C. R. HARRIS.

VENT FOR TANK CARS.

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1,047,517. Patented Dec. 17, 1912.

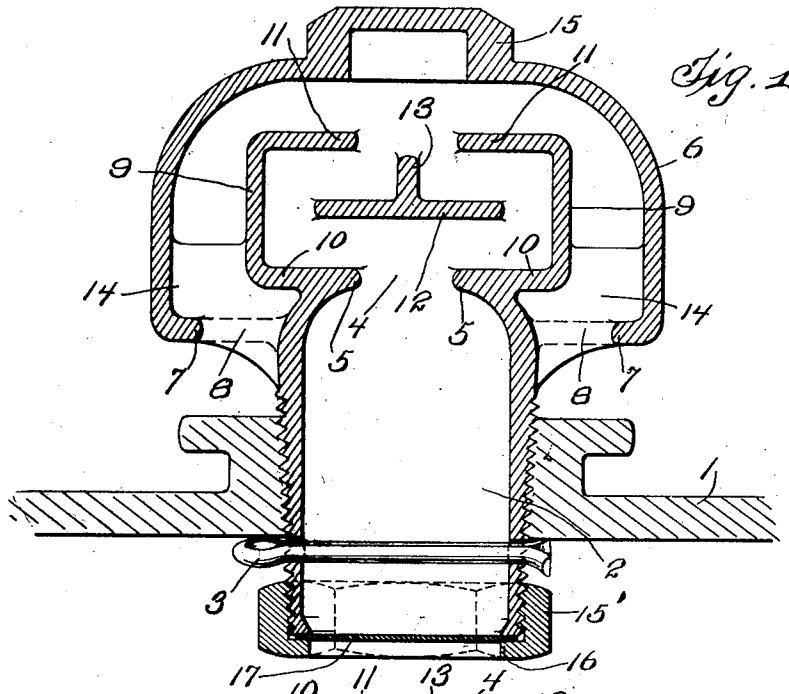

Fig. 1.

Fig. 2.

WITNESSES

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VENT FOR TANK-CARS.

1,047,517. Specification of Letters Patent. Patented Dec. 17, 1912.

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To all whom it may concern:

Be it known that I, CLIFFORD R. HARRIS, residing at Worcester, Massachusetts, and being a citizen of the United States, have invented certain new and useful Improvements in Vents for Tank-Cars, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof will occur to persons skilled in the art.

In said drawings: Figure 1 is a vertical central section through a vent embodying the features of the present invention. Fig. 2 is a view thereof partly in top plan and partly in horizontal section, fragments being broken away for clearness of disclosure.

Referring to the drawings by numerals, 1 indicates the dome cover of a tank car having a threaded opening into which is threaded a tubular neck 2 of the present improved vent; a cotter pin 3 may be passed through the portion of the neck 2 extending within the dome cover for preventing accidental loosening of the vent. The upper end of the neck 2 terminates in a throat 4 contracted by restricting walls 5—5 turned inwardly from opposite sides of the upper edge portions of the walls of the neck 2, the contracted throat portion 4 thus assuming the form of an elongated slot-like opening which is centrally disposed with respect to and opens upwardly from neck 2. A hollow hood or dust guard 6 surrounds and incloses and has its upper portion spaced above the throat 4, the lower edges of the hood being formed with inturned flanges 7—7 formed integral with the hood and integral with the walls of the upper portion of the neck 2, the said flanges being formed with apertures 8—8 communicating between the interior of the hood and the atmosphere. Laterally disposed splash guards comprising walls 9—9 extend upwardly from and are formed integral with the outer edges of outwardly extending horizontal walls 10—10 which are in turn formed integral with the walls 5—5. The ends of the walls 9 are formed integral with the side walls of the hood 6 and their upper edges terminate in horizontally disposed baffle walls 11 having their ends formed integral with the side walls of hood 6 and their inner edges spaced apart, the said walls 11 being spaced vertically above an interposed baffle plate 12, the walls 5, 9, 10, 11 and the hood piece 6 being so arranged as to form an expansion chamber above the throat piece 4. The baffle plate 12 is horizontally disposed and lies immediately above and is spaced from the throat 4 and extends beyond the edges thereof so as to overlap the planes of the walls 5, the plate 12 being formed intermediate its edges, preferably midway of its width with an upstanding ridge 13 terminating just short of the planes of the inner edges of the walls 11, and substantially midway between said edges. The ends of the plate 12 and ridge 13 are formed integral with the walls of the hood 6.

