

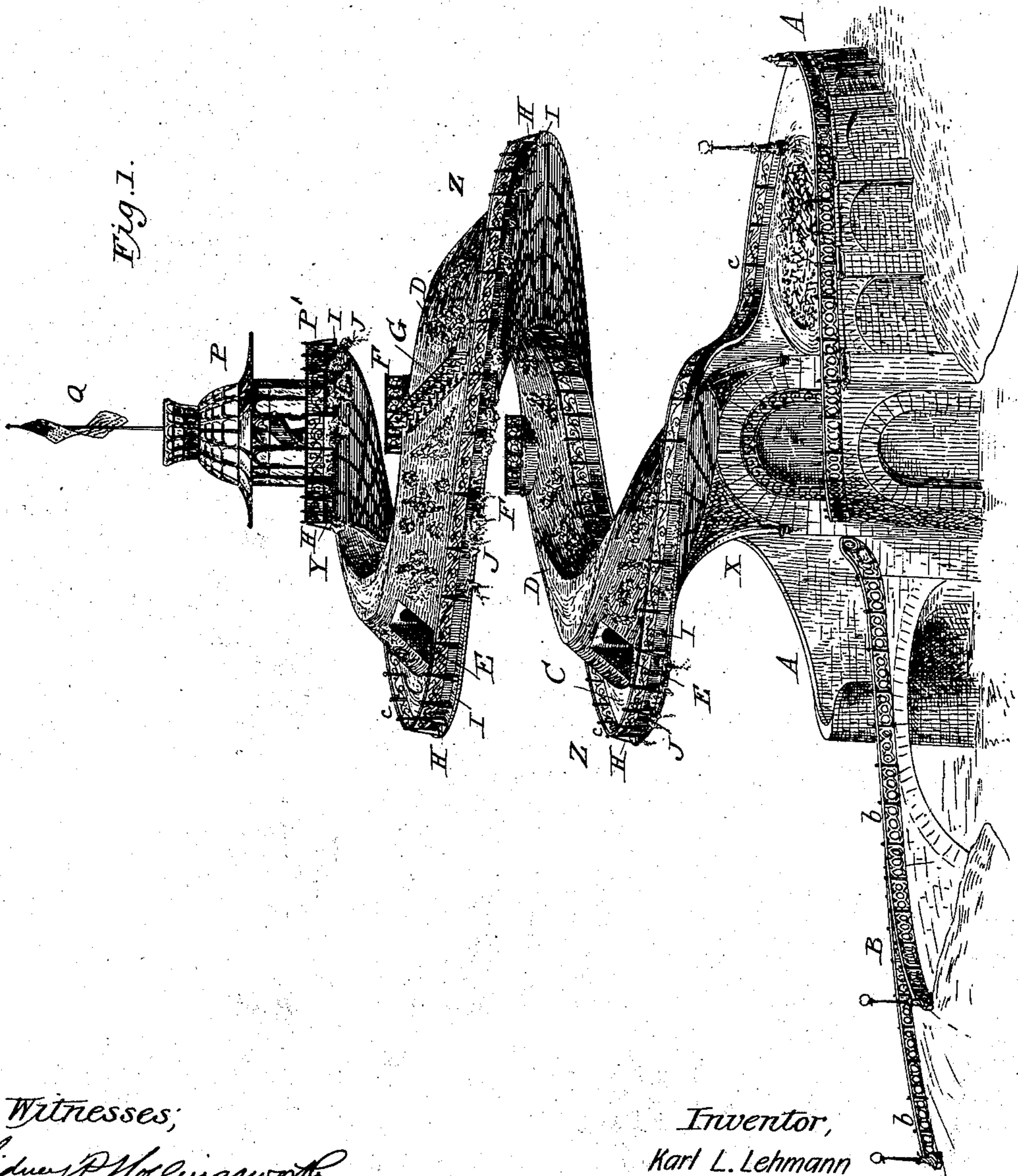
(No Model.)

3 Sheets—Sheet 1.

K. L. LEHMANN.  
TOWER.

No. 489,964.

Patented Jan. 17, 1893.



