3 Sheets—Sheet 1.

L. B. SAWYER.

ELEVATOR TOWER.

No. 181,283. Patented Aug. 22, 1876.

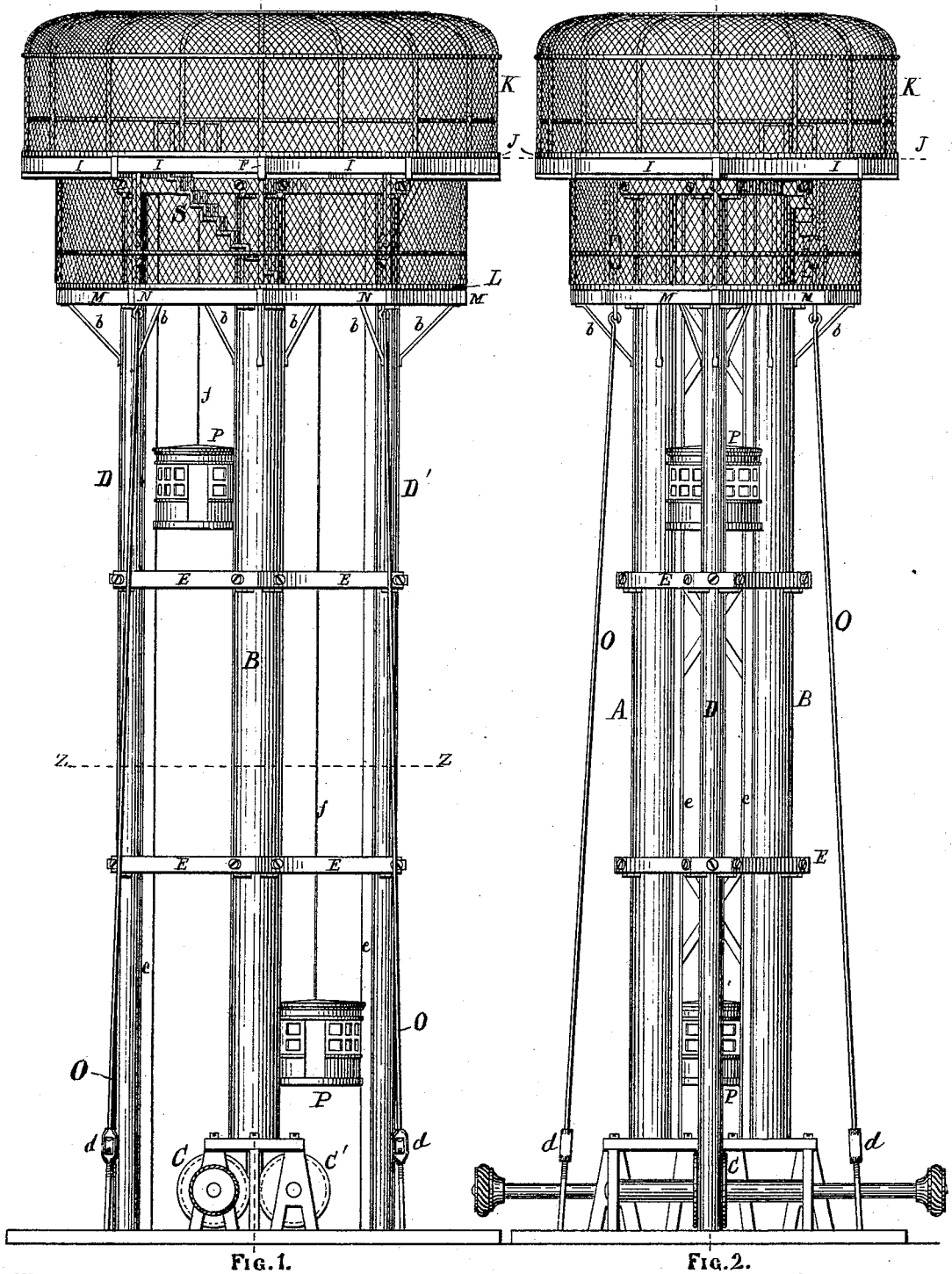

FIG. 1.

FIG. 2.

WITNESSES.

Wm. P. Edwards
B. Andrews, Jr.

INVENTOR.

