

(No Model.)

W. H. JACKSON & B. N. MOSS.
WATER TOWER.

No. 572,995.

Patented Dec. 15, 1896.

Fig. 2.

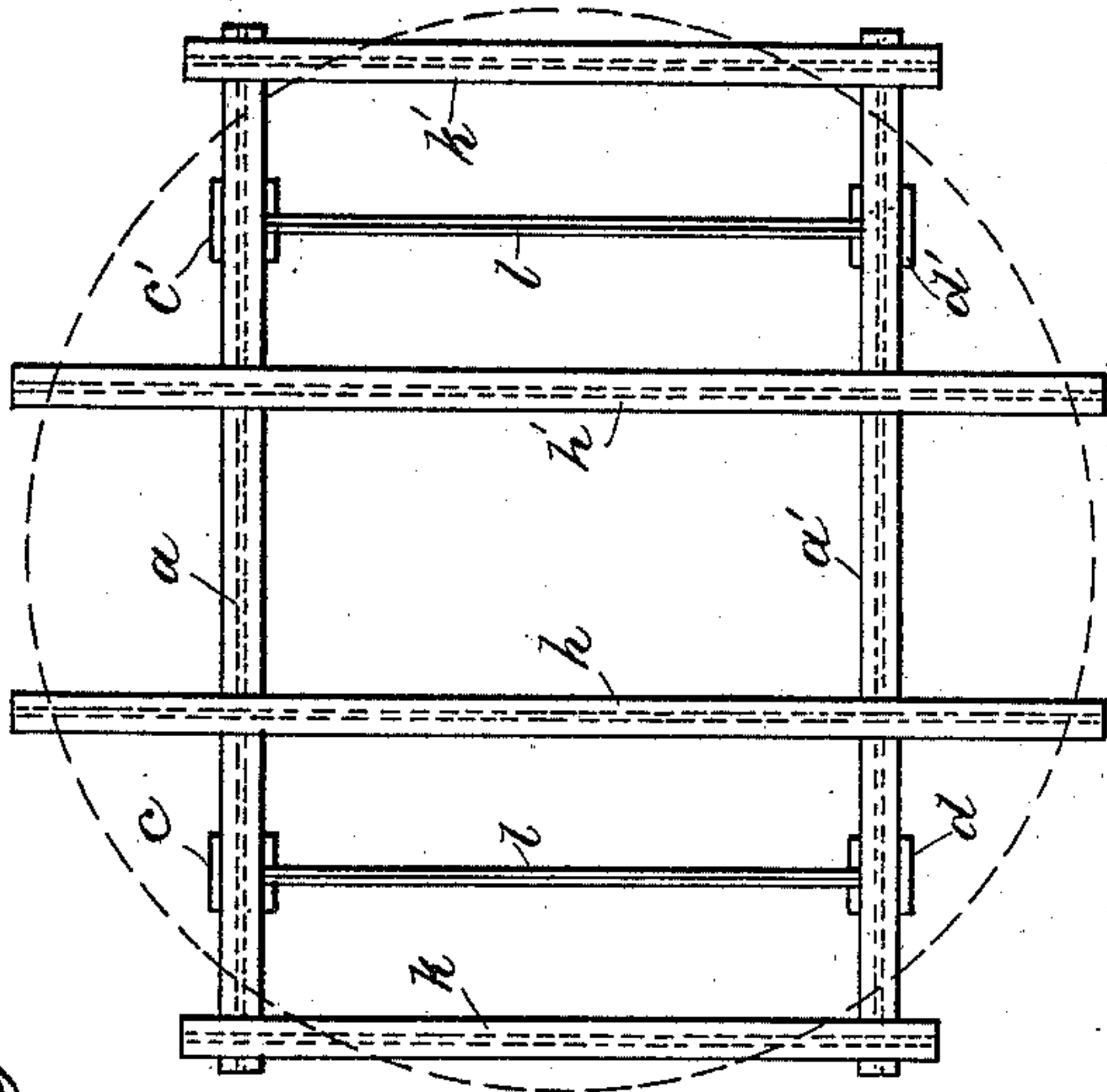


Fig. 3.

