L. CALLAHAN.

TOWER.

APPLICATION FILED JUNE 8, 1909.

946,010.

Patented Jan. 11, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

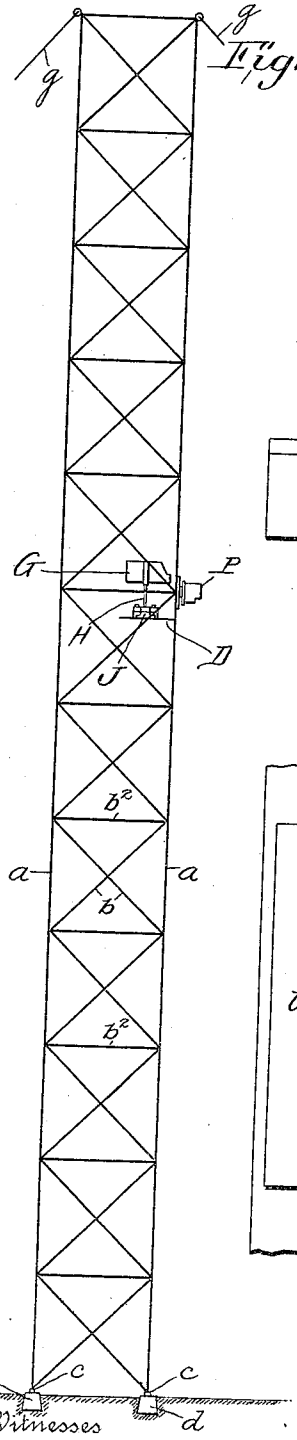


Fig. 2.

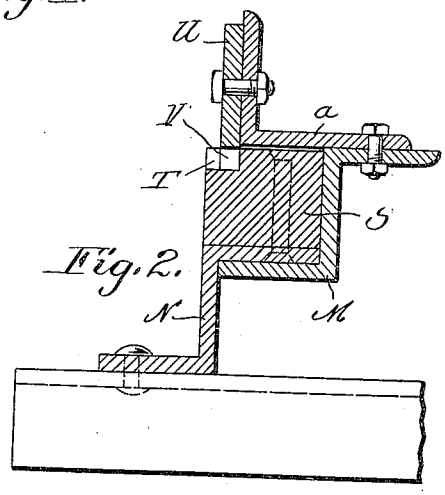


Fig. 4.

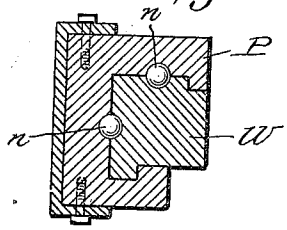


Fig. 3.

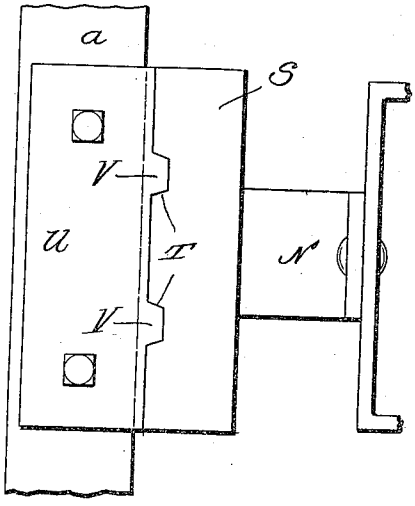
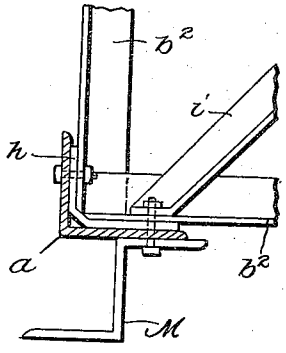


Fig. 5.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 6.