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

3 Sheets—Sheet 2.

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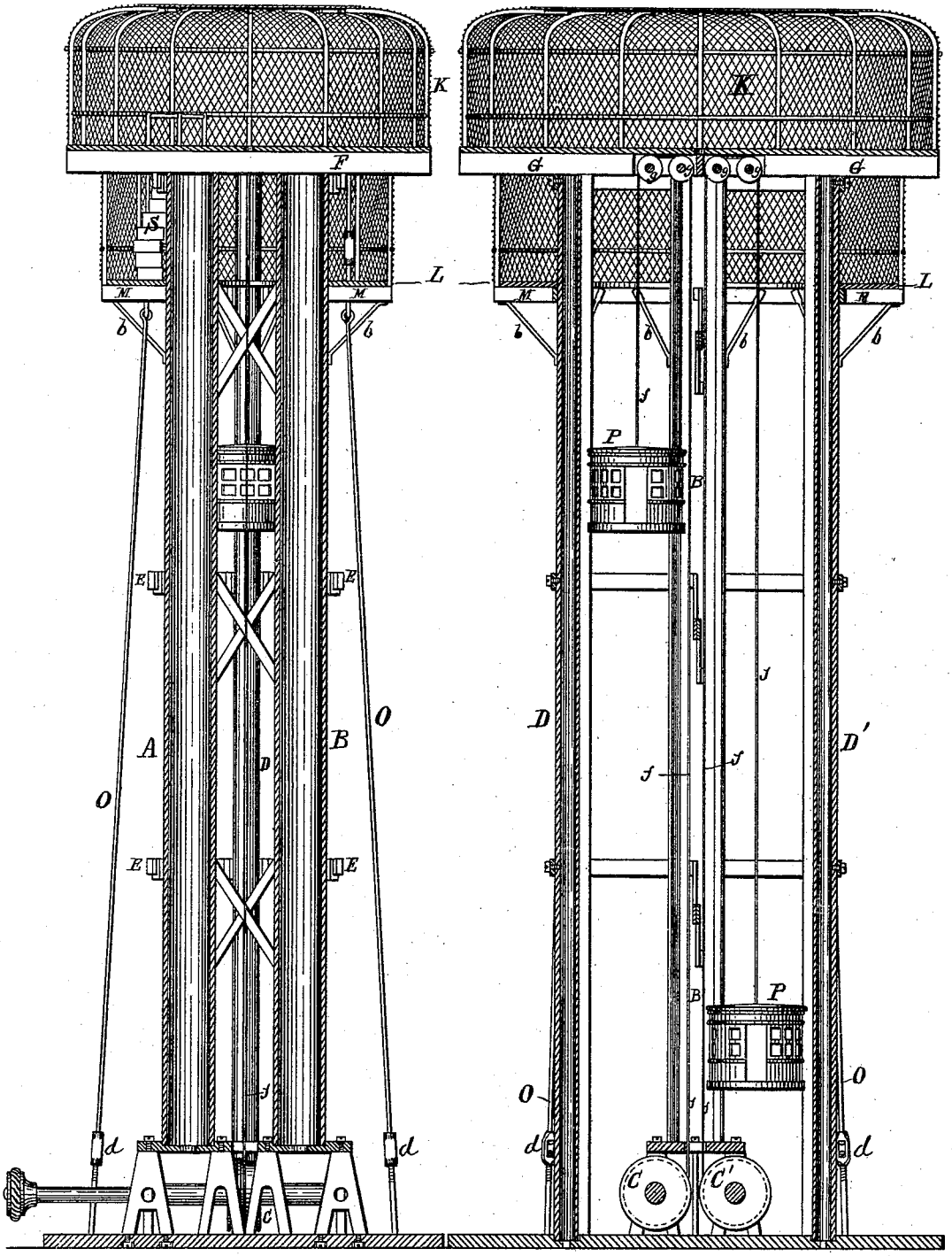

FIG. 4. FIG. 3.

WITNESSES.

Wm. P. Edwards
B. Andrews, Jr.

INVENTOR.

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

3 Sheets—Sheet 3.

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ELEVATOR TOWER.

