No. 861,473. PATENTED JULY 30, 1907.

H. H. MACOMBER.

TANK SUPPORT.

APPLICATION FILED MAR. 16, 1907.

Fig. 1.

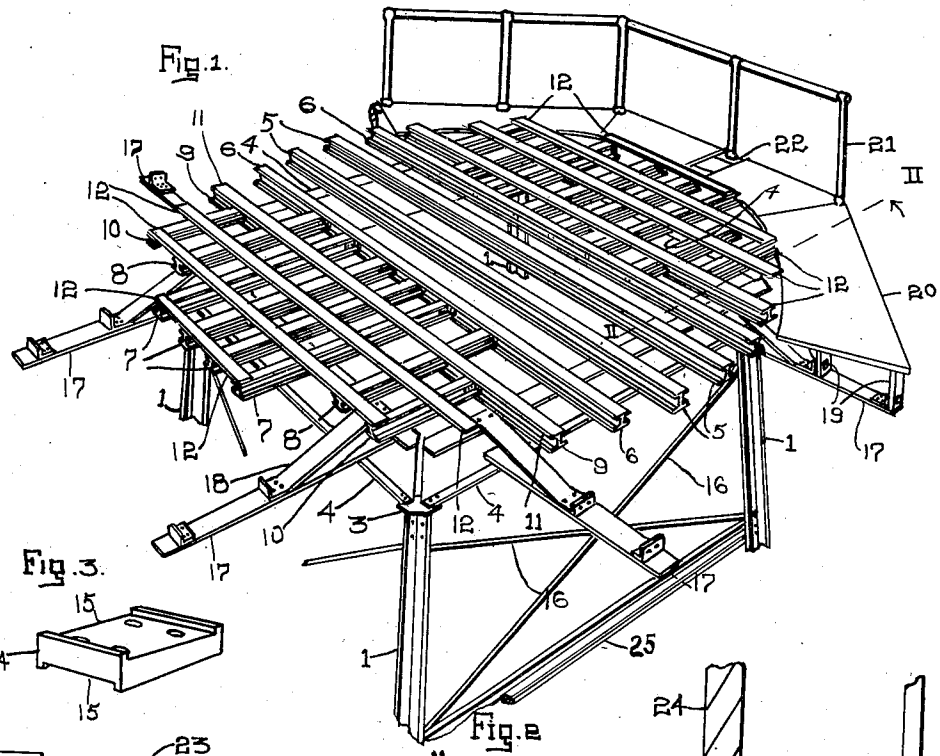


Fig. 3.

Fig. 2.

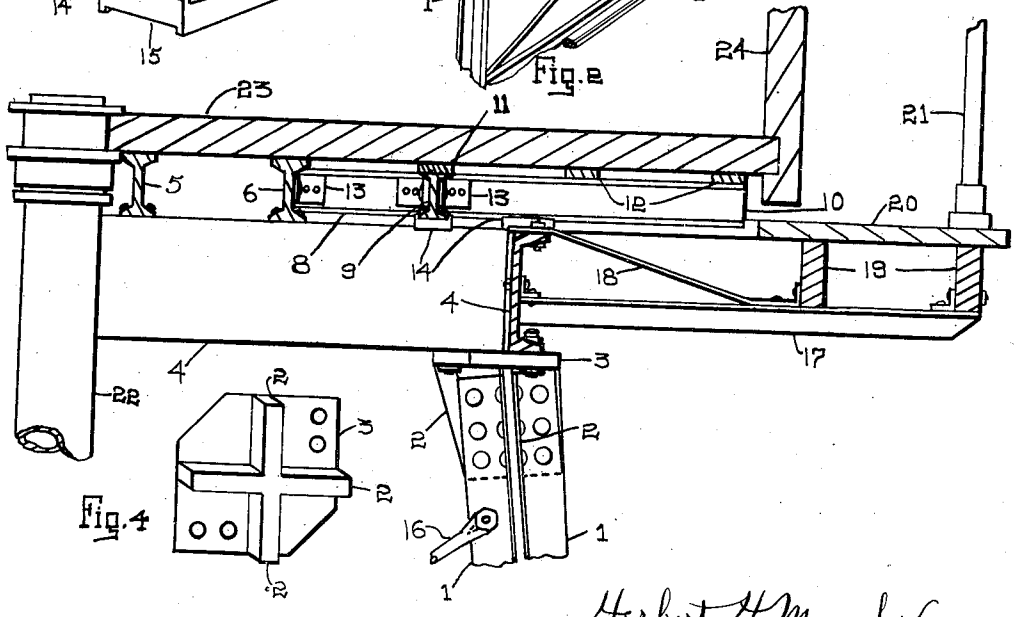


Fig. 4.

WITNESSES

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TANK-SUPPORT.

No. 861,473. Specification of Letters Patent. Patented July 30, 1907.

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To all whom it may concern:

Be it known that I, HERBERT H. MACOMBER, a citizen of the United States, residing at Kendallville, in the county of Noble and State of Indiana, have invented a new and useful Tank-Support, of which the following is a specification.

This invention relates to load supports, and more particularly to structural metal tower platforms.

This invention has utility when embodied in tank supporting towers.