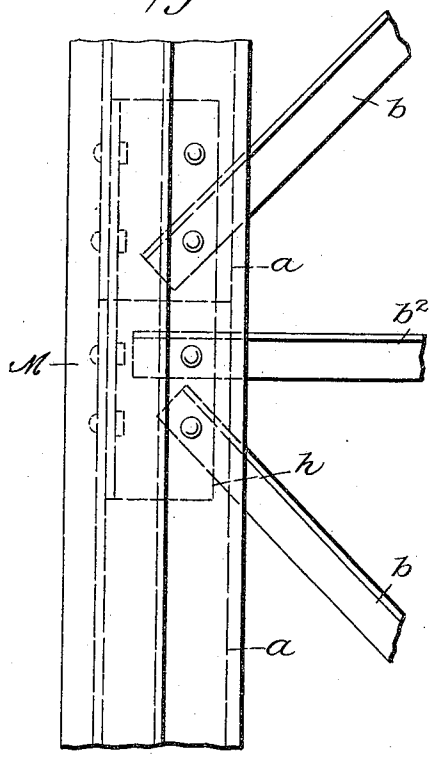


Fig. 7.

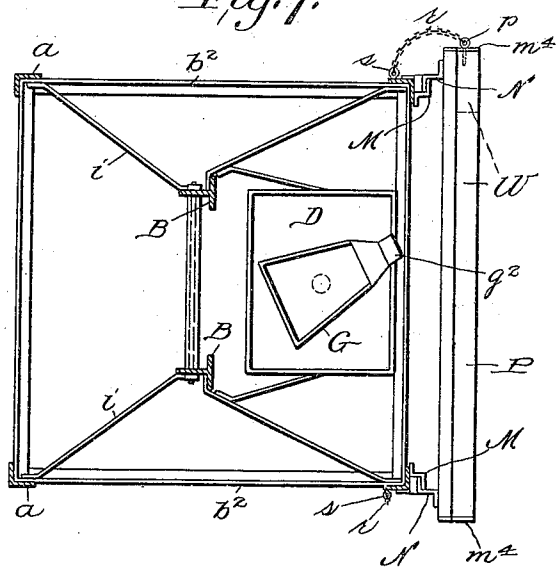
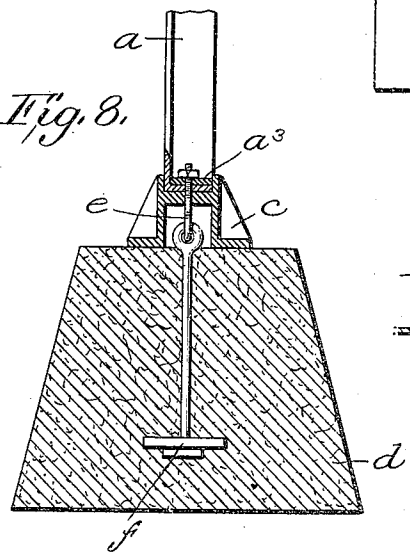


Fig. 8.



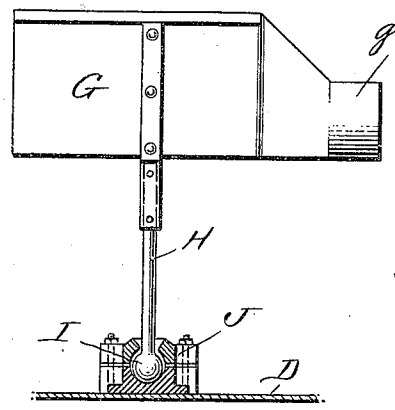
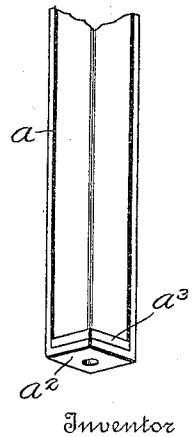


Fig. 10.

Fig. 9.



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UNITED STATES PATENT OFFICE.

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TOWER.

946,010. Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed June 8, 1909. Serial No. 500,813.

To all whom it may concern:

Be it known that I, LEE CALLAHAN, citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented new and useful Improvements in Towers, of which the following is a specification.

My invention pertains to towers such as are constructed of sections of steel or other suitable material and in skeleton form; and it contemplates the provision of a tower designed more particularly for use in the material-transferring apparatus constituting the subject matter of my contemporary application, filed January 21, 1909, Serial Number 473,461, and constructed in such manner that it is susceptible of being expeditiously and easily erected, and when properly tied to the ground, is stiff and strong and therefore capable of sustaining great weights and withstanding the action of the elements.

