

No. 656,249.

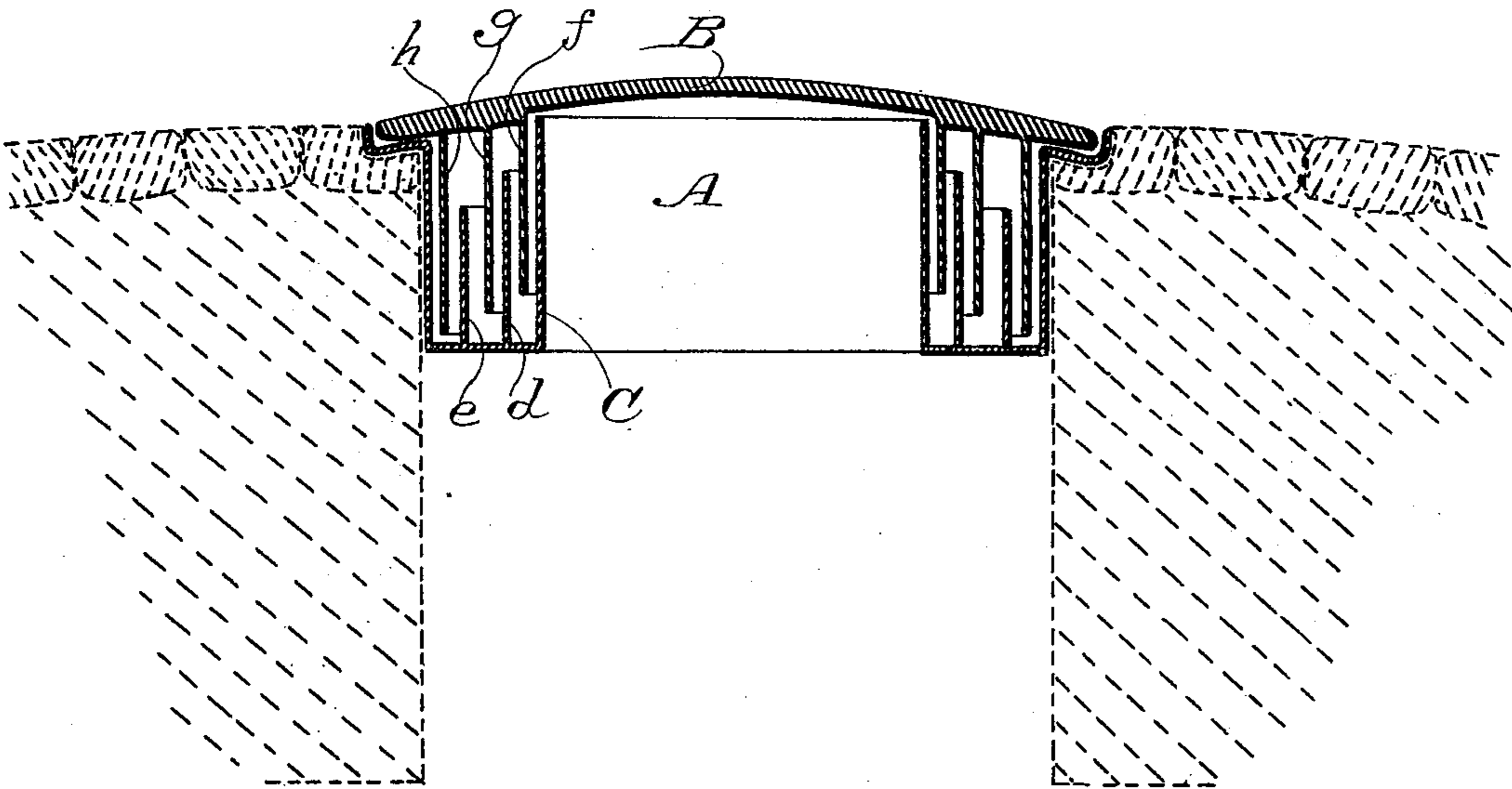
Patented Aug. 21, 1900.

R. HERMAN.

DEVICE FOR EXCLUDING WATER FROM MANHOLES.

(Application filed Jan. 17, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

RUDOLPH HERMAN, OF SAN FRANCISCO, CALIFORNIA.

DEVICE FOR EXCLUDING WATER FROM MANHOLES.

SPECIFICATION forming part of Letters Patent No. 656,249, dated August 21, 1900.

