March 4, 1930. S. F. BEASLEY 1,749,122

BOLTED DOME COVER

Filed June 22, 1928

Fig. 1

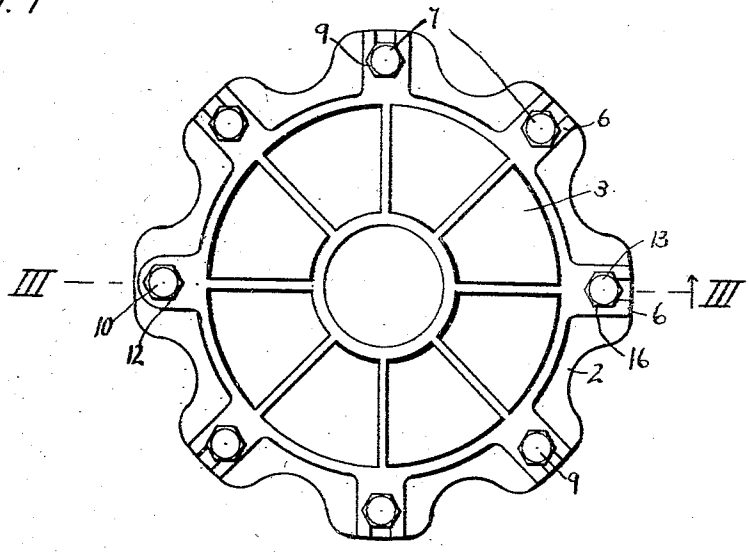


Fig. 2

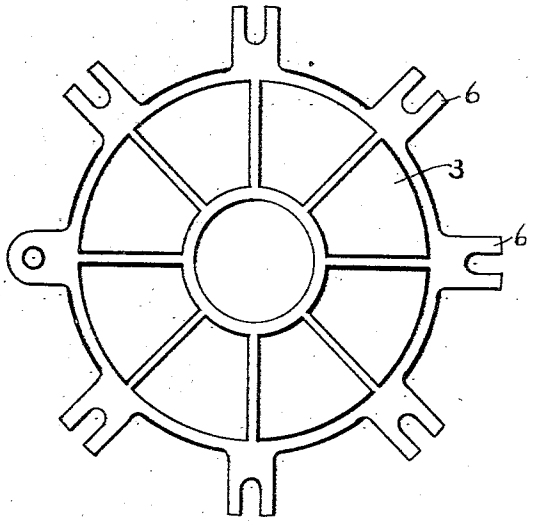
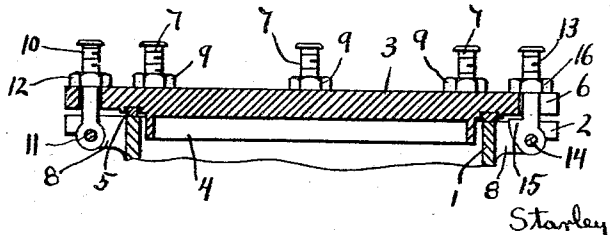


Fig. 3



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BOLTED DOME COVER

Application filed June 22, 1928. Serial No. 287,591.

This invention relates to bolted dome covers for tanks and has for its principal object to produce a safety cover of such character that it is impossible for a careless or unskillful workman to release and free the cover from restraint so that, if there is pressure within the tank, the cover may be blown free and lead to personal or property damage.

Another object of the invention is to provide means whereby the operator cannot throw back the cover to give access to the tank until he has effected venting or exhausting of the tank pressure.

A still further object of the invention is to provide the above operating means with a lifting lug or the like whereby jambed or sticking dome covers may be broken free while still retaining restraint on the cover to prevent internal pressure from blowing the cover off the tank as above mentioned.

With the general objects named in view, the invention consists in certain novel and useful features of construction and combinations of parts as hereinafter described and claimed; and in order that it may be fully understood, reference is to be had to the accompanying drawing, in which:

Figure 1 is a top plan view of the cover embodying the invention.

Figure 2 is a top plan view of the cover dome.

Figure 3 is a section on the line III—III of Figure 1.