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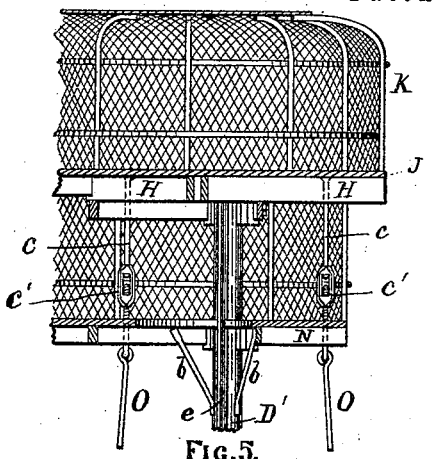

FIG. 5.

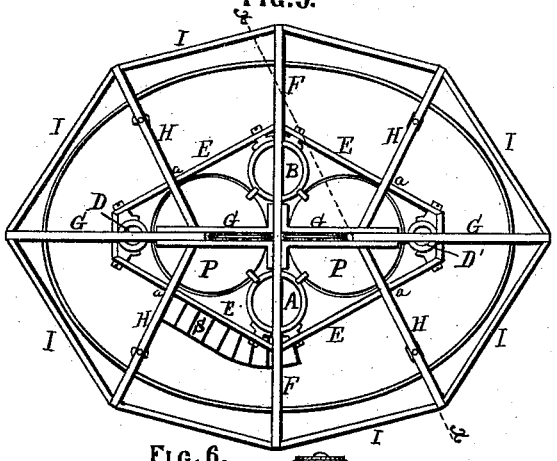

FIG. 6.

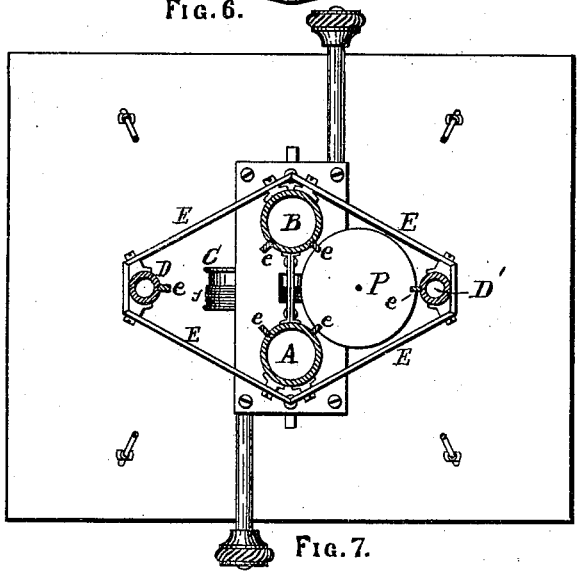

FIG. 7.

WITNESSES.

Wm. P. Edwards
B. Andrews, Jr.

INVENTOR.

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

UNITED STATES PATENT OFFICE.

LEMUEL B. SAWYER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO SAWYER IMPROVED OBSERVATORY COMPANY, OF SAME PLACE.

IMPROVEMENT IN ELEVATOR-TOWERS.

Specification forming part of Letters Patent No. **181,283**, dated August 22, 1876; application filed July 19, 1876.

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 certain new and useful Improvements in Observatories or Lookout-Towers, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to the construction of observatories or lookout-towers; and it consists, first, in the employment of three or more hollow or tubular shafts or columns, arranged about equidistant from each other about a common center, and tied together at suitable intervals by horizontal beams, in combination with an elevator-car, located between said tubular columns and adapted to be moved from the bottom to the top of said tubes, or vice versa, upon guides attached to the exterior of said tubes, as will be described.

My invention further consists in a peculiar arrangement of the timbers which support the upper floor, which will be more clearly explained in connection with the description of the drawings.

My invention further consists in the use, in combination with a series of tubular columns, disposed as before described, and an arrangement of timbers or beams supported entirely by said tubular columns, and upon which is erected the upper inclosure, of one or more rods, chains, or wire ropes, depending from the timbers of said upper floor, and supporting portions of the gallery or galleries, which cannot be readily supported directly from the tubular columns by means of rigid braces.

My invention further consists in the use, in combination with a series of tubular columns, disposed as above described, the upper floor-timbers supported thereby, and a gallery, certain portions of which are supported from said upper floor-timbers by means of rods, chains, or wire ropes, of guy-ropes, rods, or chains, extending from said gallery at points near the points of suspension to the ground and suitably anchored, as an additional means of stability to the structure.