Referring to the drawings: Figure 1 is a perspective view of an embodiment of the invention in a tower-carried structural-metal tank-platform, parts being broken away; Fig. 2 is a section on the line II—II, Fig. 1, looking in the direction of the arrow, showing besides the support, a portion of the tank and pipe connected thereto; Fig. 3 is a perspective view of a fitting block serving to position certain of the beams in relation to the girders of the support; and Fig. 4 is a bottom plan view of column head which sustains the ends of two girders.

The sustaining means for the platform is shown as comprising a plurality of columns built up of angle bars 1. Each column carries means upon which girders may be mounted. This means is in the form of a column head having radiating flanges or webs 2 for spacing the angle bars 1. At an angle to the radiating flanges 2 of the head is the plate 3, integral therewith. The head is secured to the column angle bars 1 and also to girders 4. The girders 4 are usually of a standard structural metal shape, and are herein shown as channels. These flanged girders 4 are in an endless series connecting the columns. They are girders because loaded transversely, and in successively connecting the columns constitute an endless series.

As herein disclosed, there is a series of four columns and four girders. Extending transversely of two flanged girders 4 are beams 5 and 6, which form a parallel series. Connected to I-beams 6 are a plurality of beams 7 and 8 extending transversely of but one girder 4. Beams 9 are connected to beams 8, and have connected thereto beams 10. I-beams 7, 8, 10, form a series differently extending to parallel series of I-beams 5, 6, 9. The flanged beams 7, 8 and 10 are parallel to each other.

Inasmuch as the series of beams 7, 8, 9, 10, have not load carrying points so remote from their supports as beams 5, 6, this second series of beams may be of less cross-section. Instead of being coped to bring their upper flanges into a common plane with the main series of beams 5, 6, the connection brings these flanges of the auxiliary series slightly below. This feature has utility when the construction is for tanks having wooden bottoms, as strips 11, 12 besides bringing the two series of tank sustaining beams into a common plane, extend parallel with beams 5, 6, and transversely of the floor timbers of the tank, thereby insuring a most uniform support. The connections between the beams is shown as effected by securing angles 13, while the auxiliary series of beams 7, 8, 9, 10, are brought into a common plane as to the girders 4, with beams 5, 6, by fitting blocks 14, which have oppositely extending ways 15, one on each side, one of which ways engages the girder 4, and the other a beam. The auxiliary series of beams 7, 8, 9, 10, lies between the upper and lower planes of series of beams 5, 6. Strips 11, 12, and blocks 14, each serve as means to bring the auxiliary series of beams to the plane of the main series. As the lower flanges of the auxiliary and main series of beams are not herein shown as coped together in a common plane, the blocks 14 are used to bring the beams into a common plane as to the girders.

For circular tank supports, the two series of beams have their lengths so graduated as to fall just within the chime of the tank. This construction does away with the use of wooden sills so liable to rot away, permits unequal settling of the tank, distortion and consequent leakage. There is provided not only a permanent support, but weight for weight of metal, a most rigid structure. Whatever slight depression may occur due to heavy loading will be at a maximum near the center, where the tank bottom may yield without disastrous results. The entire outer wall of the tank is close to that portion of the beams over the heavy girders, which unyielding structure precludes distortion, avoids resulting leakage and thereby lengthens the life of the installation. By carrying tanks on endless series of girders, there is a more equal load distribution to the tower as the load is so distributed as to be applied to two sides of each column. The columns being well tied by guy rods 16 and held spaced by girders 4 and struts 25, unequal settling is most effectually guarded against.

Carried by the girders 4 are arms 17, rigidly held by braces 18. Beams or joists 19 are mounted on the arms 17 and carry the floor 20 of the walk way which may surround the tank. About the walk way is guard rail 21. Through the tower extends the pipe 22 into the bottom 23 of the tank. The tank bottom 23 rests directly upon the structural metal tank support. Just beyond the ends of the two series of tank sustaining beams are the tank staves 24 surrounding the bottom 23. The endless series of girders besides producing a more unitary structure, may be of less cross-section than when built otherwise, owing to the load distribution.

What is claimed and it is desired to secure by Letters Patent is:

1. A tank support comprising a series of columns,

flanged girders carried by the columns and flanged beams carried by the girders and directly sustaining the tank.

2. A tank support comprising a series of columns, a plurality of girders connected to one of the columns, and tank sustaining beams carried by the girders.

3. A tank support comprising a plurality of columns, an endless series of girders connecting the columns and tank sustaining beams carried by and extending across each of the girders.

4. A tank support comprising an endless series of girders and a plurality of tank sustaining beams carried by each girders, the outer ends of said beams approximating a circle.

5. A tank support comprising an endless series of girders and a plurality of tank sustaining beams extending transversely of each of the girders.

6. A tank support comprising a plurality of tank sustaining beams, an endless series of supporting girders therefor and a plurality of columns, each girder resting on at least two columns.

7. A tank support comprising two parallel series of flanged beams, each series sustaining separate portions of a tank bottom and supporting means for the beams intermediate their ends.

8. A tank support comprising two differently extending parallel series of flanged beams, each series sustaining less than the entire tank bottom and supporting means for the beams intermediate their ends.

9. A tank support comprising two series of tank sustaining beams, one of which series is within the planes of the other series, and means to bring one side of the two series of beams into a common plane.

10. A tank support comprising two series of tank sustaining beams and means to bring two sides of the two series of beams into two common planes.

In testimony whereof I affix my signature in the presence of two witnesses.

HERBERT H. MACOMBER.

Witnesses:
GEO. W. TRINDLE,
WM. J. FRANKE.