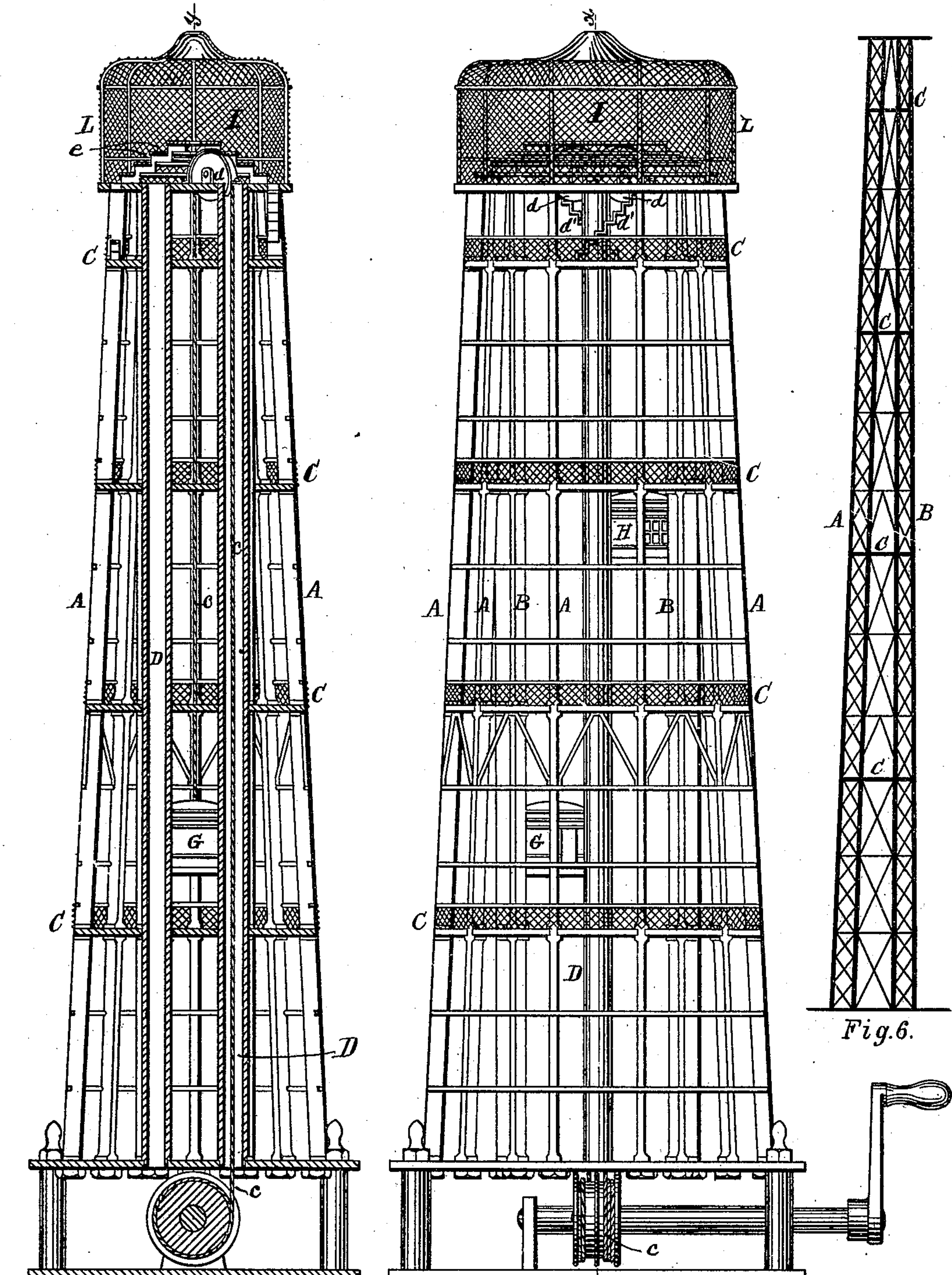


L. B. SAWYER.
ELEVATOR TOWER.

No. 175,765.

Patented April 4, 1876.



Witnesses. § Fig. 2.

