

April 27, 1926.

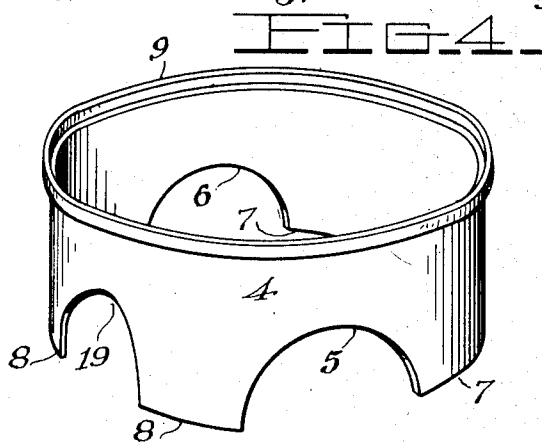
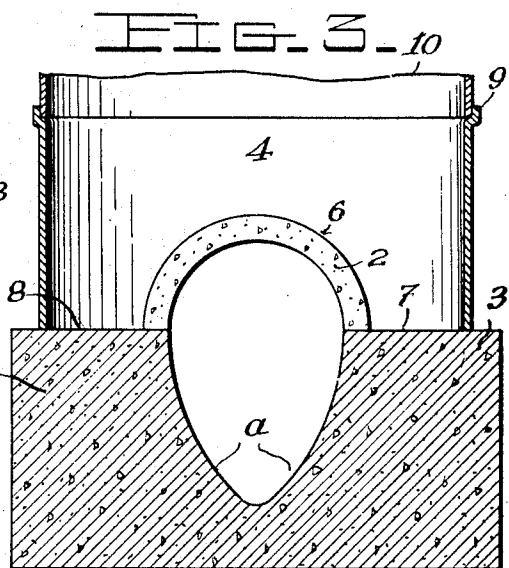
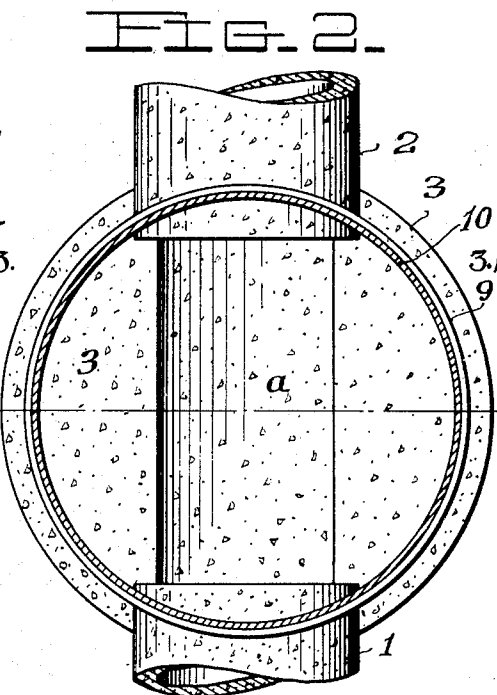
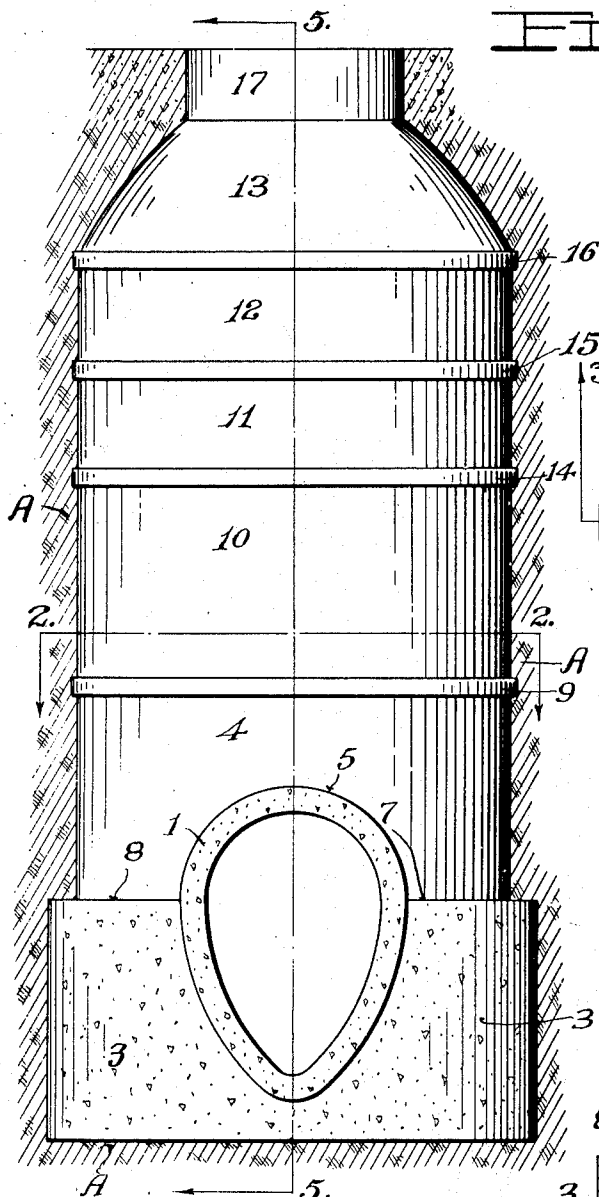
1,582,191