Other objects and advantageous characteristics of the present invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is a side elevation of a tower constructed in accordance with my invention. Figs. 2 and 3 are enlarged detail views illustrative of the manner in which a horizontal track may be adjustably fixed at different points in the height of the tower. Fig. 4 is a cross-section showing the connection of the track with the tower. Fig. 5 is a detail horizontal section illustrative of a certain portion of the tower. Fig. 6 is a detail elevation also illustrative of said portion. Fig. 7 is a horizontal section showing the tower and the track arranged horizontally on and connected therewith. Fig. 8 is an enlarged detail view showing the manner in which I prefer to fasten or anchor the lower ends of the corner uprights of the tower. Fig. 9 is a detail view showing the lower end portion of one of the said corner uprights. Fig. 10 shows the pan and supporting means therefor.

Similar letters of reference designate corresponding parts in all of the views of the drawings.

I prefer in practice to construct my novel tower of sections of steel or other material suitable to the purpose, and to make the sections which are superposed about twelve feet in length. I also prefer to have the tower comprise corner uprights a, of angular form in cross-section, and inclined braces b and horizontal braces b^2, also of angular form in cross-section, connecting the corner uprights in such manner as to make the tower as a whole of angular form in cross-section. As illustrated herein the tower is rectangular in horizontal section, but I desire it to be distinctly understood that it may be of any other angular formation in horizontal section without involving departure from the scope of my claimed invention.

The tower is tied or anchored to the ground with a view of fixing it in position in the manner shown in Figs. 1, 8 and 9—that is to say, by arranging the corner uprights a of the lowermost section in angular seats c, mounted on concrete or other suitable bases d, which latter are embedded in the ground or any other suitable holding means, and by connecting the lower ends of said uprights and the seats c through the medium of bolts e with anchors f, secured to the bases d, preferably by being molded in the bases when the latter are formed of concrete.

Attention is here invited to the fact that guy cables g, Fig. 1, extending from the upper end of the tower to fixed objects located about the tower, may be and preferably are employed to assist in maintaining the tower in upright position. It will further be understood by reference to Figs. 8 and 9 that each corner upright a has a lower base portion a^2, and that a washer plate a^3 rests on said base portion so as to enable the bolt e to more strongly connect the upright with the seat c and the anchor f. The arrangement of the lower ends of the uprights a and washer plates a^3 within the angular seats or chairs c also contributes to the strength of the connection between the uprights a and the bases b, and to the holding of the uprights a against lateral movement or shifting.

The tower may be built to the full height in the first instance, or when the tower is used in connection with a building operation and as part of the material transferring apparatus hereinbefore referred to, the tower is increased in height as the construction of the building progresses by adding

twelve foot sections, and each added section is fixedly connected with the one below it, through the medium of fish plates *h*, as best shown in Figs. 5 and 6.

Arranged between the corner uprights *a* and connected through struts *i* therewith are upright rails B. These rails when connected with the uprights *a* in the manner described, serve to lend increased stiffness and strength to the tower, and when the tower is used as part of a material-transferring apparatus, the rails may be utilized as guides for a skip or other elevating means (not shown).

I would also have it understood at this point that when a section is added to the tower to increase the height thereof, sections will be added to the rails B to correspondingly increase the height of the same.

While preferably employed for the purpose or purposes stated, the rails B do not form essential parts of the tower and may, therefore, be omitted without involving departure from the scope of my invention as claimed.

Fixed to two of the corner uprights *a* and extending throughout the height of the tower are Z-bars M, Figs. 2, 5 and 7, so termed because of their shape in horizontal section. These bars M are designed for the engagement of Z-shaped hooks N on a horizontal, vertically-adjustable body P, preferably a track, which extends across one side of the tower. The body P is adjustably fixed to the uprights *a* and against gravitation by the means best shown in Figs. 2, 3 and 7, that is to say, through the medium of a cast-iron block S riveted to its hooks N and having notches T and locking pieces U detachably connected to the corner uprights *a* and having lugs V which occupy the said notches T. From this it follows that the body P may be fixed to the uprights *a* at various points in the height of the tower.