Wm. B. Edwards
C. A. Kemmenway.

Fig. 1. §

Inventor.

L. B. Sawyer
by his Attorney
N. G. Lombard

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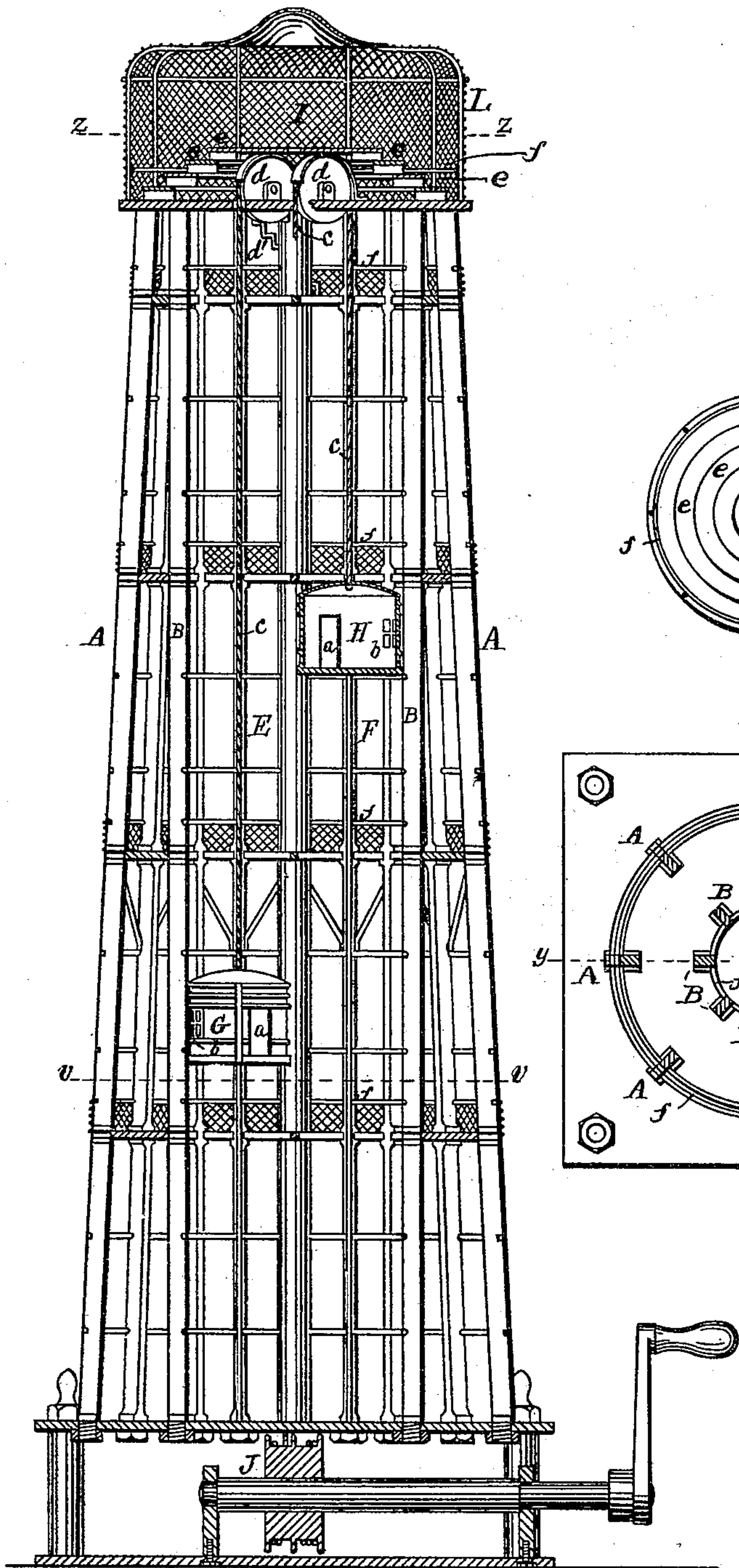


Fig. 3.

