

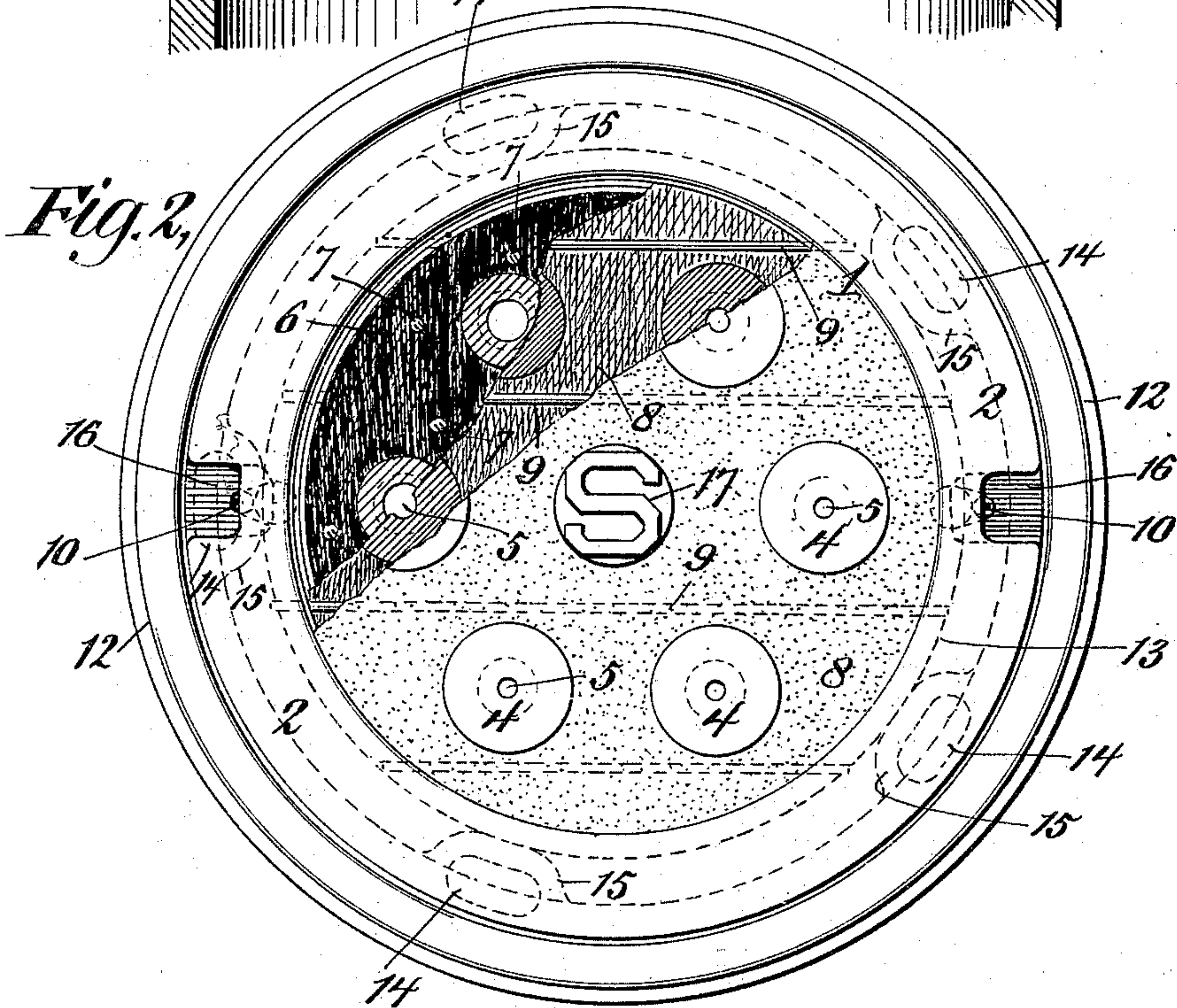
