combination of the reverse pulley 15, standards *i*, shaft *o*, with the wheels P Q, tie *n*, and shaft *r*, when used to operate the ratchet S and rack *t* and slide X, as and for the purpose set forth.
2. The sectional guides J' in combination with the cross-tie H and elbows *m*, substantially as described and set forth.

HENRY MALLEY.

Witnesses:

A. L. CHAPIN,

ALBERT HAYWARD.