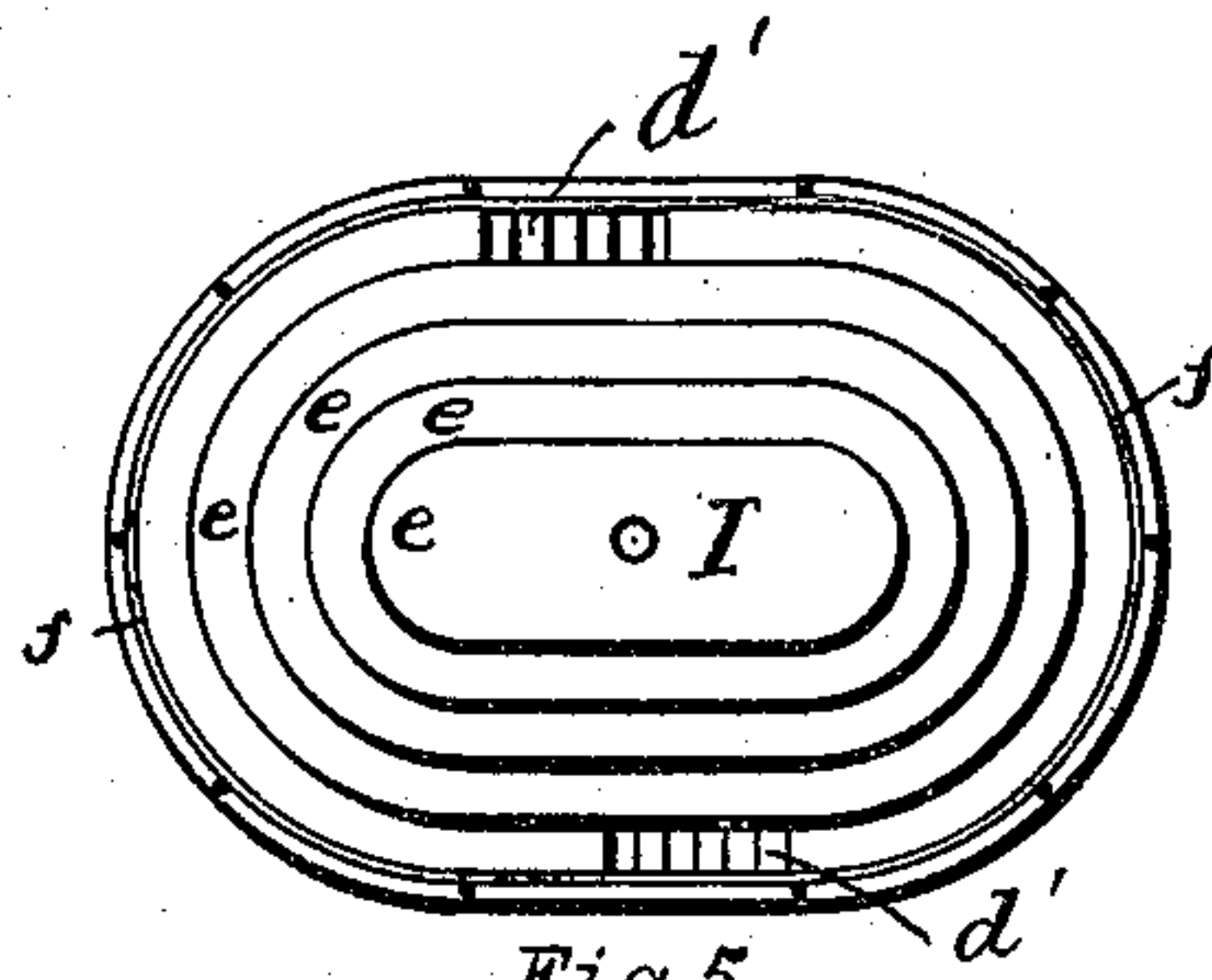


Fig. 5.