Witnesses;  
*Sidney P. Hollingsworth*  
*Chas. F. Sumner*

Inventor,  
Karl L. Lehmann  
by his attorneys,  
*Baldwin, Davidson & Wright*

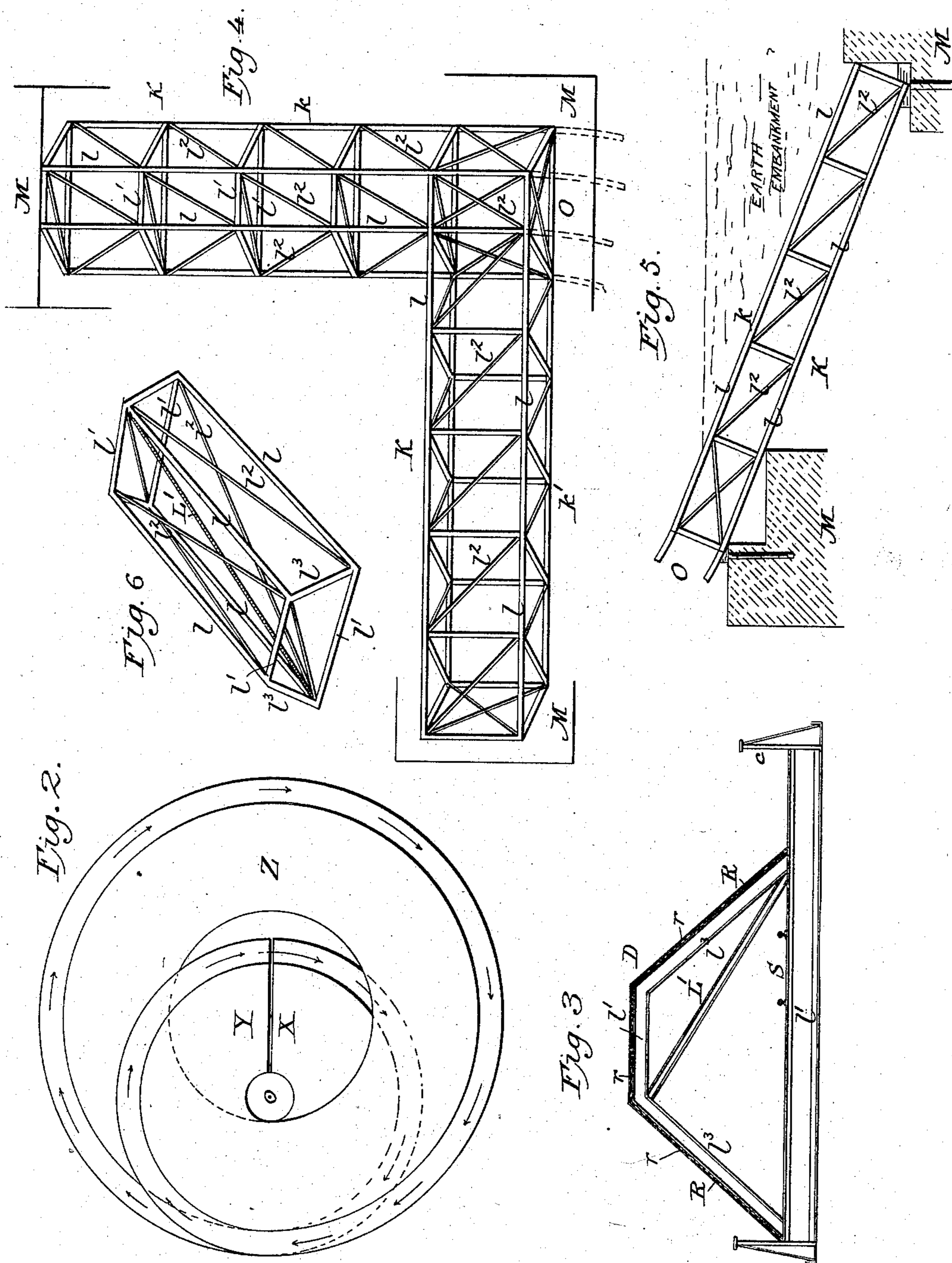
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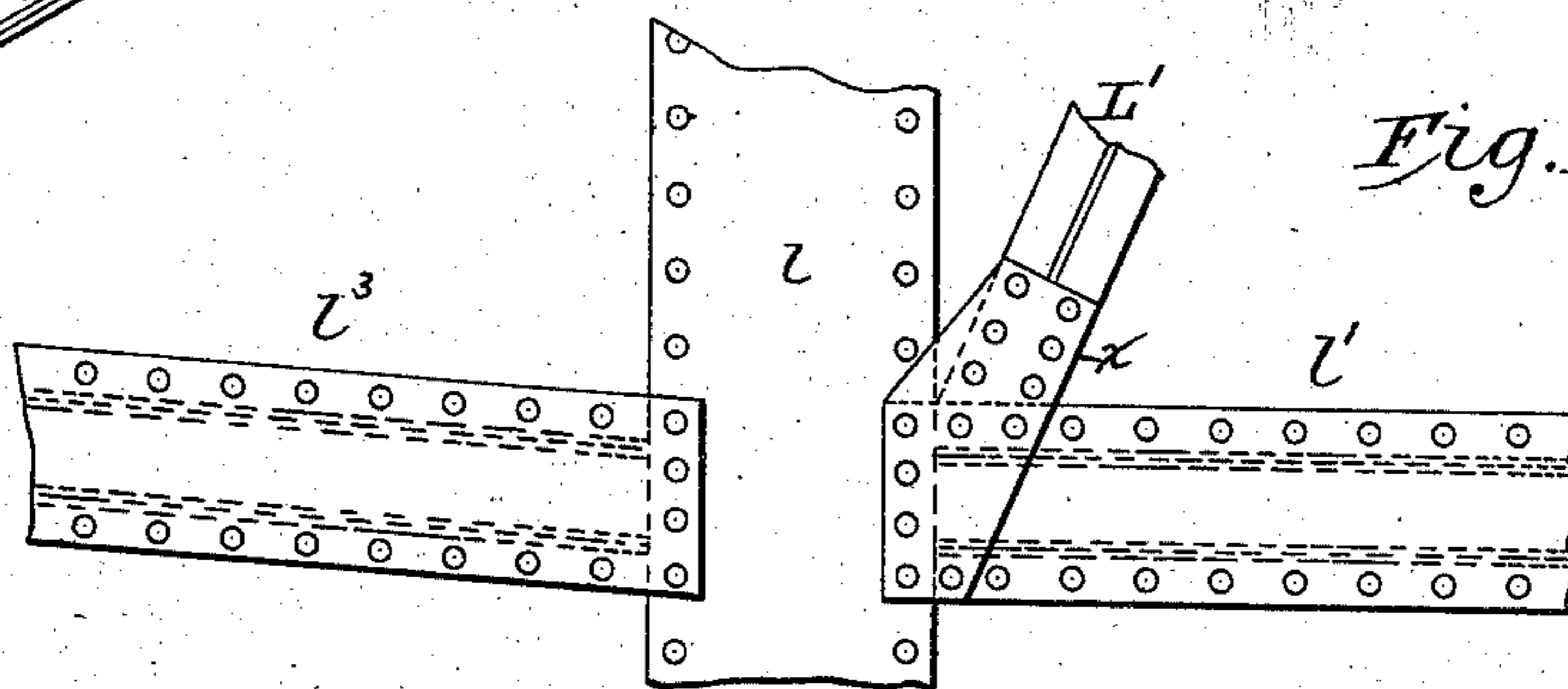