Figure 1 is a side elevation of a lookout-tower illustrating my invention. Fig. 2 is an elevation of the same, looking at right angles to Fig. 1. Fig. 3 is a central longitudinal vertical section. Fig. 4 is a central transverse vertical section. Fig. 5 is a partial vertical section on line *x x* on Fig. 6. Fig. 6 is a plan of the upper floor-timbers with the floor and upper inclosure removed, and Fig. 7 is a horizontal section on line *z z* on Fig. 1.

A and B are two hollow or tubular shafts, made, preferably, of boiler-plate iron, and placed in a perpendicular position, and firmly secured upon a suitable framing, to admit of the hoisting-drums C and C′ being placed below their lower ends, as shown in Figs. 1, 2, 3, 4, and 7. D and D′ are two more tubular columns, of less diameter, constructed of the same material, and each placed in a perpendicular position, at a point equidistant from the columns A and B, but upon opposite sides thereof, as shown in Figs. 6 and 7. These tubular columns are all connected together at suitable intervals by the horizontal tie-beams E E, bolted firmly to their outer sides, as shown in Fig. 7. F is a heavy beam of I-shaped angle-iron, extending across the tops of the tubular columns A and B, and some distance beyond their outer sides, as shown, and firmly secured thereto. G G are two beams having their inner ends forked and secured to the beams F, and extending therefrom at right angles across the tops of the tubular columns D and D′, and some distance beyond the same, as shown. H H H H are four beams, the inner ends of which are firmly secured to the beams G G, and resting at *a a* on the tie-beams E E. The outer ends of the beams F, G, and H are tied together by the beams or ties I I. Upon these beams the floor J is laid, and the superstructure of the upper inclosure K is built. L is a gallery-floor, resting upon the beams M, radiating from the columns, and resting at their outer ends upon the diagonal braces *b b*, and on the beams N, secured at their inner ends to the tie-beams E, and supported at their outer ends from the beams H H directly above them by means of the rods *c c*, depending from the beams H H, and provided with turn-buckles *c′ c′*, to regulate the length of the rod to bring the floor of the gallery to its proper level. O O are guy-rods extending from the beams N of the gallery to the

ground, and securely anchored to a suitable foundation provided therefor, and also provided with turn-buckles *d d* for straining them taut. P P are two elevator-cars, located upon opposite sides of the columns A and B, and each between said columns and one of the columns D or D′, and fitted to move up and down on guide-bars *e e*, attached to the exterior of the columns A, B, D, and D′, as shown in Fig. 7. The cars P P are suspended by the ropes *f f*, which pass over sheaves or pulleys *g g*, having their bearings on the forked beams G G, and the other ends of the ropes *f f* are each secured to the periphery of one of the drums C or C′, the revolution of which, by the application of any suitable power, will cause the cars P P to be raised to a position with their floors on a level with the floor of the gallery L, so that passengers therein can step from the car into the gallery. S is a flight of stairs leading from the gallery L to the upper inclosure K.

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

1. Three or more tubular columns, arranged about equidistant from each other around a common center, and tied together at suitable intervals by horizontal beams, in combination with an elevator-car located between said columns, and adapted to be moved up and down upon guide-bars formed upon or secured to the exterior of said columns, substantially as described.

2. The combination of the beams F, G, H, and E, tie-beams I, and tubular columns A, B, D, and D′, all arranged and adapted to support the floor J and upper inclosure K, substantially as described.

3. The combination, with a series of tubular columns supporting the floor J and inclosure K, of the gallery L and rods, chains, or wire ropes *c c*, depending from the floor J, and adapted to support portions of the gallery, as and for the purposes described.

4. The combination of a series of tubular columns, supporting at their tops a floor and inclosure, a gallery surrounding said columns, portions of which are supported by rods, chains, or wire ropes *c c* from said upper floor, and guy-rods, chains, or ropes leading from said gallery to the ground, as and for the purposes described.

Executed at Boston, Massachusetts, this 2d day of May, 1876.

L. B. SAWYER.

Witnesses:

N. C. LOMBARD,

E. A. HEMMENWAY.