March 8, 1949. E. M. DETERS 2,463,754

TANK FOOT

Filed April 8, 1946

Fig. 1

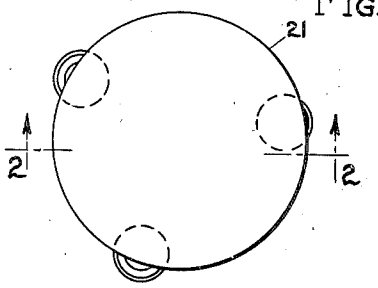


Fig. 2

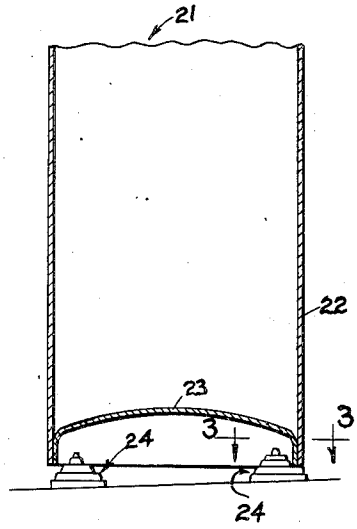
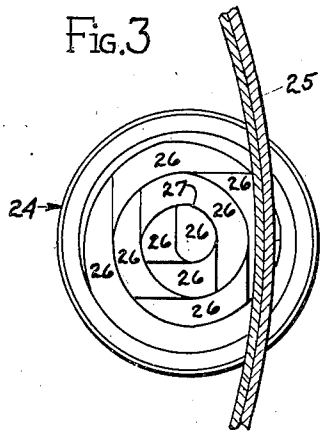


Fig. 3



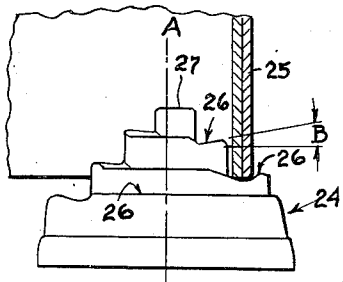


Fig. 4

Fig. 5

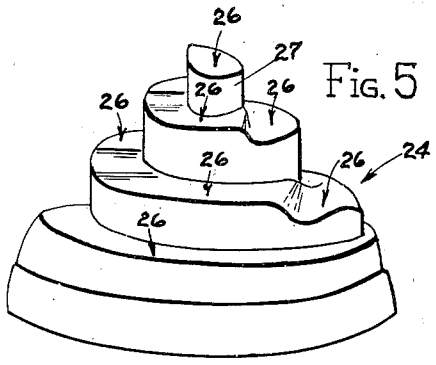
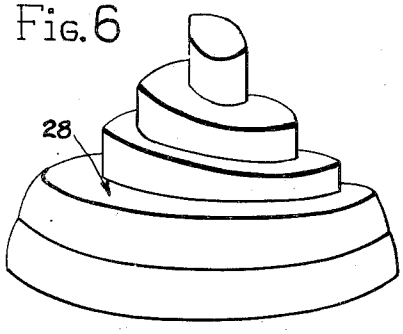


Fig. 6



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TANK FOOT

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Application April 8, 1946, Serial No. 660,560

7 Claims. (Cl. 45—139)

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This invention relates to a tank foot or leveling device.

A principal object of the invention lies in the provision of a compact, economical, one-piece leveling device which may be used either alone or in sets of two or three or more to support the bottom of a tank or the like at different heights at different positions whereby the tank will be in a level position regardless of irregularities in the floor level.

Certain previous constructions of tank leveling devices have included (*a*) ordinary longitudinal wedge-shaped members with or without steps formed thereon, (*b*) cylindrical members having a series of steps arranged in helical succession, that is, at different levels but at the same distance from the center, and (*c*) multi-piece members having two or more wedge-shaped elements slidable upon one another to provide an infinite range of adjustment. None of these have been entirely satisfactory for this purpose in that the longitudinal wedge type and the cylindrical type have both been too bulky for the range of height adjustments provided; and the multi-piece type has been expensive due to the manufacturing, assembling, and packaging problems presented in a two-piece construction.

It is, therefore, an object of the present invention to provide a generally circular-shaped tank foot which will take the form of a single piece but which will provide a wide range of support heights approaching that of the multi-piece type above described.

The present invention may be regarded as an improvement over the above-mentioned one-piece cylindrical type in the respect that the steps are arranged in a spiral succession rather than in a helical succession, whereby more than twice the number of steps and hence more than twice the adjustment range is provided in a foot of a given diameter and height.

Other objects and advantages will be apparent from the following description in which reference is made to the accompanying drawing illustrating a preferred embodiment of the invention and wherein similiar reference characters designate similar parts throughout the figures.

