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1,777,553

TANK BALL

Filed Jan. 30, 1929

FIG. 1.

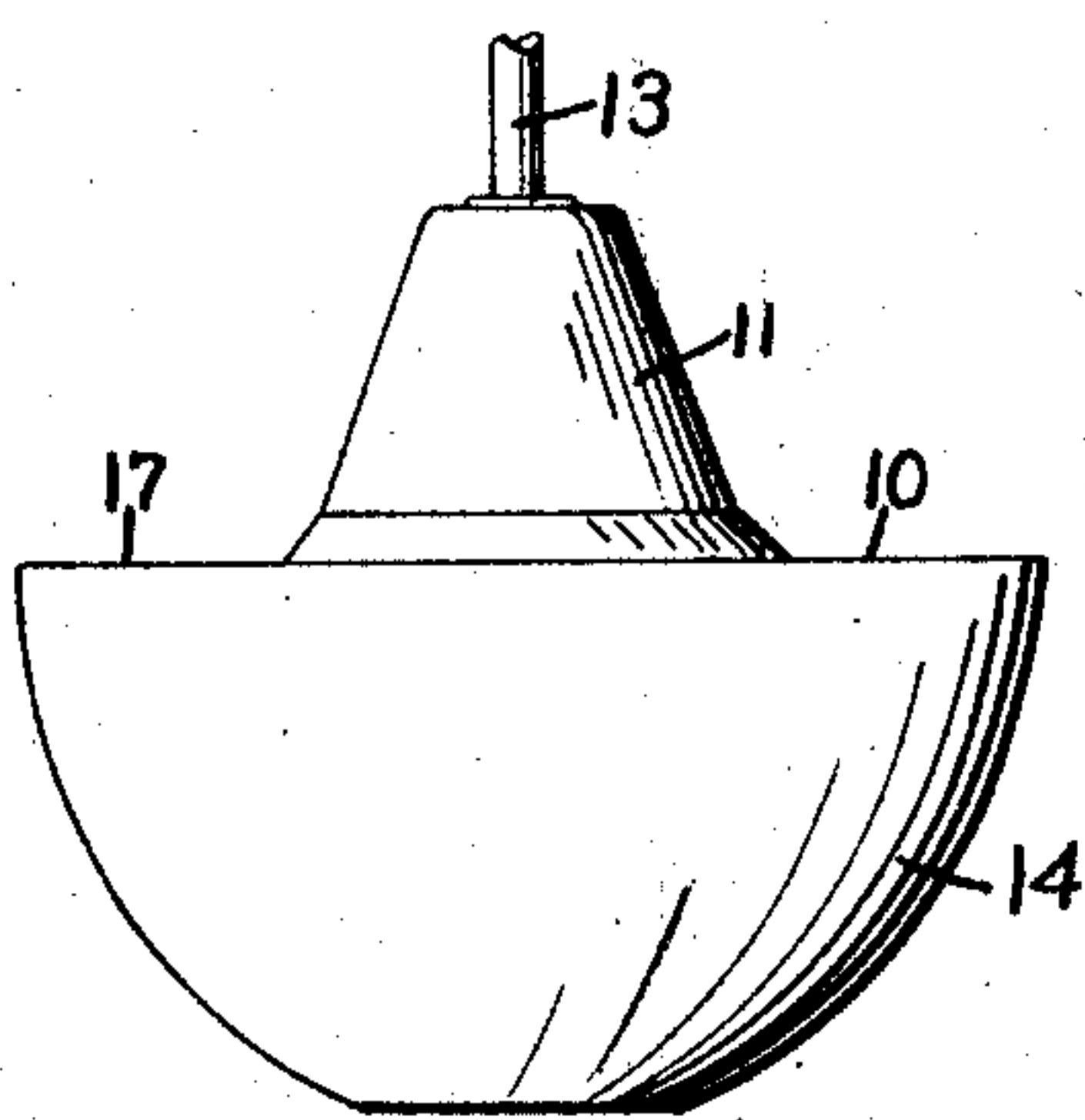


FIG. 2.