Application filed January 17, 1900. Serial No. 1,799. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH HERMAN, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Devices for Excluding Water from Manholes; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention relates to an improvement in that class of joints for manhole-covers in which vertical flanges on the under side of the cover enter channels in the top of the pit or excavation around the manhole-opening in order to form a seal that will prevent the entrance of surface water into the pit or excavation through the joint around the cover. Heretofore only two flanges have been used for this purpose, the outer one of which was shallow and the inner one considerably deeper, and the flanges that projected down into these channels were proportionately long. The pit or manhole-opening was also on a level with the top of the outer flanges. This construction, however, is not reliable, as water under pressure over the manhole-opening is liable to flow over the mouth of the opening into the pit or excavation.

My improvement consists in extending the mouth of the pit or opening slightly higher than the tops of the surrounding partitions or walls and interposing three chambers of equal depth around it in combination with a cover that has three depending flanges adapted to enter and extend down into the three partitions around the opening, all as herein- after more fully described.

Referring to the accompanying drawing, the figure is a transverse section of a manhole-opening, showing the channels with manhole-cover and flanges in place.

Let A represent the opening that leads from the surface of the ground down into a pit or excavation, and B the cover for said opening. This cover is made considerably larger than the opening, so that its outer edge rests at a distance all around the edge of the opening. This cover is usually made concave on its under side, so that the wall or partition C, which

surrounds the opening, may extend slightly higher than the surface on which the outer edge of the cover rests.

Surrounding the opening A, I construct a wide channel, in which I place two or more vertical partitions *d e*. These partitions project upward from the bottom of the channel and divide it into three narrow concentric channels surrounding the mouth of the opening. The top of partition *d*, which is next to the wall of the opening, is lower than the top of the opening, and the outer partition *e* is lower than the partition *d*. The cover B is made large enough to extend over these surrounding channels and have its outer edge rest upon a bearing around the outer wall of the channel.

To the under side of the cover B, I secure or otherwise provide three vertical concentric flanges *f g h* in the proper position and relation to extend down and enter into the three concentric channels surrounding the manhole. These flanges do not extend to the bottom of the channels; but they alternate with the vertical partitions and form interlocking channels that act as a brake to external water-pressure. The cover is readily removable at any time to expose the mouth of the opening and can easily be replaced. By this construction water can be kept out of excavations regardless of the water-pressure or volume of water resting upon the surface, as the interlocking channels through which the water must pass after entering the joint around the outer edge of the cover will counteract the pressure and prevent the water from rising around the manhole wall or partition higher than the point where it enters under the outer edge of the cover, and as the top of the opening is slightly higher than this point the water can never rise high enough to enter the opening.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A sealing-joint for manhole-covers consisting of a wall surrounding the manhole-opening; a channel surrounding the wall of the opening containing one or more vertical partitions spaced apart, the wall surrounding the manhole-opening extending slightly higher than the outer wall of the channel,

and a cover for the manhole-opening adapted to extend over the projecting wall and rest at its outer edge upon the outer wall of the channel and provided with depending flanges, 5 which enter between the vertical partitions in the channel, substantially as described.

2. In the construction of manhole-openings, a wall around the central opening, which extends slightly higher than the surrounding 10 level, and one or more concentric channels surrounding the manhole-opening, in combination with a manhole-cover large enough to extend over the wall around the central opening and rest on an outer level, which is 15 lower than the wall around the central opening, said manhole-cover having depending flanges adapted to enter and extend into the concentric channels surrounding the wall around the central opening, substantially as 20 described.

3. In the construction of seal-joints for manhole-openings, a central wall surround-

ing the manhole-opening, the top of which extends slightly higher than the level on which the outer edge of the manhole-cover rests; two 25 or more concentric channels surrounding the manhole-opening, the partition of the inner channel being lower than the wall of the manhole-opening, and the partition of the outer channel being lower than the partition near- 30 est the manhole; a cover for the manhole constructed on its under side to receive the extended top of the wall surrounding the manhole-opening, and depending flanges on the 35 under side of the cover entering and extending down into the concentric channels around the manhole-opening, substantially as described.

In witness whereof I have hereunto set my hand this 4th day of January, A. D. 1900. 40
RUDOLPH HERMAN.

Witnesses:

CHAS. J. ARMBRUSTER,
D. B. RICHARDS.