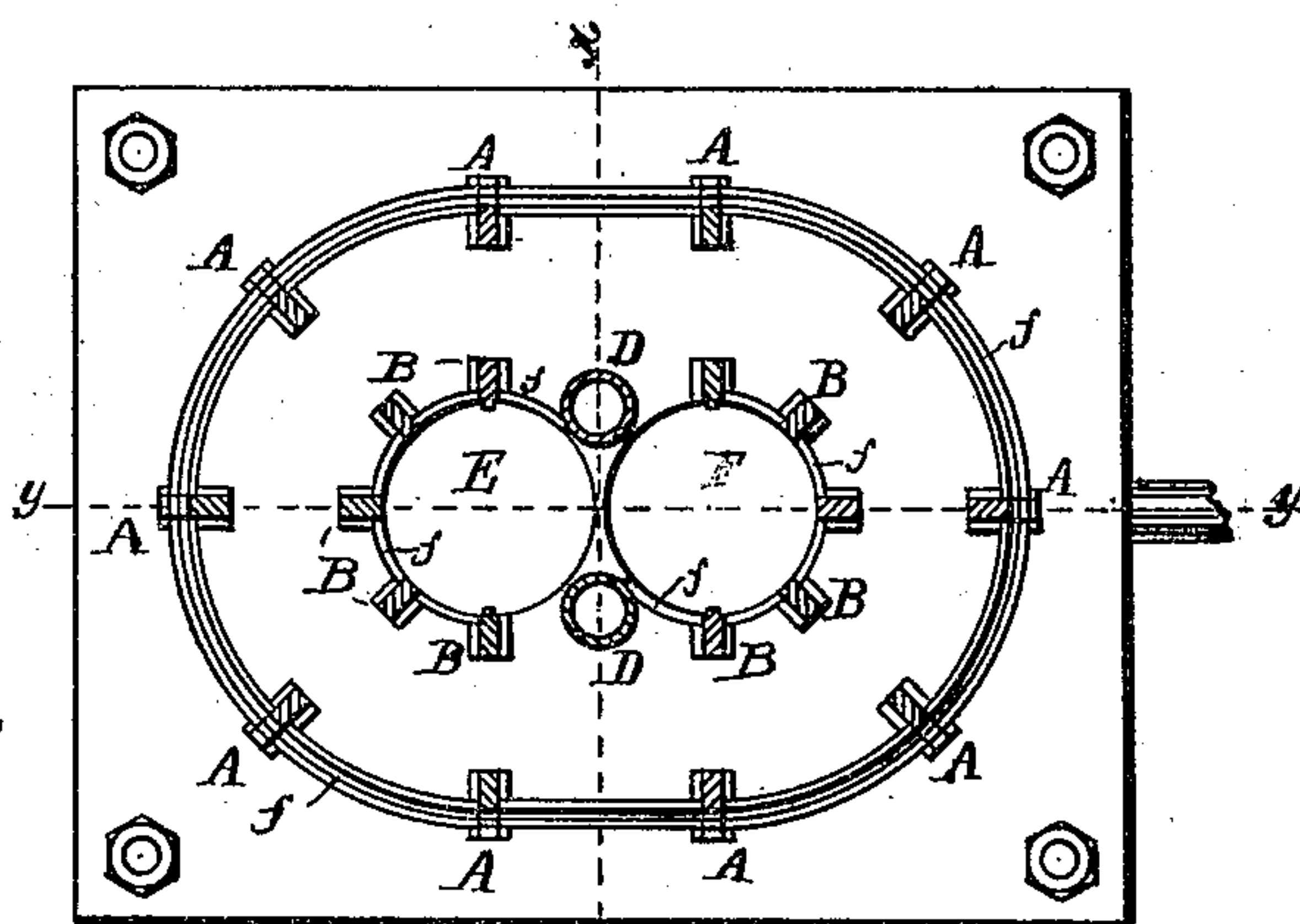


Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

LEMUEL B. SAWYER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ELEVATOR-TOWERS.

Specification forming part of Letters Patent No. **175,765**, dated April 4, 1876; application filed December 20, 1875.

To all whom it may concern:

Be it known that I, LEMUEL B. SAWYER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful structure, which I call Aerial Galleries, of which the following, taken in connection with the accompanying drawings, is a specification:

My invention relates to a structure for the convenience of persons who wish to view a town and the surrounding country from an elevated stand-point.