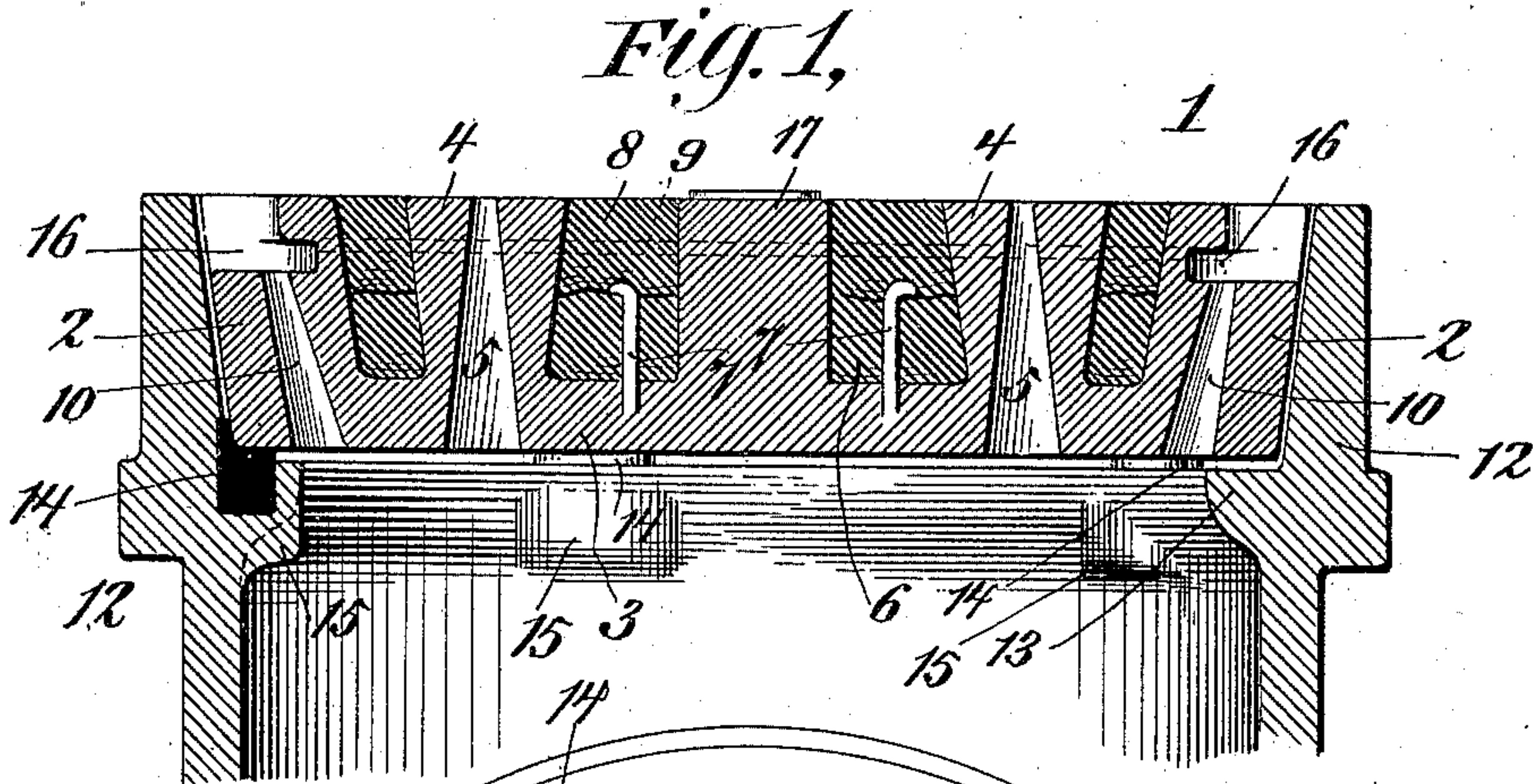
No. 611,640.

