Jan. 23, 1940. M. SWENSEN ET AL 2,188,123

MANHOLE COVER

Filed Oct. 10, 1938 2 Sheets-Sheet 1

Fig. 1.

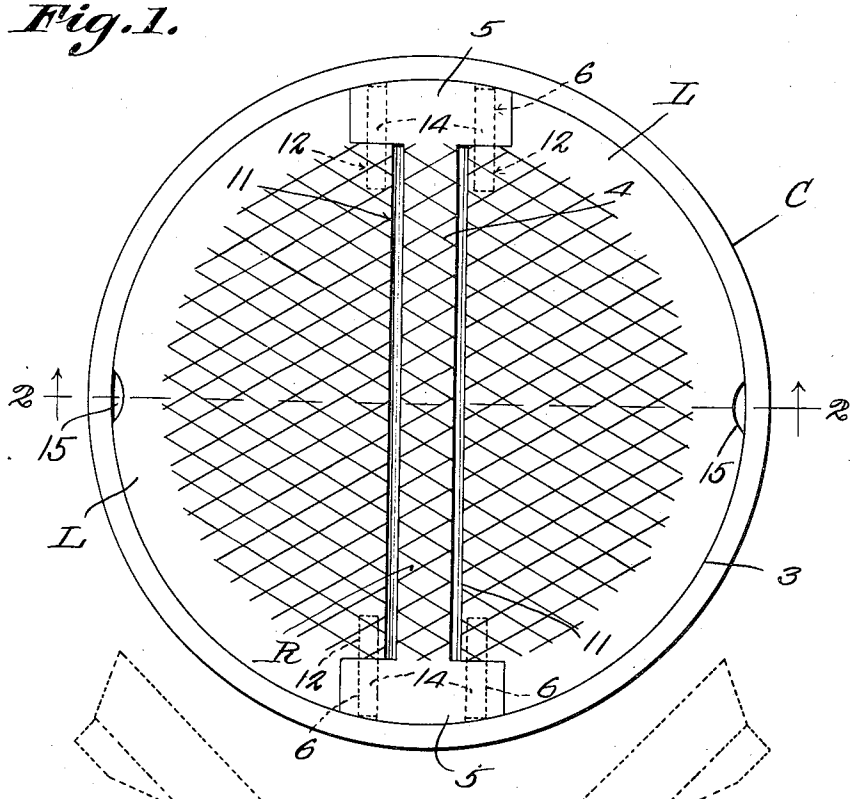


Fig. 2.

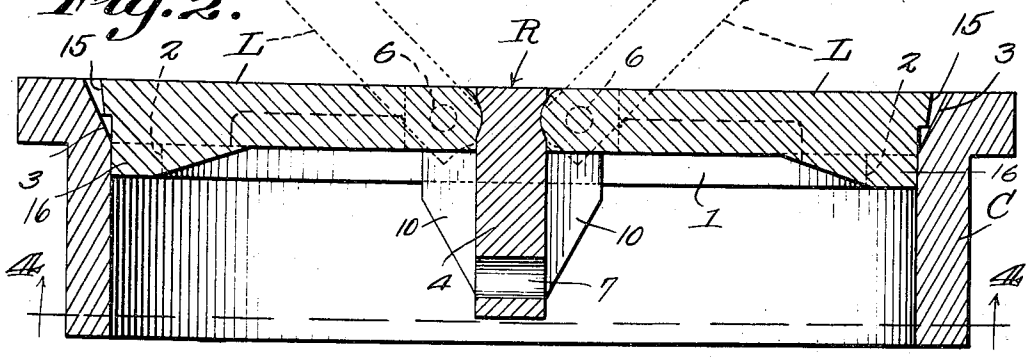
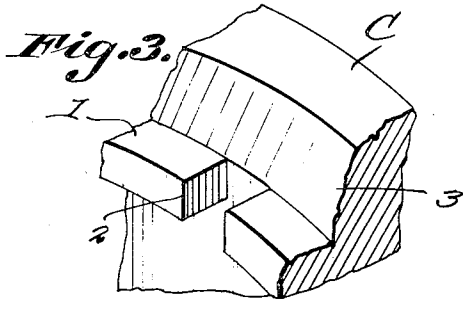


Fig. 3.



Martin Swensen
Frank Patterson
INVENTORS.

BY C. A. Snow & Co.

ATTORNEYS.

Jan. 23, 1940. M. SWENSEN ET AL 2,188,123

MANHOLE COVER

Filed Oct. 10, 1938 2 Sheets-Sheet 2

Fig. 4.