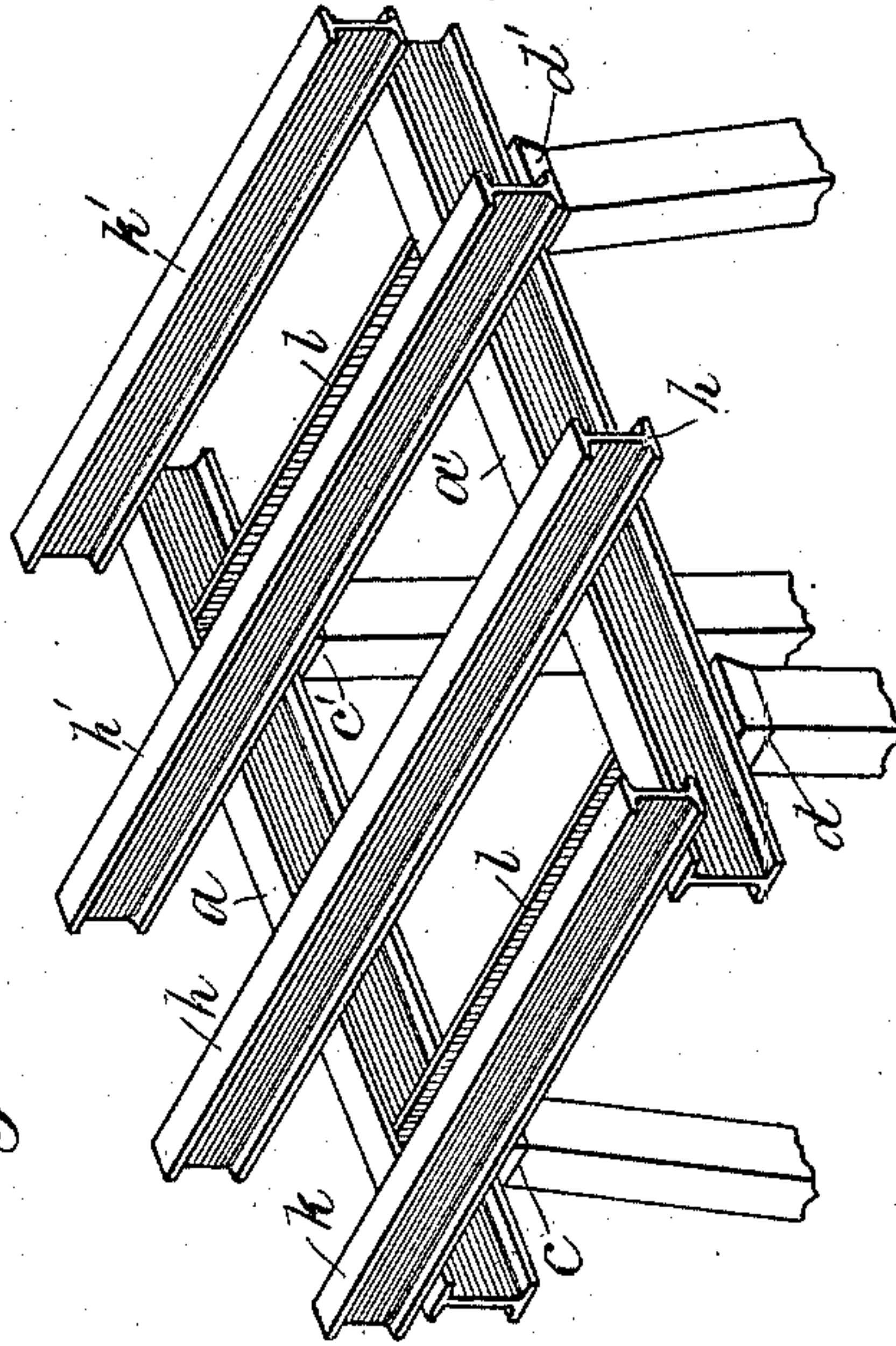