Preferably, approximately midway of the length of each of the openings 8, a cross web 14 is provided, formed integral with and connecting the side walls of the hood 6 and the respective portion of the flange 7 thereof with the walls 9 and 10 and with the upper portion of the wall of the neck 2.

Upstanding from the central portion of the hood 6 is preferably a polysided or nut-like extension 15 adapted to receive an operating tool for threading the vent into place or disconnecting the same. Thus the tubular neck 2 is provided with an open vent or way from the inner end out to the atmosphere, but such way is sufficiently tortuous to insure against the splashing of liquid from within the tank while allowing free discharge of gases.

The structure is preferably cast, and the walls, baffles and hood provide repeated means for guarding the passage from the throat to openings 8 for insuring against escape of liquid while providing a free, open vent for air and gases, the passage leading upwardly from throat 4, being divided and passing about the longitudinal edges of baffle plate 12, at each side thereof, and meeting again between the inner edges of walls 11, and then dividing again within the hood 6 and extending in opposite directions over walls 11 and outside of walls 9, and down to the openings 8.

The walls of the neck 2 near the upper end thereof in being restricted to produce

the throat 4, are curved inwardly so as to tend to throw down any liquid splashing up in the bore of the neck, the walls 10 extending abruptly horizontally outwardly from and at opposite sides of the throat 4, and the walls 9 rising vertically from the outer edges of the walls 10. The baffle plate 12 is horizontally disposed and has flat faces parallel to the flat faces of the walls 10 and 11 and at right angles to the flat faces of the walls 9.

To comply with M. C. B. regulations, where a frangible lead disk is required, I provide a nut 15′ threaded on to the inner end of neck 2 and having the inwardly turned, annular shoulder 16 adapted to engage the edges of frangible disk 17 and hold the same against the lower end of neck 2. If desired the material of the neck may be thickened at its lower end for increasing the purchase of the disk.

What I claim is:

1. A vent for tank cars comprising a tubular neck having its walls curved inwardly from opposite sides at its upper end to a restricted throat, a baffle across the throat spaced walls inclosing said baffle, and a hood covering and inclosing the walls, throat and baffle, and having a passage leading from the throat to the atmosphere.

2. A vent for tank cars comprising a tubular neck, a baffle across the upper end thereof, spaced walls inclosing said baffle, and a hood covering and inclosing the upper end of said neck and covering and inclosing said baffle, and having a passage leading from the neck to the atmosphere, and a frangible disk in said neck.

3. A vent for tank cars comprising a tubular neck having an upwardly opening throat restricted to a slot-like opening, a baffle extending lengthwise of said opening, a wall upon each side of said baffle, and a hood covering the throat, said hood providing an independent passage past each of said walls leading from the throat to the atmosphere.

4. A vent for tank cars comprising a tubular neck, walls outstanding horizontally from the upper end of the neck, vertical walls rising from the outer edges of said outstanding walls, inwardly turned walls extending from the upper edges of said vertical walls, a baffle plate disposed between the inwardly turned walls and said outstanding walls, and spaced from all of said walls for leaving passages from the neck about the baffle, the inner edges of the inwardly turned walls being spaced for forming a passage communicating with said passages, and a hood inclosing all of said walls and having a passage communicating with the last mentioned passage and extending to the atmosphere.

5. A vent for tank cars comprising a tubular neck, outstanding walls connected therewith at the upper end thereof, upstanding and inwardly turned walls connected with said outstanding walls, a baffle plate substantially inclosed by said walls and disposed in the line of the neck and across the discharge of the upper end thereof, said walls being spaced from said baffle for leaving passages about the baffle, and a hood inclosing all of said walls and extending below said outstanding walls, and having a passage communicating with the passages about the baffle plate and extending to the atmosphere at a point below the outstanding walls.