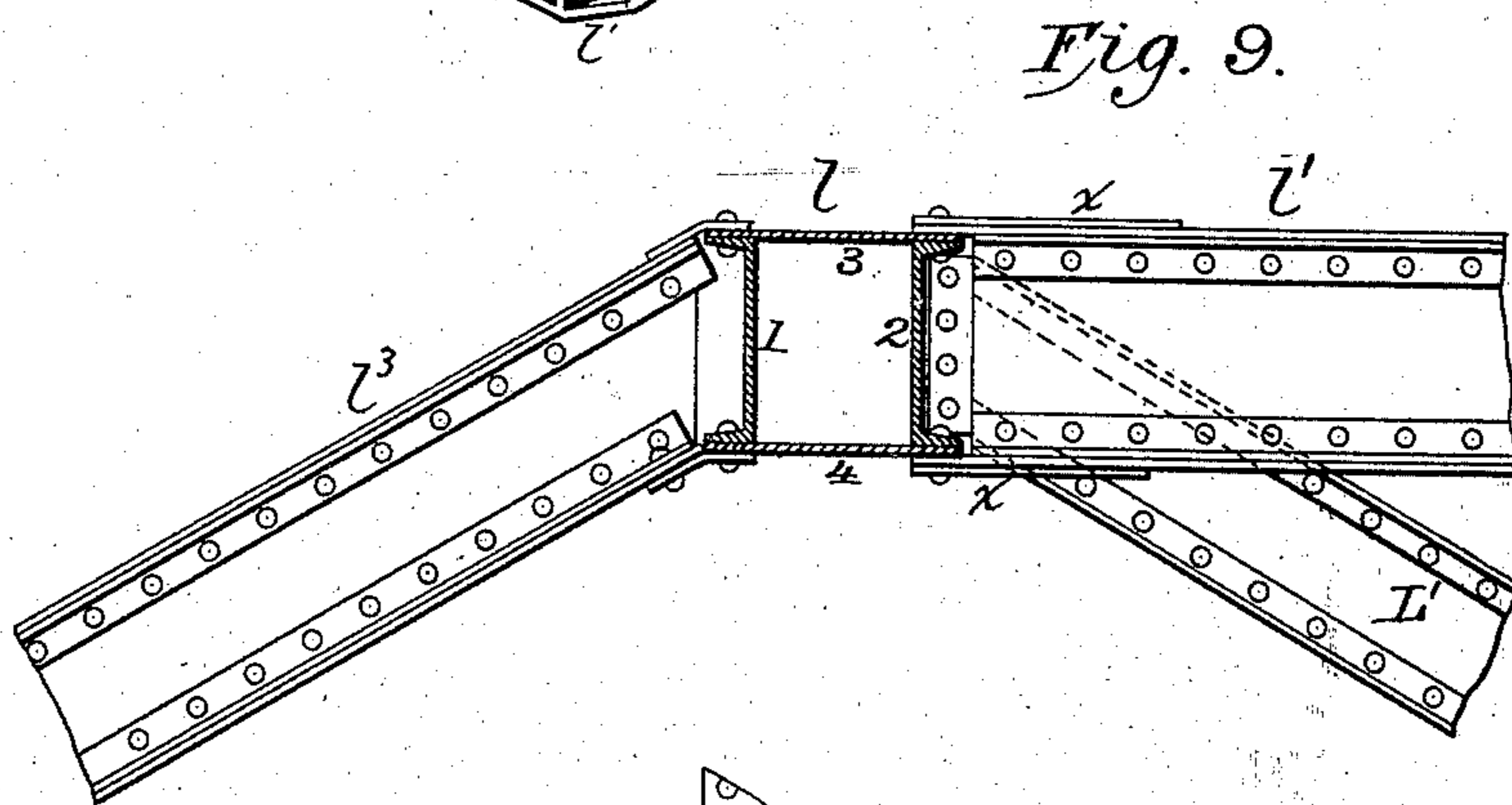
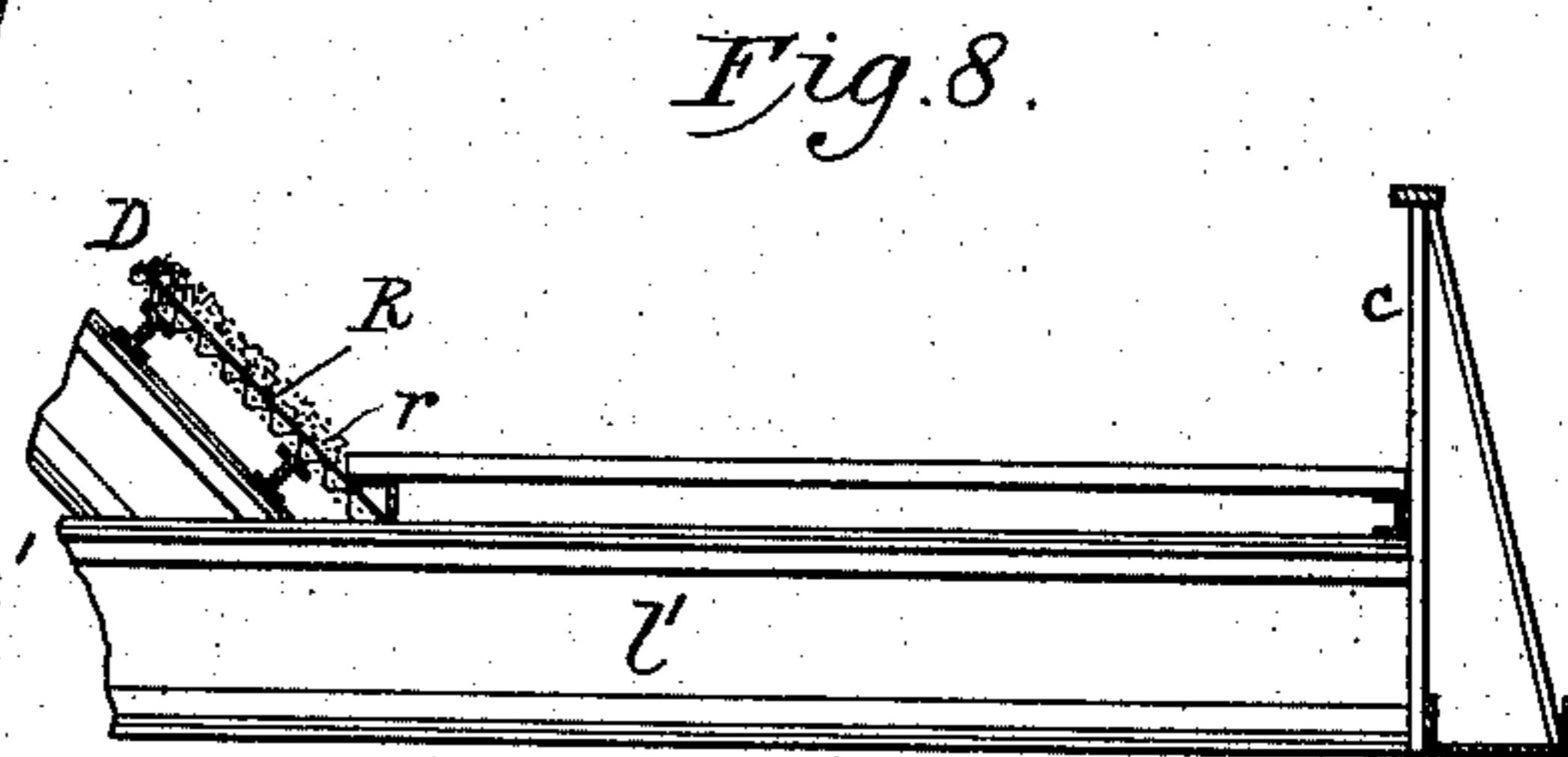
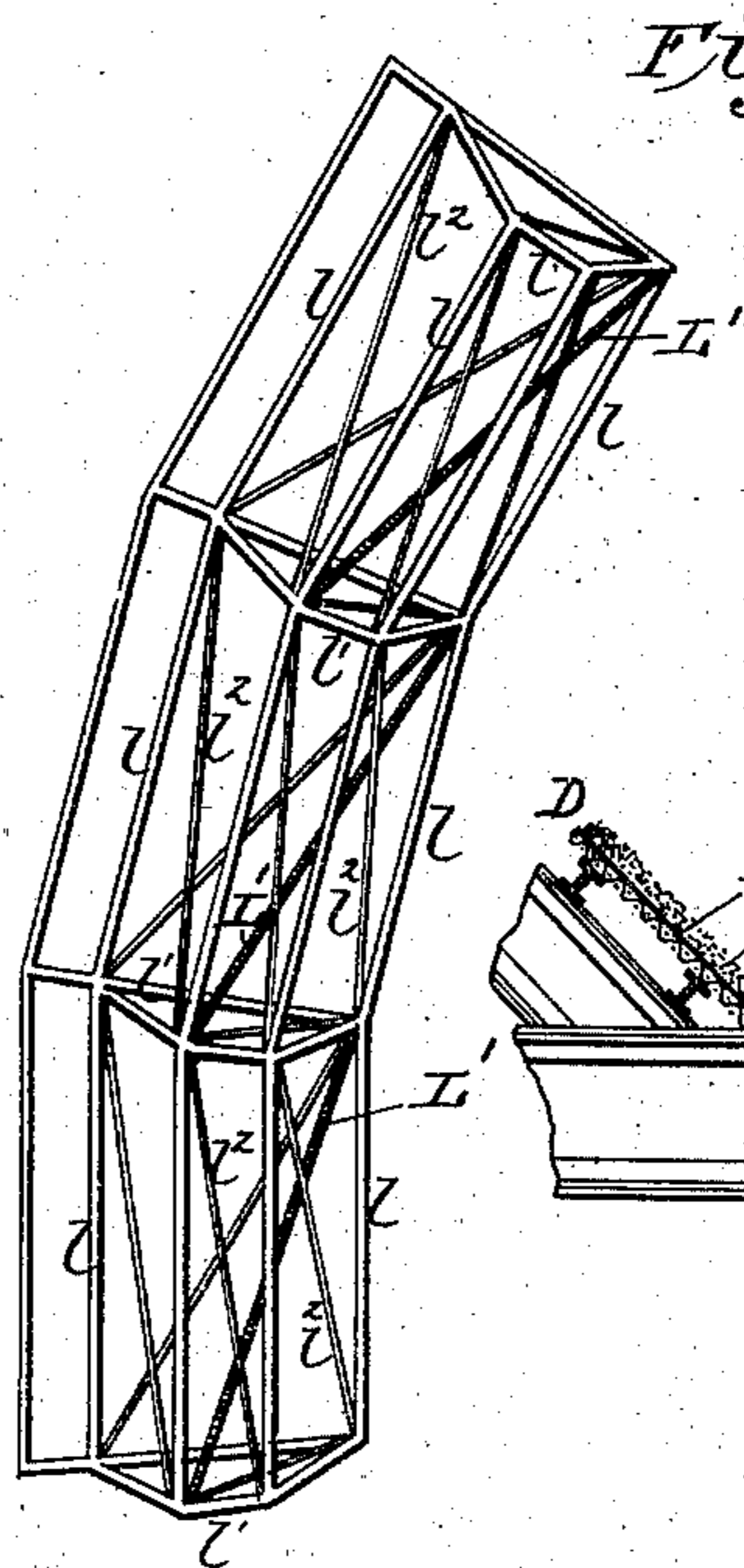
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Inventor;  
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*Belmont, Davidson & Wright.*