In all large cities and towns the highest buildings, and often the steeples of the churches, are resorted to for the purpose of obtaining a bird's-eye view of the town and surrounding scenery, but the number that can be accommodated, or that will avail themselves of the accommodation, when to do so they have to perform the laborious task of climbing to the elevated position up long, crooked, and winding staircases, and often through dark passages, is very limited.

The object of my present invention is to supply the want, heretofore felt, of a place where large numbers of people can be safely and expeditiously raised to a sufficiently elevated position to obtain a good view of the city, without the severe toil of climbing, but instead they can sit or be quietly at rest and view the scenery as they are moving up or down.

Letters Patent of the United States were granted to me on the 9th day of October, 1866, numbered 58,680, for an observatory, in which these advantages were obtained to a certain extent, but its capacity was limited; hence the present invention, which consists of a skeleton tower of great height, made up of a series of trussed columns or supports surrounding and radiating from one or more well-rooms, up and down which elevator-cars are moved by steam-power for the purpose of transporting passengers from the ground to a point near the top of the structure.

My invention further consists in providing the skeleton structure with galleries or floors surrounding said well-rooms at intervals, where passengers may land and tarry for a time before going higher, said galleries being inclosed,

to a sufficient height for safety, with wire-netting, or other suitable open-work guard, to prevent accidents.

My invention further consists in building upon the top of the tower, above the sheaves that support the elevator-cars, a room completely inclosed with wire-netting or other suitable open-work guard, which, while it shall be a protection against accidents, shall present little or no obstruction to the view, and also shall present but little surface for the wind to act upon.

My invention further consists in making the floor of this upper inclosure in the form of a series of steps running around the room and rising toward the center of the room, so that those persons standing in the center of the room can look over the heads of those in front, or near the outer circumference of the room.

Figure 1 of the drawings is a side elevation of my improved observatory or aerial galleries. Fig. 2 is a vertical transverse section on line *x x* on Figs. 1 and 4. Fig. 3 is a vertical longitudinal section on line *y y* on Figs. 2 and 4. Fig. 4 is a horizontal section on line *v v* on Fig. 3, and showing a plan of the lower gallery. Fig. 5 is a horizontal section on line *z z* on Fig. 3, and showing a plan of the top inclosure; and Fig. 6 is a side elevation of one of the trusses, showing the manner of bracing, &c.

A A are the outer posts of the trusses, and B B the inner posts, said outer and inner posts being connected together and to each other at each floor or gallery C, and at one or more points between said galleries, by horizontal girders, the whole being suitably braced to form a trussed structure. D D are two hollow tubes, made, preferably, of boiler-iron, riveted firmly to the bed-plate at the base, and to be connected together and to the inner posts of the four contiguous trusses by suitable horizontal girders and diagonal bracing. These tubes extend upward to the under side of the floor of the upper inclosure, and, together with the inner posts of the several trusses, receive and support the horizontal beams (not shown in the drawings) upon which the bearings for supporting the sheaves over which

the suspension-ropes pass are mounted. In the center of the skeleton structure are built two well-rooms, E F, extending from the lower floor up to and through the upper-gallery floor C. G H are two passenger-elevator cars, provided with entrance-doors *a a* and windows *b b*, said windows extending entirely around the car except the space occupied by the door or doors, the upper portions of which would also be glazed. These cars are suspended by suitable steel-wire ropes *c c*, which pass over sheaves *d*, mounted in suitable bearings upon suitable frame-work just beneath the floor of the top inclosure I, and thence descending through the tubes D D, or at other convenient points, are wound onto the drum J, to which motion may be imparted in any well-known manner.

The suspension-ropes *c c* wind onto the drum J upon opposite sides thereof, so that when said drum is set in motion in either direction, one of the ropes *c* is being wound onto the drum J and its car is being raised, while the other rope *c* is being unwound from the drum J, and its car is descending.

The cars G H are guided in their ascent and descent in a well-known manner, and may have applied thereto any of the well-known and approved safety attachments, and instead of being suspended by one rope, as shown, will, in practice, have four or more suspension-ropes to each car.