6. A vent for tank cars comprising a tubular neck having a restricted throat at its upper end, outstanding horizontal walls connected with the neck at the point of the throat, upstanding walls connected to the outer edges of the outstanding walls, inwardly turned walls connected to the upper edges of the upstanding walls, all of said walls having flat faces, a baffle disposed between and substantially inclosed by said walls and having flat faces substantially parallel to the flat faces of the outstanding and inwardly turned walls, said baffle being spaced from said walls for leaving passages from the throat about the baffle, and a hood inclosing all of said walls and having a passage communicating with the first mentioned passage and extending to the atmosphere.

7. A vent for tank cars comprising a tubular neck having a restricted throat at its upper end, outstanding horizontal walls connected with the neck at the point of the throat, upstanding walls connected to the outer edges of the outstanding walls, inwardly turned walls connected to the upper edges of the upstanding walls, all of said walls having flat faces, a baffle disposed between and substantially inclosed by said walls and having flat faces substantially parallel to the flat faces of the outstanding and inwardly turned walls, said baffle being spaced from said walls for leaving passages from the throat about the baffle, a ridge upstanding from the baffle in a plane between the planes of the inner edges of the inwardly turned walls, and a hood inclosing all of said walls and having a passage communicating with the first mentioned passage and extending to the atmosphere.

8. A vent for tank cars comprising a tubular neck having a restricted throat, a baffle plate lying across and spaced above the throat, walls extending from the throat past and spaced from each edge of the baffle plate and leaving a passage way about the baffle plate, inwardly turned walls extending from the first mentioned walls and overlapping the baffle plate and spaced therefrom and having their inner edges spaced apart for affording a passage communicating with the

passage about the baffle plate, and a hood inclosing all of said walls and spaced at points from the walls for forming passages communicating with the passage between the inwardly turned walls, the last mentioned passages extending downwardly past said walls and communicating with the atmosphere.

9. A vent for tank cars comprising a tubular neck having an upwardly opening throat restricted to a slot-like opening, a baffle extending lengthwise of said opening, and spaced therefrom, a chamber inclosing said baffle and provided with a constricted outlet, a hood inclosing and communicating with said chamber and with the atmosphere.

10. A vent for tank cars comprising a tubular neck, a baffle across the upper end thereof, a chamber communicating with the atmosphere and inclosing said baffle and forming passages on opposite sides of said baffle and a frangible disk below said baffle.

11. A vent for tank cars comprising as an integer, a tubular neck portion having a constricted slot-like throat, an enlarged chamber communicating with said neck and having a restricted slot-like opening, a baffle plate spaced from the walls of said chamber above said throat slot and provided with an upstanding flange intermediate the width of said baffle plate and a covering and protecting hood in communication with said chamber and the atmosphere.

12. A vent for tank cars comprising a tubular neck constricted at its outlet, an expansion chamber communicating with said outlet and provided with an angular centrally disposed baffle and with a constricted slot-like opening, an inclosing hood having segmental-like openings to the atmosphere communicating with the expansion chamber outlet.

13. A vent for tank cars comprising a tubular neck constricted at its outlet, an expansion chamber communicating with said outlet of the tubular neck and provided with an angular centrally disposed baffle and with a constricted slot-like opening an inclosing hood having a recess above said expansion chamber outlet and having segmental-like openings to the atmosphere communicating with the expansion chamber outlet.

14. A vent for tank cars comprising a tubular neck constricted at its outlet, a frangible disk secured thereto at the inlet of said tubular neck, an expansion chamber communicating with said outlet of the tubular neck and provided with an angular centrally disposed baffle and with a constricted slot-like opening and an inclosing hood having segmental-like openings to the atmosphere communicating with the expansion chamber outlet.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CLIFFORD R. HARRIS.

Witnesses:

ROBT. W. MOFFETT,

B. J. WEISMER.