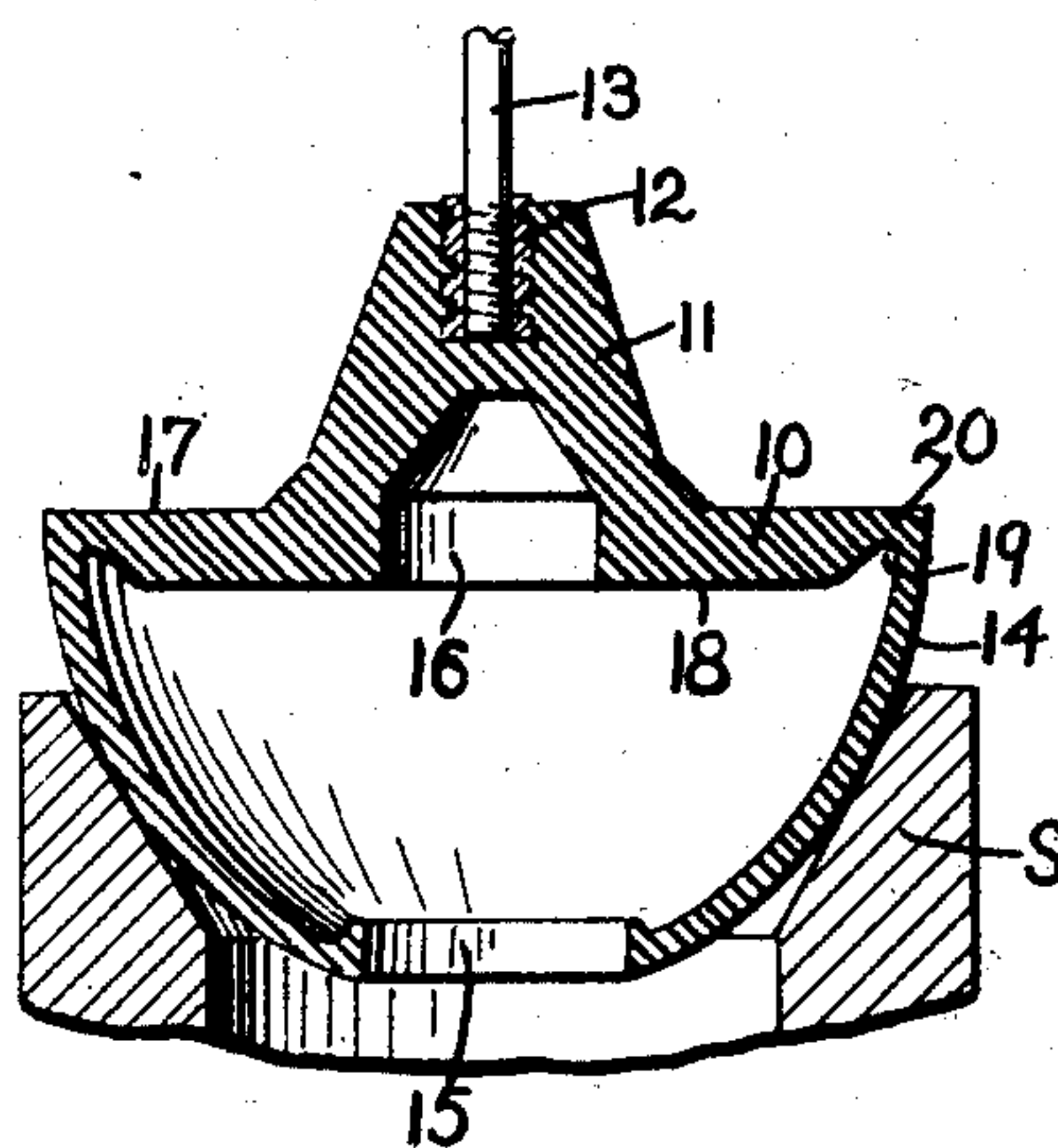


FIG. 3.

