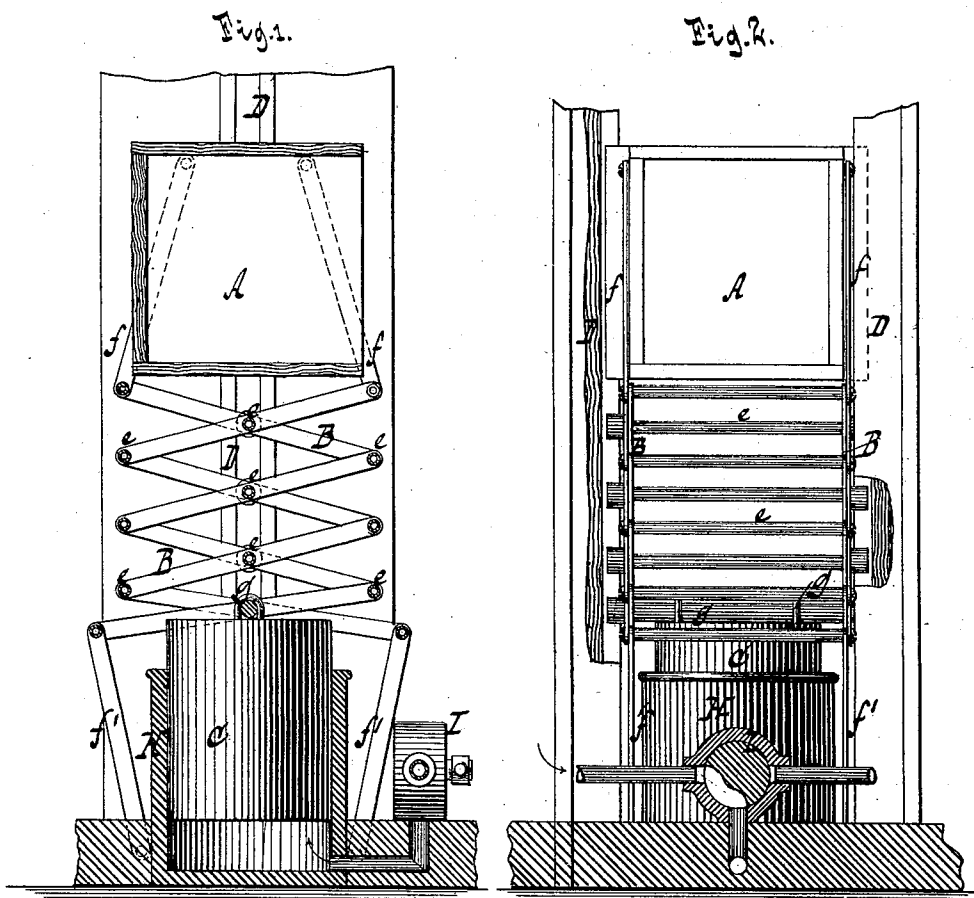


S. B. CONOVER.
Elevator.

No. 226,981.

Patented April 27, 1880.



Witnesses

Otto Aufeland
William Miller

Inventor
Stephen B. Conover
by *Van Santvoorde Haupt*
his attorney

UNITED STATES PATENT OFFICE.

STEPHEN B. CONOVER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-THIRD OF HIS RIGHT TO JOHN P. ELMENDORF, OF WESTCHESTER, NEW YORK.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 226,981, dated April 27, 1880.

Application filed February 11, 1880.

To all whom it may concern :

Be it known that I, STEPHEN B. CONOVER, of the city, county, and State of New York, have invented a new and useful Improvement in Elevators, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical central section of my elevator. Fig. 2 is a front view thereof.

Similar letters indicate corresponding parts.