In the drawing:

Figure 1 is a top view of a tank supported by three of the feet which are the subject of this invention;

Fig. 2 is a sectional elevational view of Figure 1 taken on the line 2—2;

Fig. 3 is a partial sectional view of Fig. 2 taken on the line 3—3 and shows a top view of one of the tank feet;

Fig. 4 is a side elevational view of the parts shown in Fig. 3;

Fig. 5 is a perspective view of the tank foot or support showing more clearly the spiral succession of the steps, and

Fig. 6 is a view of a modified form of the invention.

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The invention is illustrated as it may be used with a tank generally designated 21 formed of a tubular upstanding portion 22 and an inverted domed bottom 23. Modifications within the scope of this invention are equally applicable to many other types of tanks, for example, square tanks with flat bottoms; such modifications are not specifically illustrated in the drawings inasmuch as it is believed that they will be evident to those skilled in the art.

The supporting device or foot generally designated 24 may be formed of a single piece, for example, of cast iron. A series of steps 26 ascend along the top outer surface in a spiral succession, that is, each succeeding step is at a higher level and closer to the center line A—A (Fig. 4) than the preceding step. The steps terminate in a flat topped central axial extension 27 which also may be used as a supporting surface if desired. In the Fig. 3 and 4 embodiment the successive steps 26 will be spaced at about 90° around the axis A—A; other embodiments may utilize different angular spacing and in some cases it may be desirable to vary the angular spacing of successive steps at different levels so that all steps may be substantially the same length. For example, it may be found desirable to space the upper steps at approximately 90°, and the lower steps at approximately 45°, thereby increasing the range of adjustment height available.

The individual steps 26 may be inclined upward and outward at a suitable angle to more postively engage the depending skirt portion 25 of the tank as shown in Fig. 4. Highly satisfactory results have been experienced where the inclination of the step surface with respect to a vertical plane, that is the angle B in Fig. 4, is in the range between 5 and 15°. This inclination of the step surface is not essential however, as satisfactory results have also been experienced with horizontal steps and in some cases, as for instance, with flat bottomed tanks having no equivalent of the skirted portion 25, horizontal steps may even be preferred for flatwise engagement with the tank bottom.

Another modification of this invention is shown

in Fig. 6 where the supporting height is made infinitely variable, within limits of the top and bottom of the foot, by providing a single spiral surface 28 in place of the spiral succession of individual steps 26 as shown in the previous figures. And, as previously explained in connection with the Fig. 4 modification, the outer edge of the surface 28 may or may not be higher than the inner edge.

It is believed that the use and operation of this device will be apparent from the foregoing. On round tanks, as illustrated, a group of three tank feet will usually be sufficient to provide the required stability, and on rectangular or square tanks four or more feet may be required. In use, the tank will be temporarily supported as by means of blocks or jacks to the level position desired, and the tank feet 24 then inserted beneath the tank edge and rotated until a suitable supporting surface 26 (or a suitable part of the spiral surface 28 in the Fig. 6 modification) is level with the corresponding portion of the tank bottom. Then the temporary support will be removed and the full weight of the tank allowed to rest upon the set of feet. The problem of leveling a tank in this manner is commonly presented when installation is made on a floor pitched to a drain, as that shown in Fig. 2.

I claim:

1. A supporting foot for a tank or the like comprising a body having formed thereon a series of steps arranged in spiral succession about an axis of the body, said steps being spaced axially of the body and disposed at progressively greater radial distances from the axis of the body from the top to the bottom of the body.

2. A supporting foot for a tank or the like comprising a body having formed thereon a series of steps spiraled around the center of the body and arranged at different levels and different distances from the center thereof.

3. A supporting foot for a tank or the like comprising a solid body having formed thereon a series of steps arranged in spiral succession and spaced approximately 90° from one another about an axis of the body, said steps being disposed at progressively greater radial distances from the central axis of the body from the top to the bottom of the body.

4. A supporting foot for a tank or the like comprising a solid body having formed thereon a series of steps arranged in spiral succession about the axis of the body, said steps being disposed at progressively greater radial distances from the center axis of the body in a direction extending from the top to the bottom of the body, the outer portion of each of said steps being at a higher level than the inner portion.

5. A supporting foot for a tank or the like comprising a rigid body having formed thereon a series of steps spiraled around the center of the body and progressively arranged at different levels and different distances from the center thereof, each of said steps being pitched upwardly and outwardly at an angle of 5 to 15° with respect to a horizontal plane.

6. A supporting foot for a tank or the like comprising a solid rigid body having formed thereon a spirally ascending upwardly facing surface, said surface being progressively radially closer to the axis of said body in a direction from the bottom to the top of the body.

7. A supporting foot for a tank or the like comprising a body having formed thereon a spirally extending upwardly facing surface, said surface being at progressively greater radial distances from the central axis of the body from the top to the bottom, said surface being so formed that at a radial cross-section through a vertical plane the outer portion will be at a higher level than the inner portion.

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