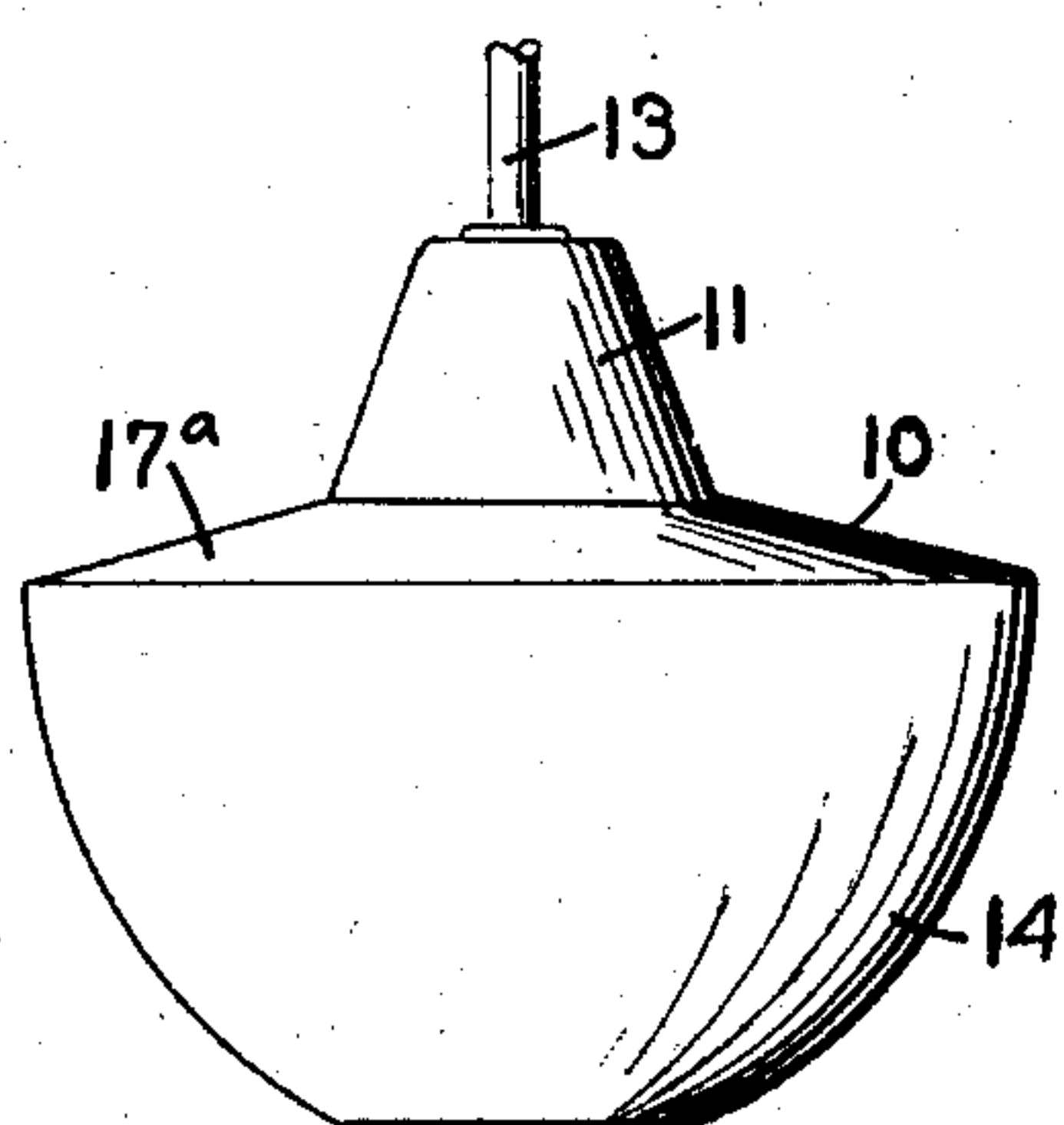