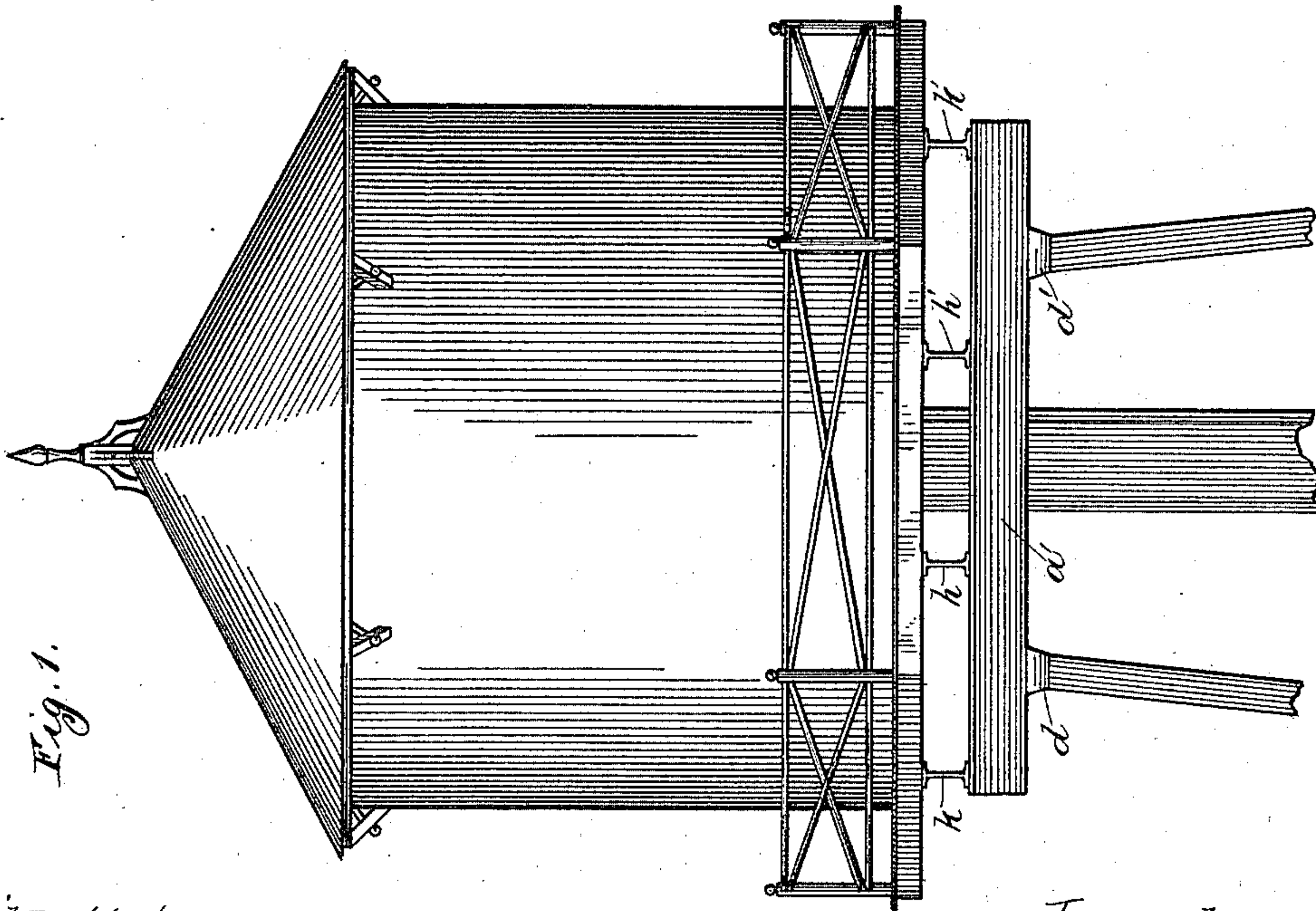