# UNITED STATES PATENT OFFICE.

KARL L. LEHMANN, OF CHICAGO, ILLINOIS.

## TOWER.

SPECIFICATION forming part of Letters Patent No. 489,964, dated January 17, 1893.

Application filed October 31, 1892. Serial No. 450,437. (No model.)

*To all whom it may concern,*

Be it known that I, KARL L. LEHMANN, a citizen of Norway, residing at Chicago, in the county of Cook and State of Illinois, United States of America, have invented certain new and useful Improvements in Towers, of which the following is a specification.

The object of my invention is to construct a tower which shall be adapted to support and display ornamental terraces, flower gardens and the like in a most pleasing and artistic manner, and which shall be so constructed that foot passengers cars, carriages or other vehicles may readily travel up and down to view the terraces and gardens and the surrounding landscapes.

The tower is designed especially to ornament and embellish parks, squares or public gardens.

I give to the tower, a spiral form, attach the root to a suitable foundation, and make the skeleton frame of an improved construction strong and durable to support the coverings and attachments.

In the accompanying drawings,—Figure 1 is a front elevation of a tower constructed in accordance with my invention. Fig. 2 is a diagram illustrating the formation of the spiral. Fig. 3 is a transverse section on an enlarged scale of the body of the tower. Fig. 4 is a view of the frame at the root of the tower, which is supported in the foundation. Fig. 5 is another view of this frame, showing how it is supported on the foundation, and embedded in an earth embankment. Fig. 6 is a perspective view of one of the sections of the frame work. Fig. 7 is a view of the frame work of which the spiral body of the tower is constructed. Fig. 8 is a detail view, showing the construction of the roadway and terrace. Figs. 9 and 10 are detail views showing how the braces, struts, &c. may be constructed and joined.

The foundation A, is built of masonry with one or more approaches or roadways B, having railings b. The foundation may be provided with one or more rooms or compartments suitable for a restaurant, museum or the like.

The root X, of the tower is curved from the center o, see Fig. 2, being one-half turn of a screw line. The top Y, is similar in form to

the root X. The middle part or body, Z, embraces one full turn of a screw of a double radius of that of the root or top. This construction is clearly illustrated by the diagram in Fig. 2.