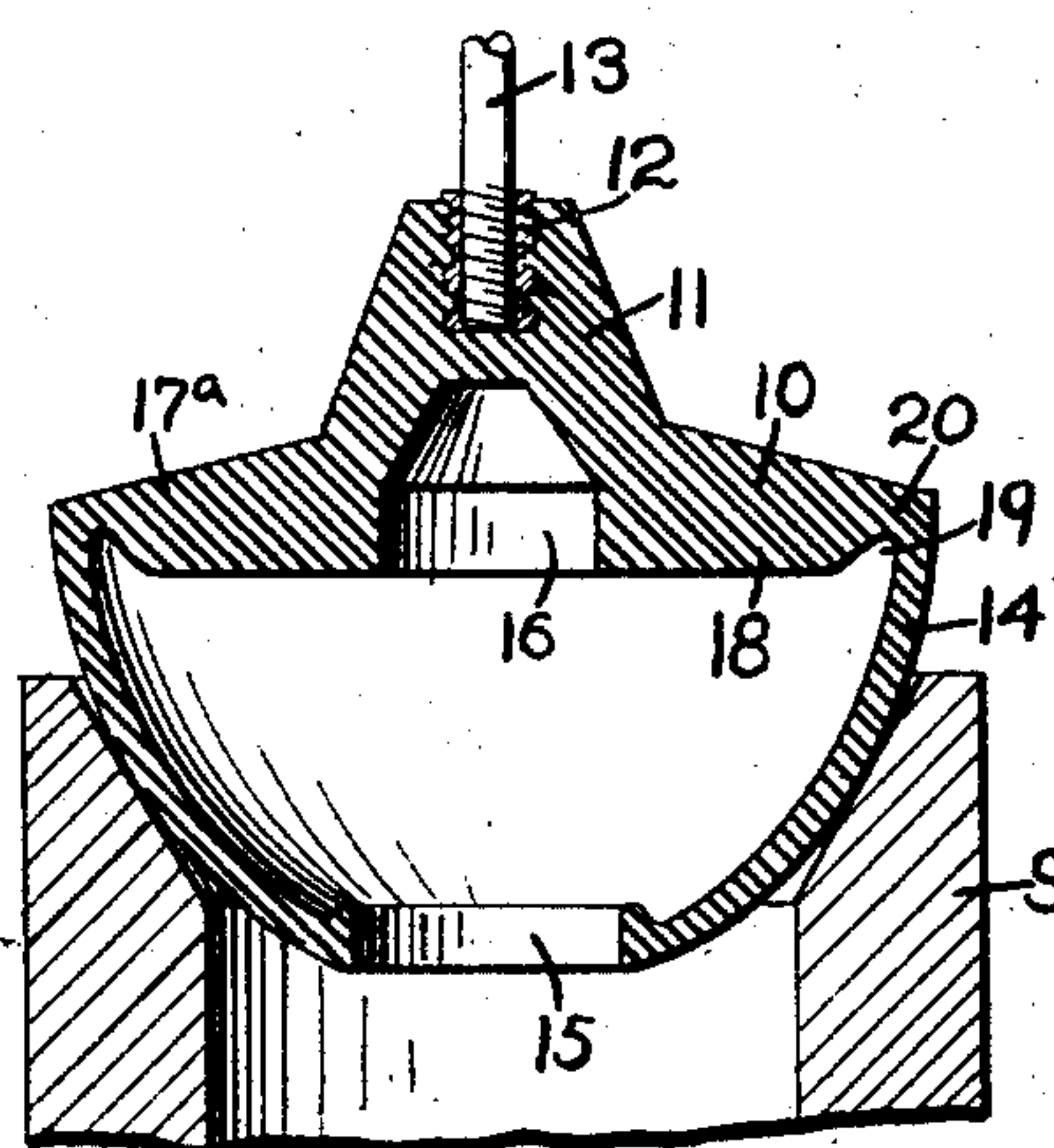