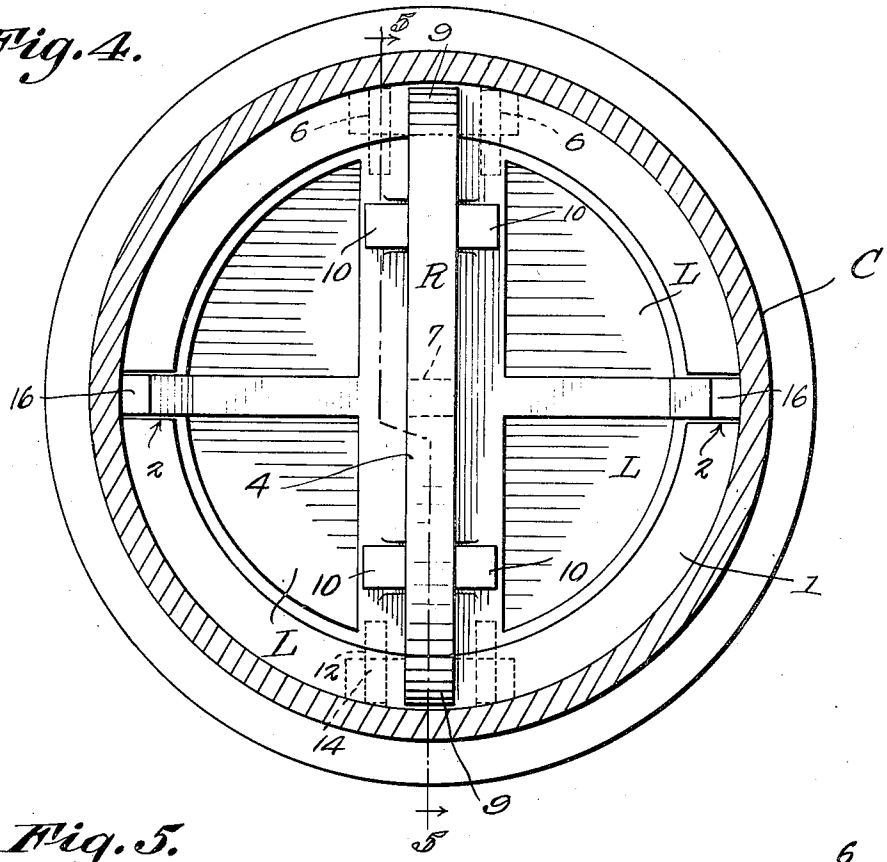
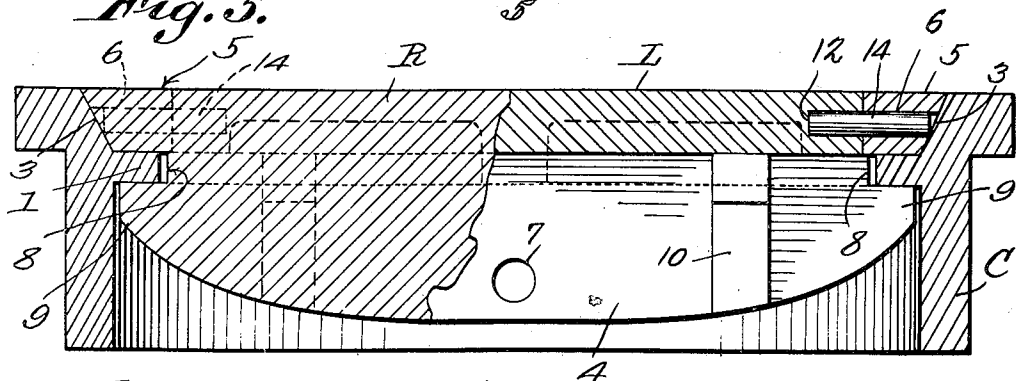


Fig. 5.



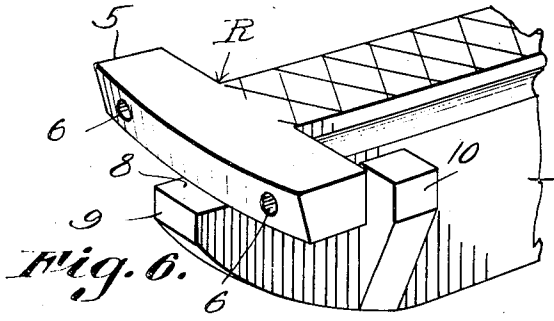


Fig. 6.

Martin Swensen
Frank Patterson
INVENTOR.

BY C. A. Snow & Co.
ATTORNEYS.

Patented Jan. 23, 1940

2,188,123

UNITED STATES PATENT OFFICE

2,188,123

MANHOLE COVER

Martin Swensen and Frank Patterson,
Springfield, Ohio

Application October 10, 1938, Serial No. 234,226

4 Claims. (Cl. 94—36)

This invention aims to provide a manhole cover wherein a closure is so constructed that it can be interengaged, in a novel way, by rotation, with a casing, the closure having novel means whereby rotation may be imparted to it, novel means being supplied whereby the lids of the closure will be supported, when they are closed, to take the strain off the lid hinges, the entire structure being of great strength, simple in construction, and well adapted to withstand the severe use which it is likely to encounter.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the drawings:

Fig. 1 shows in top plan, a manhole cover constructed in accordance with the invention;

Fig. 2 is a transverse section on the line 2—2 of Fig. 1;

Fig. 3 is a perspective view showing a portion of the casing;

Fig. 4 is a section on the line 4—4 of Fig. 2, the view being, in substance, a bottom plan;

Fig. 5 is a section on the line 5—5 of Fig. 4;

Fig. 6 is a perspective view showing one end of the midrail.