At the top of the tower is a pavilion P, carrying a flag Q. Around the pavilion is a gallery P', which communicates with the spiral roadway C, which extends from the top to the approaches or roadways B, at the foundation. Inside the roadway there is a terrace D, which is hollow and which has suitable ports or doors E, at desired intervals. On the terrace are mounted observatories or platforms F, from which extend stairways G, that lead to the roadway C. The terrace is suitably constructed, as hereinafter described, to support and sustain not only the weight of the roadway and the strains to which it is subjected, but is also adapted to carry the soil in which the flower beds, &c. are arranged. It will be observed, also, that outside the railing c, of the roadway, are brackets H, which support troughs or boxes I, containing flowers, vines or ornamental shrubbery J. Irrespective of the details of construction of the tower, I am, so far as I am aware, the first to make a tower of spiral form without any central support.

Various forms of frame-work, trusses, struts, braces, &c. may be employed in constructing the tower. I preferably, however, employ the devices indicated in Figs. 3, 4, 5, 6 and 7.

At the lower end of the root of the tower, I provide a foundation framing K, which is L-shaped, as shown in Fig. 4, and inclined as shown in Fig. 5. This frame is made up of panels or sections such as shown in Fig. 6, the four longer sides of which are quadrilaterals, while the two ends are trapezoids. The four longitudinal bars l, may be made of plate iron, I-beams, angle iron or the like, preferably of ordinary plate iron; and the two parallel bars l', of the trapezoid and the inclined bars l'' may be of similar material. A diagonal brace l''', is used in each of the quadrilaterals and trapezoids, and as an additional brace, I employ the diagonal strut L', which extends from the upper corner of the trapezoid at one end of the frame to the lower diagonally opposite angle of the trapezoid at the opposite end of the frame. A frame section as thus constructed, is espe-

cially adapted for use in a tower having a spiral form. The two branches  $k$   $k'$  of the foundation framing K, are supported by masonry or other material M, and an earth embankment is filled in over this framing.

The framing at the root of the tower is connected to the foundation framing at O, and continues upwardly in a spiral form, as indicated in Fig. 7.

In Figs. 3, and 8 I have shown more fully the construction of the frame sections. The transverse beams  $l'$ , are prolonged to form a support for a side-walk or roadway, and the inclined portions of the framing support corrugated plates or wire netting R, which may be covered with tarpaulin  $r$ , and on this the soil for the garden may be placed.

The bars or beams of which the framing is constructed may be made in sections riveted or secured together in any usual suitable way, and such form of struts, girders, beams, &c. may be employed, as is usual in analogous structures.

The rails S, on which the cars or vehicles run within the spiral terrace, are arranged not directly under the center of the terrace, but to one side thereof, opposite the roadway in order to clear the braces.

In Figs. 9 and 10, I have illustrated one way of constructing and connecting the parts of the frame. As there shown, the parts  $l$ ,  $l'$  and  $l^s$  and  $L'$  are made up of channel irons 1 and 2, connected by plates 3 and 4. Supplemental plates  $x$ , may be employed at the joints. The entire frame work may be constructed in this or in a similar manner.

I claim as my invention,—

1. A tower having a spiral structure continuous from bottom to top, having its lower end supported on a suitable foundation, and

being unsupported above the foundation by supplemental supports.

2. A tower having a spiral structure having its lower end supported on a suitable foundation, and its sides and top disconnected or unsupported by supplemental supports having a terrace extending from bottom to top, a pavilion and gallery at the top, observatories or galleries at suitable intervals apart, and a spiral roadway around the outside of the terrace.

3. A spiral tower having a suitable foundation, a terrace, a roadway projecting laterally therefrom at its lower edge, and hanging gardens at the outer edge of the roadway.

4. A tower having a foundation of masonry, a spiral top body portion and root, a terrace, the cross section of which is a trapezoid, a spiral roadway projecting from the bottom of the terrace, and a railway track within the terrace.

5. A spiral tower, the frame-work of which is made in sections, each of which has braces at its ends and sides, and is provided with one or more diagonal braces  $L'$ , extending from the angle at the upper end of one end piece to the diagonally opposite lower angle of the opposite end piece.

6. A spiral tower having a foundation framing L-shaped and inclined, and made up of frame sections braced at their ends and sides, and each having one or more diagonal braces  $L'$  and a spiral framing connected to the foundation framing made up of like sections.

In testimony whereof I have hereunto subscribed my name.

KARL L. LEHMANN.

Witnesses:

MARION PICKETT,  
CHARLES P. PLATT.