In the said drawing, where like reference characters identify corresponding parts in all of the figures, 1 indicates an upstanding collar surrounding a tank opening, said collar being formed with an outwardly-projecting flange 2 at its upper end and being normally closed by a dome cover 3 having an internal circumferential downwardly-projecting centering flange 4 within and a gasket 5 fitted upon the flange 2.

The dome cover is formed with a plurality of radially projecting pairs of ears 6 and pivoted between said ears are a series of similar bolts 7. The bolts 7 at their lower ends terminate in eyes which are pivotally mounted between bifurcated ears 8 outwardly projecting from the collar 1 below its flange 2. The bolts 7 are each equipped with a clamp nut 9 whereby pressure may be applied to maintain the dome cover on its seat, and it will be evident that if the nuts are sufficiently unscrewed, the bolts 7 may be swung around their pivots between the ears 6 to effect their withdrawal from the slots 6 and the cover thereby released for removal. However, under normal conditions, the operator has no means of judging whether or not there is pressure within the tank and it frequently occurs that the cover is jambed or stuck on its seat, and although the pressure in the tank is unable to loosen the cover, such pressure is sufficient after the cover has been loosened by hammering, to blow it from position.

In order, therefore, to provide means for making it impossible for the operator to entirely loosen the cover so that it is unrestrained, without first releasing the internal pressure, a bolt 10 corresponding to the bolts 7 is pivotaly mounted on pin 11 between a pair of the ears 8 of the tank. The said bolt 10 passes through an unslotted perforation in the dome cover, so that it can not be swung pivotally and its nut 12 will therefore always overlie the cover.

Between another of the pairs of ears 6, preferably diametrically opposite bolt 10, a bolt 13 is pivoted on a cross pin 14, said bolt being formed with an upwardly-facing lug 15 so that pivotal action of the bolt shall cause its lug to apply upward pressure on the dome cover. Thus the bolt 13 can not be swung outwardly so that its nut 16 does not overlie the dome cover without effecting the lifting of said cover and the consequent release of pressure from within the tank. In other words, bolt 13 acts as a pry to release jambed or stuck covers.

The preferred method of operation is to unscrew all of the nuts, and then to pivotally operate the bolt 13 to loosen the cover. If there is sufficient pressure in the tank the cover will be forced vertically upward until limited through abutment with the restraining nuts on all of the bolts.

However, it is to be pointed out that even though the operator through carelessness

unscrews all of the bolts 7 and throws them to such a position that their nuts 9 do not overlie the cover, there will always be at least two bolts, 10 and 13, holding the cover against internal pressure. It will be apparent that the above is true on account of the fact that the lug 15 strikes and reseats the cover before the nut 16 of the bolt 13 has passed below the horizontal plane of the top of the cover. Thus immediately a jammed cover of a pressure holding tank is released, it will move upwardly and effect return of bolt 13 to vertical position so that nut 16 may assist the nut 12 of bolt 10, and the bolts if standing in vertical position, to retain the cover from being blown free of its seat.

From the above description it will be apparent that I have produced a bolted dome cover possessing the features of advantage set forth as desirable in the statement of the object of the invention, and which may be modified in minor particulars without departing from the principle of construction and mode of operation involved or from the spirit and scope of the appended claims.

I claim:

1. A bolted cover for pressure tanks comprising the combination with a tank having an opening, of a cover for said opening having a pair of spaced ears, a bolt pivotally secured to said tank and projecting between the ears of the cover and having an enlarged portion overlapping the cover, and a cam lug formed integrally with the bolt to effect unseating of the cover upon pivotal movement of said bolt, the enlarged portion overlapping the cover until the latter has been unseated by the cam.

2. The combination with a tank having an opening, of a cover for said opening, and a fastening device pivotally secured to the tank and normally maintaining the cover in seated position, said fastening device upon being pivotally operated effecting an unseating of the cover before the device can be completely disengaged from the cover to allow complete removal of said cover.

3. The combination with a tank having an opening, of a cover for said opening, a bolt pivotally secured to the tank and having a cam portion underlying said cover when the latter is in seated position, and a nut on said bolt normally overlying the cover so that the bolt cannot be pivotally moved to withdraw the nut from cover-overlying position without causing said cam to first effect the unseating of the cover.

In testimony whereof I affix my signature.

STARLEY F. BEASLEY.