FIG. 4.



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TANK BALL

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This invention relates to improvements in tank balls or valve closures employed in flush tanks.

Heretofore tank balls have been provided which have a top and a relatively flexible lower portion which is adapted to seat upon the valve seat. In the conventional prior construction the top is made relatively thick as compared with the thickness of the flexible lower portion so that it is somewhat stiffer than the lower portion. The thickness of the top is usually preserved up to and in the juncture between the top and lower portion and such a construction has been found to be disadvantageous, where the juncture between the top and the flexible lower portion cannot flex as easily as the remainder of the lower portion. As tank balls are used under various circumstances the ball may seat anywhere on the exterior surface of the lower portion, that is, at the bottom of the lower portion, at the top of the lower portion, near the juncture with the top or at any intermediate position. It is highly desirable to have the lower portion with a uniform flexibility from top to bottom so that regardless of where it seats on the valve seat it will have the same flexibility and form a tight closure.

It is therefore an object of this invention to provide an improved tank ball wherein the flexible lower portion has a uniform flexibility from top to bottom.

Another object of the invention is to provide a tank ball wherein there is a groove formed on the under side or interior of the juncture between the top and the flexible lower portion. The groove enables the flexible lower portion near its upper edge to be bent inwardly as readily as any other part of the lower portion and also causes the top of the tank ball where it joins the lower portion to have about the same thickness as the lower portion and thus preserve the flexibility of the lower portion from its bottom to its extreme top.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings

for an illustrative embodiment of the invention wherein:

Fig. 1 is a view in side elevation of one form of tank ball embodying the invention.

Fig. 2 is a vertical section through the same, illustrating the ball in seating position.

Fig. 3 is a view in side elevation illustrating a slightly modified form of construction.

Fig. 4 is a vertical section through the modified form of construction.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout the improved tank ball comprises a top 10 having an upstanding central post 11 in which there is a metal spud 12 into which the valve rod 13 may be screwed. Suspended from the periphery of the top 10 is a substantially hemispherical lower portion 14 which is relatively thin so as to be fairly flexible. An aperture 15 is formed in its bottom and the bottom of the post 10 may be hollowed out as indicated at 16.

In the modification shown in Figs. 1 and 2 the top surface of the top 10 about the post 11 is flat, indicated at 17 and the top presents an annular bottom surface 18. The invention consists of forming an annular groove 19 on the interior of the tank ball at the juncture between the top 10 and the flexible lower portion 14. This groove enables the top of the lower portion to be pressed inwardly quite readily if such is necessary in causing the tank ball to properly seat on its seat S. Also the groove causes the top 10 at its juncture with the lower portion 14 to be of the thickness indicated at 20 which is approximately the same as the thickness of the lower portion. By the improved construction it will be appreciated that the juncture between the top and the lower portion is of substantially the same thickness as the thickness of the lower portion so that the flexibility of the lower portion 14 will be preserved and kept uniform up to its extreme top edge. The thickness of the top 10 in no way interferes with the flexibility of the lower portion 14 or tends to stiffen it near its top. The modi-

fication disclosed in Figs. 3 and 4 is substantially of the same construction as that disclosed in Figs. 1 and 2 except that the top 10 instead of having a flat top surface 17 has a beveled top surface indicated at 17^a.

From the above described construction it will be appreciated that an improved tank ball is provided wherein the flexibility of the lower seating portion is preserved throughout so that regardless of the locality on the exterior of the lower portion at which the ball engages the seat S it will have the same flexibility desired to form a tight seal.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. A tank ball comprising a hollow body having a relatively stiff top and a flexible lower seating portion, the top presenting an annular bottom surface which is approximately flat, there being a groove formed in the bottom surface of the top about the flat surface and which is located at the juncture between the top and the flexible lower portion as and for the purpose described.

2. A tank ball comprising a hollow body having a relatively thick stiff top and a comparatively thin flexible lower seating portion, the top having a groove formed on its under surface at the juncture between the top and the flexible lower portion so as to preserve the flexibility of the lower portion to the extreme upper end thereof.

In testimony whereof I have signed my name to this specification.

HUBERT R. CRANE.