From the upper gallery C two flights of stairs, *d' d'*, lead to the inclosure I, which covers the whole area of the top of the structure, and is entirely inclosed by wire-netting L, or other suitable open-work guard, as shown, to prevent accidents. The floor of the inclosure I is made into a series of steps, *e*, extending around the room and rising toward the center thereof, as shown, so that persons standing in the center of the room can look over the heads of those in front and obtain an unobstructed view of the surrounding scenery. The top inclosure I and each of the galleries C are suitably guarded by a railing, *f*, upon the outside, in addition to the wire-netting L. The galleries C are also protected in a similar manner upon their inner sides, around the well-rooms, and the wire-netting, instead of being only about breast-high, as shown, will be extended upward from the floor of each gallery some ten or twelve feet, both upon the exterior of the structure and around the well-rooms, and across the structure from the exterior to the well-rooms, parallel to the gallery-floors, forming each gallery into an oval annular inclosure from which there is no egress or ingress except through a door opening from or to each of the well-rooms E F, said doors (not shown in the drawings) being so arranged and operated that they cannot be opened except when the car is in position at the gallery.

The whole structure is to be open-work, or a skeleton frame-work, so that the passengers while ascending or descending will have a

comparatively unobstructed view of the surrounding scenery, as well as when in either of the galleries or the top inclosure.

The weight of either car is counterbalanced by the other by virtue of the attachments of their suspension-ropes upon opposite sides of the hoisting-drum, in a well known manner.

This structure may be surrounded at its base by a building, in which may be stores and business office, from which an additional income may be derived, when the structure is built in the heart of a city or large town, or it may be built entirely detached from any building.

The operation of my invention is as follows: One of the cars being down and a company of persons desiring to go up, they enter the car, the door is closed by the conductor, who then starts the machinery by means of a shipper-cord, which passes up through the car in a well-known manner, and the car begins to ascend, the other car at the same time beginning to descend.

If any of the parties desire to stop on either of the galleries, the conductor, by the proper movement of the shipper-rope, stops the car, opens the door of the car and the entrance-door to the gallery, when the passengers step out, the doors are again closed, and the car continues its upward movement till it arrives at the upper gallery, when the passengers leave the car, stepping upon the upper gallery C, and, ascending one of the flights of stairs *d' d'*, enter the inclosure I, where they are allowed to remain for a given length of time to take a view of the scenery.

At the proper time a number of persons are notified that their time is up, and descending the stairs *d'* to the upper gallery, they enter the car, the door of which is closed by the conductor, and the car begins to descend, the other car at the base of the tower, in the mean time having been filled with passengers, at the same time begins to ascend.

This structure may be built of any desired height and size, according to its location and the probable amount of labor to be performed by it, and while its primary object is to carry people to an elevated position for the purpose of obtaining a view of the surrounding scenery, it may be advantageously applied to shot-towers and light-houses.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. An elevated tower, consisting of a skeleton frame-work or structure, in combination with one or more cars, adapted to be moved by steam or other power from the base to the top of said tower, and vice versa, up and down suitable well-rooms provided for the purpose within said structure, all so arranged and constructed that the passengers, while moving up or down in the car, can view the surrounding scenery, substantially as described.

2. An elevated lookout-tower, consisting

of a skeleton or trussed frame-work, and provided with two or more galleries or landing-places at equal intervals between the base and top, in combination with one or more elevator-cars and suitable hoisting mechanism for moving said cars from the base to the top of said tower, and vice versa, substantially as described.

3. In combination with an elevated lookout-tower, provided with an elevator-car and suitable hoisting mechanism for raising said car, the upper gallery C, stairs *d'*, and open-

work inclosure I, as and for the purposes described.

4. The open-work inclosure I, provided with a floor arranged in a series of steps surrounding the inclosure and rising toward its center, as and for the purposes described.

Executed at Boston, Massachusetts, this 15th day of December, A. D. 1875.

LEMUEL B. SAWYER.

Witnesses:

N. C. LOMBARD,

E. A. HEMMENWAY.