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. JACKSON AND BERKLEY N. MOSS, OF DES MOINES, IOWA.

WATER-TOWER.

SPECIFICATION forming part of Letters Patent No. 572,995, dated December 15, 1896.

Application filed November 1, 1895. Serial No. 567,579. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. JACKSON and BERKLEY N. MOSS, citizens of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Improvement in Water-Towers, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Our invention relates to a tower for water-tanks, and more particularly to improvements in the decking which rests upon the posts or columns of the tower and upon which the tank is supported.

It has been the usual practice heretofore to support the tank upon a system of beams wherein four main or principal beams are employed, which rest by their ends upon the four posts or columns of the tower. Intermediate beams are supported upon or built between the four principal beams, and upon these rest the floor-beams of the tank. With this construction the load is carried upon beams resting by their ends upon the posts or supports, and the four main beams must be made of considerable dimensions to properly carry the load. In accordance with our invention the posts are brought nearer together, and instead of employing four beams resting by their ends upon the posts two main beams are employed which rest upon the posts at intermediate points, the beams thus extending beyond the posts at both ends. Upon these main beams and extending transversely thereto is provided a second set of beams, preferably four in number, the beams being placed upon opposite sides of the posts, so that the points of support of the main beams are at some point between the concentrated loads due to the transverse beams. This arrangement of beams induces a cantaliver action or negative moment in the main beams, which enables their dimensions to be considerably decreased. Furthermore, since the distance between the points of support is lessened by bringing the ends of the posts nearer together, a further saving in material results, as the dimensions of the main beams may thus be further decreased for the same load. Furthermore, the bringing of the

posts nearer together decreases the distance between the main beams, and the distance between the points of support of the transverse beams being lessened these beams may also be made of considerably decreased dimensions. By this construction of main and transverse beams a very material saving of metal results, and in a particular case, wherein, according to the construction of the prior art, nine thousand two hundred and ninety-four pounds of metal were required for a tank of a certain size, in accordance with our invention but six thousand six hundred and fourteen pounds were employed to secure the same strength, with even a greater factor of safety than was allowed in the construction of the prior art.

We will describe our invention more in particular by reference to the accompanying drawings, in which—

Figure 1 is a view in elevation of a tower embodying our invention. Fig. 2 is a plan view of the decking. Fig. 3 is a perspective view of the decking.

Like letters refer to like parts in the several figures.

In accordance with our invention the ends of the posts $c c' d d'$ are brought closer together than in the constructions of the prior art, and two main beams $a a'$ are employed, which rest upon the ends of the posts at intermediate points, the beams thus extending beyond the posts at both ends. Upon the beams $a a'$ rest transverse beams $h h'$ and $k k'$, the beams h and k resting upon the main beams upon opposite sides of the posts $c d$, while the beams h' and k' rest upon the main beams upon opposite sides of the posts $c' d'$. The transverse beams may either rest upon the main beams or they may be built between them, as may be desired. Upon the transverse beams rest the beams of the tank, the main beams being thus subjected to concentrated loads through the agency of the transverse beams, which rest upon opposite sides of the points of support of the main beams. A cantaliver action of the main beams or negative moment is thus brought into play, which enables the employment of beams of much less dimension than could be employed were the beams supported at their ends. Furthermore, the bringing of the posts

c c' and *d d'* closer together decreases the distance between the points of support of the main beams, thus enabling a further decrease in the dimensions of the main beams. The
 5 bringing together of the posts of the tower also brings the main beams *a* and *a'* closer together, and thus decreases the distance between the points of support of the transverse beams, which enables the employment
 10 of transverse beams of less dimensions than could be employed were the distance between the posts not decreased. We preferably provide struts *l l* between the beams *a a'* to assist in maintaining the ends of the tower-
 15 posts in proper positions.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a metallic support, the combination
 20 with the four vertical posts, of the two main beams *a a'* resting thereon, the points of support being at a distance from the ends of the beams, the outer transverse beams *k k'* resting upon the main beams and situated beyond
 25 the points of support where the main beams rest upon the posts, the transverse beams *h h'* resting upon the main beams and situated between the points of support where the main beams rest upon the posts, the ends of said
 30 beams *h h'* extending beyond the main beams, said structure adapted to support an object upon the transverse beams thereof, whereby the beams *h h'* are subjected to a cantaliver action or negative moment about the points

where the same rest upon the main beams, 35 while the main beams are subjected to a cantaliver action or negative moment about the points of support thereof upon the vertical posts, substantially as described.

2. In a metallic tank-support, the combi- 40 nation with two pairs of vertical posts, of two main beams, one resting upon each pair of said posts, the points of support where the main beams rest upon the posts being at a distance from the ends of the beams to pro- 45 vide projecting ends upon the main beams not otherwise supported than by the vertical posts, transverse beams supported upon said main beams, some of said transverse beams being supported upon the projecting ends of 50 said main beams and some resting between the points of support of the main beams to subject the main beams to a negative moment about the points of support, substantially as and for the purpose set forth. 55

In witness whereof we hereunto subscribe our names this 26th day of October, A. D. 1895.

WILLIAM H. JACKSON.
 BERKLEY N. MOSS.

Witnesses to the signature of William H. Jackson:

KARL C. KASTBERG,
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Witnesses to the signature of Berkley N. Moss:

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