Patented Oct. 4, 1898.

E. MAHER.  
MANHOLE HEAD AND COVER.

(Application filed Dec. 6, 1897.)

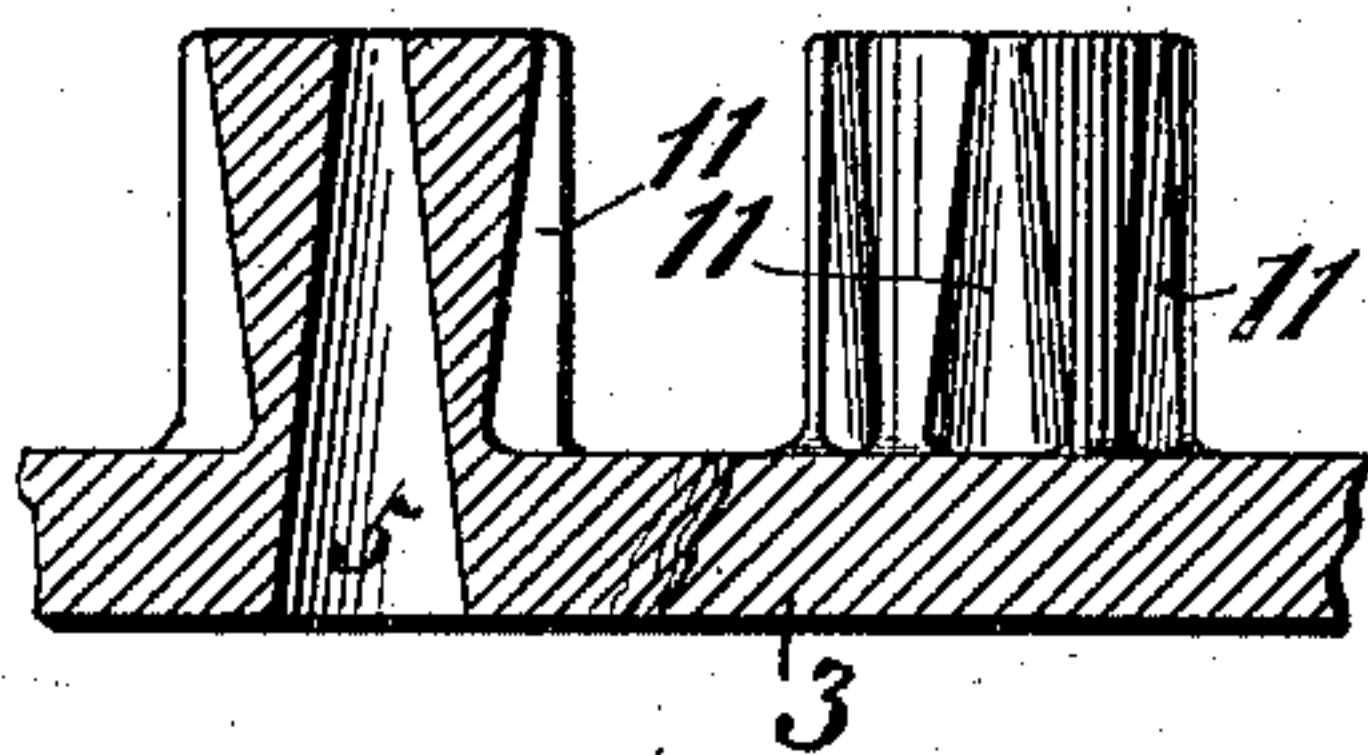
(No Model.)



*Fig. 3,*

WITNESSES:

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BY

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# UNITED STATES PATENT OFFICE.

EDWARD MAHER, OF NEWARK, NEW JERSEY.

## MANHOLE HEAD AND COVER.

SPECIFICATION forming part of Letters Patent No. 611,640, dated October 4, 1898.

Application filed December 6, 1897. Serial No. 660,843. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD MAHER, of Newark, in the county of Essex, State of New Jersey, have invented a new and useful Improvement in Manhole Heads and Covers, of which the following is a specification.

The present invention relates to manhole heads and covers for sewer or water pipes, electrical conduits, and the like.

Especially the invention relates to manhole heads and covers which are designed to be non-sonorous, and more particularly those to be used with an artificial pavement, such as concrete or asphalt, although the use of the heads and covers herein described is not limited to such artificial pavements.

The main object of the invention is to construct a manhole-cover which is provided with means whereby it is rendered non-sonorous when in position and also is provided with a comparatively elastic seat in the manhole-head. Besides these features are others which will be more particularly referred to hereinafter.

In the drawings I have illustrated a construction embodying my invention, in which—

Figure 1 is a central vertical section. Fig. 2 is a plan view, partly broken away, on two different horizontal planes. Fig. 3 is a detail view, partly in central vertical section and partly in side elevation, of the ventilating-tubes.

Like numerals of reference refer to like parts throughout the several views of the drawings.

Referring to the drawings in detail, 1 designates the cover, which consists, essentially, of the side wall or flange 2 and the bottom plate 3. Projecting upwardly from the bottom plate is a series of tubes 4, which are provided with apertures 5, gradually flaring from the upper outlet to the lower or underneath surface of the cover. The purpose of these apertures is to properly ventilate the sewer or water pipe or electrical conduit in connection with which the cover is used, and the object of tapering the hole upwardly is to insure against their clogging up with dirt or foreign matter forced into the opening on the street-surface, such matter being shaken through by the agitation of the cover incident to street traffic. The outer surfaces of

the ventilating-tubes are made to taper from the top to the bottom, so as to assist in securing in position the non-sonorous filling material, such as concrete or asphalt, with which the cover is filled. There may be any number of these tubes; but, as shown in the drawings, I prefer to make six in a manhole-cover of ordinary size. The space between the tubes and the side wall or flange of the cover is filled with the desired plastic non-sonorous material, such as concrete or asphalt, which is laid in position in two separate layers, of which 6 designates the lower stratum or layer. This lower stratum is secured in position and prevented from rising and being displaced under the varying conditions of temperature and usage by the pins 7, which project up from the bottom plate 3, assisted by the tapering side walls of the tubes 4.

In constructing a cover according to my invention the pins 7 are left projecting upwardly when the shell of the cover is cast, and the asphalt or other suitable material is filled into a point just below the tops of the pins, and the tops are then bent over the upper surface of the lower stratum, as shown in the drawings. After the lower stratum is set the upper stratum 8 is placed in position, where it is held by the rods 9, extending across the upper portion of the cover.