The device forming the subject matter of this application preferably is made of metal throughout, and includes an annular casing C supplied with an inwardly projecting flange 1 having oppositely disposed openings 2, there being a a flared mouth 3 in the casing C, above the flange 1, as Fig. 3 will indicate.

A closure is provided, and is adapted to be received in the mouth 3 of the casing C, the closure being supported by the flange 1.

The closure includes a midrail R comprising a downwardly extended body 4 having transverse heads 5 at its ends, there being openings 6 in the heads. Intermediate its ends, the body 4 of the midrail R has a hole or seat 7, the utility of which will be made manifest hereinafter. At its ends, the body 4 of the midrail R is cut away as shown at 8, to form outwardly extended lugs 9, disposed below the heads 5. On its opposite sides, and adjacent to the heads 5, the body 4 of the midrail R is supplied with spaced, outwardly extended, integral brackets 10.

Lids L are provided and have reduced portions 11 that extend between the heads 5 of the midrail R. The reduced portions 11 of the lids L are supplied with openings 12, aligned axially with the openings 6 of the heads 5 of the midrail R. The openings 6 and 7 are adapted to receive hinge pins 14 or any other equivalent elements, which may or may not be removable, as occasion may demand. In their outer edges, the lids L are supplied with pick holes 15, facilitating the opening of the lids, and at their outer edges, the lids have downwardly-extended shoulders 16.

In practical operation, the body 4 of the midrail R is placed on top of the flange 1 of the casing C. A bar or the like, not shown, is stuck through the hole 7 in the body 4 of the midrail R, and by means of the bar, the entire closure may be rotated, one of the lids L being open, until the lugs 9 arrive at the openings 2 in the flange 1 of the casing C. Then the lugs 9 will pass downwardly through the openings 2, and a continued rotation of the closure will cause the lugs 9 to engage underneath the flange 1, the closure being held securely in place. When the lids L are closed, they rest on the bracket 10, and strain will be taken off the hinges represented by the hinge pins 14 or anything that might be used in the place of the hinge pins. The shoulders 16 of the lids L drop into the openings 2 in the flange 1 of the casing C and hold the closure against turning until the lids are raised.

Many accidents have occurred owing to the blowing off of manhole closures, the manhole being left open. In the device forming the subject matter of this specification, the interlocking engagement between the closure and the casing C is such that the closure cannot be blown off, saving in the absence of a destructive force beyond the remedies afforded by engineering skill. When an explosion occurs, the lids L will open, thereby affording relief from excessive pressure and, under all ordinary circumstances, preventing a destruction of the manhole cover considered as a whole, and injuries to passers-by.

Having thus described the invention, what is claimed is:

1. A manhole cover comprising a casing having an inwardly projecting flange provided with openings, a closure comprising a midrail including a body and transverse heads at the ends of the body, the body being provided at its ends

with lugs located below the heads, lids having reduced portions received between the heads, pivot elements connecting the reduced portions of the lids with the heads, the lugs being insertible through the openings, and the closure being rotatable to engage the lugs beneath the flange.

2. A manhole cover comprising a casing having an inwardly projecting flange provided with openings, a closure comprising a midrail provided at its ends with lugs, lids disposed on opposite sides of the midrail, hinges connecting the lids with the midrail, the midrail having oppositely projecting brackets on which the lids rest, when the lids are closed, to take the strain off the hinges, the lugs being insertible through the openings, and the closure being rotatable to engage the lugs beneath the flange.

3. A manhole closure comprising a midrail including a body and transverse heads at the ends of the body, the body being provided at its ends with lugs located below the heads, the lids having reduced portions received between the heads, and pivot elements connecting the reduced portions of the lids with the heads, the midrail being supplied with oppositely projecting brackets on which the lids rest, when the lids are closed, to take the strain off the hinges, the closure being rotatable to engage the lugs with a manhole casing, and the midrail being provided with a seat, located below the lids, and accessible, when one of the lids is opened, to receive a tool for rotating the closure.

4. A manhole cover comprising a casing having an inwardly projecting flange provided with openings, a closure comprising a midrail provided at its ends with lugs, lids hinged to opposite sides of the midrail, the lugs being insertible through the openings, the closure being rotatable to engage the lugs beneath the flange, and the lids having shoulders engaged in the said openings, when the lids are closed, to hold the closure against rotation.

MARTIN SWENSEN.
FRANK PATTERSON.