My invention is adapted to all classes of elevators; and it consists in the combination, with the car or platform of the apparatus, of vertically-projecting lazy-tongs, the top and bottom limbs of which have a pivotal connection with the elevator-car and frame, respectively, and lifting mechanism connected to the lower central pivot of the lazy-tongs, so that while the car may be readily elevated through the medium of the lazy-tongs the least amount of power is required for that purpose, owing to the operation of the lifting mechanism in the direction of movement of the car.

The lifting mechanism consists of a piston, which is connected to the lower central pivot of the lazy-tongs and inclosed in a suitable cylinder, so that the apparatus may be worked by the direct action of a fluid under pressure.

In the drawings, the letter A designates the elevator car or platform, B the lazy-tongs, and C the lifting-piston.

The car A is arranged to move in vertical guideways D D, and may be of any usual or suitable construction.

The lazy-tongs B extend in a vertical direction, and are arranged in two sets, connected together by traverses e, which constitute the pivots of the lazy-tongs, and are guided in the ways D D.

The top limbs of the lazy-tongs B are connected to the elevator-car A by pivoted links f, while the bottom limbs of the lazy-tongs are connected to the elevator-frame by pivoted links f'; but if, desired, the links f f' may be omitted, and the lazy-tongs connected directly to the car and frame. In this example the lower links, f', are connected to the bottom of

the elevator-frame; but they can also be advantageously connected to the sides of the frame above the bottom by pivots working in suitable slots.

The lifting-piston C is connected to the lower central pivot, e, of the lazy-tongs by couplings g g, the piston being situated beneath the lazy-tongs, and the axis thereof being in the plane of the center of the lazy-tongs. Said piston C is fitted and works in a cylinder, H, to which is connected a cock, whereby it is adapted to be supplied with water or other fluid under pressure for raising the piston. When the piston C rises it acts upon the lazy-tongs B to lift the elevator-car A in a well-known manner.

By the connection of the piston C to the lower central pivot, e, of the lazy-tongs the lifting power is applied at that point and operates in the direction of movement of the car.

Heretofore lazy-tongs elevators have been constructed in which the ends of the upper limbs of the tongs have had a pivotal connection with the carriage or car, and the depending free ends of the lower limbs have been connected with the ends of ropes or chains, which are passed around a windlass, so that by turning the latter to wind up the ropes or chains the free ends of the lower limbs of the lazy-tongs will be drawn toward each other, and the tongs thereby extended, and the carriage or car elevated, and thereby the entire lifting power is applied at the ends of the limbs to draw such ends toward each other.

The old arrangement referred to leads to the expenditure of considerable power for operating the lazy-tongs, of which I effect a material saving by my arrangement of the lifting mechanism.

The cock I is a three-way cock, and in one of its positions it allows the fluid, as water or steam, to enter the cylinder H for operating the piston C, while in another position it allows the fluid to escape from the cylinder.

It may be remarked that other mechanical equivalents may be substituted for the lifting-piston and cylinder; but this mechanism is preferable, owing to the simplicity of its construction and operation.

I do not claim, broadly, the use of lazy-tongs in elevating apparatus, such being old; but

5 What I claim as new, and desire to secure by Letters Patent, is—

10 1. In an elevator, the combination, with the lazy-tongs having the ends of the lower limbs provided with a pivotal connection with the stationary base of the elevator-frame and the
15 ends of the upper limbs provided with a pivotal connection with the car, of mechanism connected with the central pivot of the lower limbs and operating in the direction of the movement of the car, and acting to forcibly lift the central pivot in a vertical path, substantially as and for the purpose described.

2. The combination, with the car of an elevator, of lazy-tongs, the top and bottom limbs of which have a pivotal connection with the elevator car and frame, respectively, a lifting- 20 piston connected to and acting on the lower central pivot of the lazy-tongs, and a cylinder to the piston, substantially as and for the purpose described.

In testimony that I claim the foregoing I 25 have hereunto set my hand and seal this 9th day of February, 1880.

STEPHEN B. CONOVER. [L. S.]

Witnesses:

W. HAUFF,
CHAS. WAHLERS.