E. S. SNOOKE

MANHOLE, SEWER WELL, AND CATCH BASIN STRUCTURE

Filed Sept. 4, 1925

2 Sheets-Sheet 1



Inventor
E. S. Snooke

by *[Signature]*

Attorney

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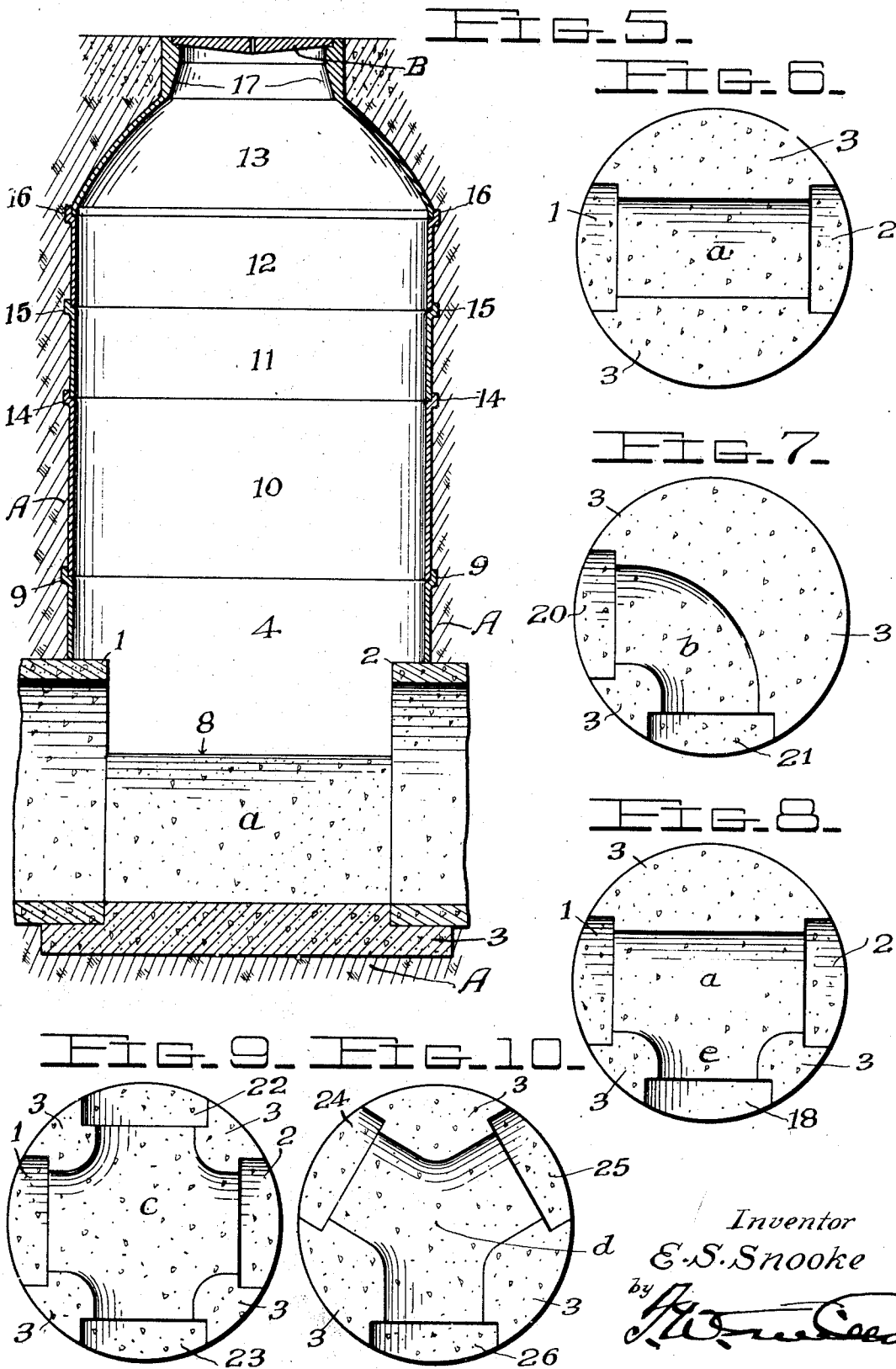
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE.