At diametrically opposite points the cover is provided with right-angled recesses 9, designed to receive a bar inserted therein for the purpose of lifting the cover. Communicating with the lower portion of these recesses is a downwardly-flaring opening 10, similar to those passing through the tube 4, this opening fulfilling the same function as those in the ventilating-tubes—namely, the ventilation of the conduit and the discharge of the dirt and water, which would otherwise accumulate in the recesses.

Instead of having plain tapering sides, as shown in Figs. 1 and 2, the tubes 4 may have downwardly-flaring grooves 11, as shown in Fig. 3, this construction serving as an additional means of keeping the asphalt or concrete filling in position.

12 designates the walls of the manhole-head, preferably made of metal. A rabbet or ledge 13 is provided on the inner surface of the manhole-head, upon which rabbet the



weight of the cover is sustained, said cover resting upon and impinging against a number of cushioning-pieces 14, which project slightly above the surface of the rabbet 13 and out from the side walls of the manhole-head and form a seat for said cover. These cushioning-pieces may be of any comparatively soft non-sonorous substance—such as Babbitt metal, lead, wood, rubber, or the like—and are designed to afford a comparatively soft yielding seat for the cover, taking up the strain and jar and absorbing the sound consequent upon the passage of a vehicle over the cover or other uses to which the cover is subjected by the street traffic. The cushioning-pieces are fitted in recesses 15, formed in the rabbet or ledge and the side walls of the manhole-head, the rabbet being strengthened at these points by means of a boss or hub 16, cast in the metal. Of course it is immaterial what is the form of the recesses in which the cushioning-pieces rest, as likewise the shape of such cushioning-piece, so long as there is a seat between the manhole cover and head of non-sonorous material, whether such material is made in a continuous piece or consists of a number of separate pieces.

In the center of the manhole-cover is shown a post 17, bearing the letter "S." This is a usual construction, the "S" designating that the cover is to be used in connection with a sewer-manhole.

It will be seen that by means of my invention I obtain a manhole-cover which is non-sonorous in itself and also when placed in position in its seat in the manhole; also, it always insures a thorough ventilation of the conduit in connection with which it is used.

What I claim as new is—

1. In a street-service manhole, the combination with a manhole-head, of a cover loosely fitting therein and having its upper surface flush with the street-surface, said cover being kept in position in the manhole-head by its own weight, and a supporting-seat of non-sonorous material between the cover and the manhole-head upon which seat alone the cover rests, substantially as specified.

2. The combination with a manhole-head, provided with a rabbet or ledge on its interior surface, a cover, and a seat of non-sonorous material projecting out from the side wall of the head and the rabbet or ledge, upon which seat the cover rests, substantially as specified.

3. The combination with a manhole-head provided with a rabbet or ledge on its interior surface and having one or more recesses formed in said rabbet and the side wall of the head, of a number of cushioning-pieces of

non-sonorous material corresponding to the number of recesses formed in the rabbet, said cushioning-pieces being seated in said recesses and projecting out from the rabbet or ledge and the side wall of the head, and a cover resting upon said cushioning-pieces, substantially as specified.

4. A manhole-head provided with a rabbet or ledge on its interior surface, one or more recesses formed in said rabbet, bosses or hubs formed on the rabbet at the points where the recesses occur, and a number of cushioning-pieces corresponding to the number of recesses seated in said recesses, substantially as specified.

5. A manhole-cover provided with one or more ventilating-tubes, the outsides of said tubes tapering inwardly from the top to the bottom and a filling of non-sonorous material in the space between the tubes and side of the cover, substantially as specified.

6. A hollow manhole-cover provided with one or more ventilating-tubes, the outsides of said tubes tapering inwardly from the top to the bottom, downwardly-flaring apertures passing through said tubes, and a filling of non-sonorous material in the spaces between the tubes and the side of the cover, substantially as specified.

7. A hollow manhole-cover provided with one or more ventilating-tubes, the sides of said tubes tapering from the top to the bottom, and a filling of non-sonorous material consisting of two strata, pins with bent-over heads for securing the lower stratum and horizontal rods extending across the upper portion of the cover for securing the upper stratum, substantially as specified.

8. A hollow manhole-cover provided with one or more ventilating-tubes, a filling of non-sonorous material between the tubes and the side wall of the cover, means for holding the non-sonorous filling in position, and a right-angled recess provided with a downwardly-flaring aperture, substantially as specified.

9. A hollow manhole-cover provided with one or more ventilating-tubes having downwardly-flaring apertures, downwardly-flaring grooves formed in the outer surface of said tubes and a filling of non-sonorous material between the tubes and the side wall of the cover, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD MAHER.

Witnesses:

SEABURY C. MASTICK,  
EMMA G. PRATT.