The body P may be used as a support for any device or devices that it is desired to maintain in an elevated position, and may *per se* be of any suitable description without involving departure from the scope of my claimed invention. In the present embodiment of my invention, however, the supporting body P is shown in the form of a track, and as equipped with a carriage W, for the convenient movement of means lengthwise of the body or track, and antifriction balls *n* for easing the movement of the carriage. The carriage W is provided with end sockets to receive eye-bolts *p*, connected by chains *r* to eye-bolts *s*, which, in turn, are connected to opposite corner uprights *a*, this with a view of retaining the carriage W at one end or the other of the track or track-like body.

It will be understood here that the body or track P has end plates m^4 or other stops to limit movement of the carriage W, and that the eye-bolts *p* are turned through openings in said end plates m^4 and into the threaded sockets in the carriage. When deemed expedient a plurality of the supporting bodies or tracks P may be connected with the corner uprights *a* in the manner described.

Removably arranged on one of the horizontal braces b^2 and hung from struts *i* is a floor or platform D, above which is pan G, which may be used for any purpose for which it is adapted. To the said pan G is fixed a support H, and the said support H terminates at its lower end in a ball I which is disposed in a complementary socket J on the floor or platform D, and hence it will be manifest that the reduced discharge end g^2 of the pan G may be pointed in various directions for various purposes.

The construction herein illustrated and described constitutes the best practical embodiment of my present invention that I have as yet devised, but it is obvious in the future practice of the invention such changes or modifications may be made as do not involve departure from the scope of my invention as defined by the claims appended.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. The combination in a tower, of a base, a chair resting thereon and having a seat of angular form in horizontal section, and also having a vertically disposed aperture in the bottom of said seat, an upright, of right-angle form in cross-section, having a horizontal lower end portion arranged in said seat and also having a vertically disposed aperture in said end portion, and means extending through the apertures in the lower end portion of the upright and the chair bottom and connecting the upright and the chair together and with the base.

2. The combination in a tower, of a plastic base, an anchor secured therein, a chair arranged on the base and having a seat of angular form and also having an aperture, an upright, of angular form in cross-section, having an apertured base portion arranged in said seat, and means extending through said apertured base portion and the aperture of the chair and connecting the upright and the chair with the anchor.

3. The combination in a tower, of a plastic base, a metallic seat thereon, an upright of angular form in cross-section, arranged in said seat, an anchor fixed in the base, and a connection between the seat and upright and the anchor.

4. The combination in a tower, of superposed sections having corner uprights of angular form in cross-section, angular fish-plates lapping the adjacent ends of the up-

rights and connected therewith, upright rails arranged in the tower, and struts connected to the fish plates and the upright rails.

5. The combination in a tower, of upright bars of angular form in cross-section, a body resting in front of the bars and having angular hooks engaged with and movable vertically on the bars, and means for adjustably fixing the said hooks against vertical movement.

6. The combination in a tower, of upright bars of angular form in cross-section, a body resting in front of the bars and having angular hooks engaged with and movable vertically on the bars and also having notched blocks on the hooks, and movable means connected with the upright bars and adapted to coöperate with said blocks to adjustably fix the body against downward movement.

7. The combination in a tower, of uprights, a track-like body, a carriage movable thereon, and means adjustably fixing the track-like body against downward movement on the uprights.

8. The combination in a tower, of uprights, a track-like body, a carriage movable thereon, means adjustably fixing the track-like body against downward movement on the uprights, and means for detachably securing the carriage at one end of the track-like body.

9. The combination in a tower, of upright bars of angular form in cross-section, a track-like body resting in front of the bars and having angular hooks engaged with and movable vertically on the bars and also having notched blocks on the hooks, a carriage movable on the track-like body, and movable means connected with the upright bars and adapted to coöperate with said blocks to adjustably fix the track-like body against downward movement.

10. The combination in a tower, of a base supported therein, a pan, a support connected with the pan, and a ball and socket connection between the base and said support.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEE CALLAHAN.

Witnesses:
JOHN A. TROXELL,
GEO. B. THOMPSON.