ELEAZER S. SNOOKE, OF BRIDGEPORT, CONNECTICUT.

MANHOLE, SEWER-WELL, AND CATCH-BASIN STRUCTURE.

Application filed September 4, 1925. Serial No. 54,434.

To all whom it may concern:

Be it known that I, ELEAZER S. SNOOKE, a citizen of the United States, residing at the city of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Manhole, Sewer-Well, and Catch-Basin Structures; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the construction of man holes for sewers, and has for its objects the elimination of the usual brick chamber formation, the provision of a sectional metallic structure which conformably embraces the sewer pipes and rests upon a concrete base, the adaptation of said structure to different conditions merely by a change in the formation of the bottom section and the saving of large amounts of money to municipalities.

In the accompanying drawings which are to be read as a part of this application:

Figure 1 is a sectional elevation showing the improvement adapted to a straightaway sewer construction—

Figure 2 a section at the line 2—2 of Figure 1—

Figure 3 a section at the line 3—3 of Figure 2—

Figure 4 is a detail perspective of the bottom section such as is employed in the construction shown at Figure 1, an additional concave portion being formed in this bottom section to accommodate the construction shown at Figure 8—

Figure 5 is a section at the line 5—5 of Figure 1—

Figure 6 is a plan view of the construction shown at Figure 1 with the metallic casing sections removed—

Figure 7 is a view similar to Figure 6 but showing a slightly different form of sewer construction—

Figure 8 is a view similar to Figure 6 but showing a construction in which one sewer intersects another—

Figure 9 is a view similar to Figure 3 but showing a construction in which one sewer completely crosses another, and

Figure 10 is a view similar to Figure 8 showing a form of sewer construction in which the ends of the sewer pipes are disposed at angles to each other.

Similar numerals of reference denote like parts in the several figures of the drawing.

Referring to Figures 1, 2, 3, 5, and 6, this invention is shown adapted for one of the simplest forms of sewer construction, in which a sewer line is broken at suitable intervals and man holes provided for the purpose of cleaning the sewer by the usual drag trawl means, A denoting the sewer trench and 1, 2, the end pipes of the sewer separated by a space, usually about four feet, so that a workman may have room for manipulation of the cleaning devices.

3 is a concrete formation at the bottom of the sewer trench which formation extends beneath the pipes 1, 2, and has a concave inner face *a* which serves as a continuation of the interiors of the pipes, so that ordinarily the flow through the sewer will be continuous and uninterrupted, and this formation provides a base or foundation which extends upwardly to a plane about midway of the height of the pipes.

The improved man hole structure is of metal and formed in sections that are cast or made of sheet metal, shaped and united or welded, and merely placed on top of each other, the bottom section conformably embracing the sewer pipes and resting on the foundation 3, while the top section is suitably shaped and provided with a cover, all of which will now be more particularly described.

4 is the bottom section whose lower edge has concave portions 5, 6, which conform to the external surfaces of the pipes 1 and 2, while the intervening edges 7, 8, seat directly upon the foundation 3, so that it will be clear that the broken sewer is completely housed by the foundation and this bottom section 4.

At the upper edge of this section 4 is an offset lip 9 so that the next section 10 may rest upon the section 4 and be retained in position by this lip, and succeeding sections 11, 12, and 13, are placed in position in like manner and are retained in position by offset lips 14, 15, and 16, formed respectively on the sections 10, 11, and 12.

The top section 13 has a conventional shape, being constricted at the upper end into a neck formation 17 within which is located the usual man hole cover B.

In the adaptation of the invention above described, the sewer pipes are in line, but when one sewer line intersects another, as

is illustrated at Figure 8, there is no change in the foundation except that it is built beneath the end pipe 18 of the intersecting sewer and the bottom section 4 has formed in its lower edge another concave portion 19, as shown at Figure 4, in addition to the concave portions 5, 6, so that this section may conformably embrace all three of the sewer pipe terminals and rest upon the foundation, the latter having in its upper face a concave portion *c* leading from the pipe 18 into the concave portion *a*.

In some instances a sewer turns the corner which is a very good place for the location of a man hole, and therefore at Figure 7 I have illustrated spaced pipes 20, 21, the foundation being the same as above and having formed therein a concave inner face *b* which communicates respectively with said pipes, and the lower section of the foundation is formed with concave portions at suitable localities just as above described, which portions snugly conform to said pipes so that the bottom edge of the lower section will fit upon such foundation.

Sometimes a sewer will completely cross another sewer, as is shown at Figure 9, in which instances the concrete foundation will be built beneath the spaced pipes 1, 2, and 22, 23, a general concaved inner face *e* being formed in the foundation and communicating with all four pipe ends, after the manner above described, and the bottom section 4 will have concavities formed in its lower edge to conformably embrace all four pipes and the intervening edge portions of this section will rest upon the foundation.

Should the pipes of three separate sewers come together at angles to each other as shown at Figure 10, the foundation would be built beneath these pipes 24, 25, and 26, and have a generally concaved upper face *d* communicating with all three pipes in the manner above described, and the bottom section 4 would have concavities formed in its lower edge to conformably embrace these pipes and the intervening bottom edges of said section will rest upon the foundation.

It will thus be seen that there is no material difference whatever in the adaptation of the improvement to various conditions in sewer construction.

In all municipalities sewers are laid at a stated depth so that the sewer pipes heretofore mentioned are at substantially the same level, but should there be any variation in the depth at which the pipes are laid this will make no difference with the adaptation of the present improvement since it would

merely mean that the foundation would be built somewhat higher for one or more of the pipes while the casting of the bottom section would be changed to correspond.

The advantages of this improvement are many, chief among which is the great saving to municipalities, and the lasting qualities of the sectional metallic casing as compared with the usual brick formation in the construction of man holes. Also, these sections are removable, either for the purpose of renewing one of them or for installing a new bottom section, or for other obvious purposes.

The construction illustrated herein comprises five sections, but any desired number of sections may be employed, and, in order to build up a sectional man hole construction so that it will conform to the depth of the sewer with the top section flush with the street surface, the sections are of different heights and it will always be possible to employ such sections as will be suitable.

Also, these sections being of metal, any desired additional concave portions may be cut out from the bottom section, or from intermediate sections.

In all instances the top section is preferably the same and is provided with the usual cover B.

This invention is applicable to the construction of the sewer wells usually located on the corners of streets to catch surface water, it being merely necessary to mount the bottom section 4 on a foundation, and to lead the usual overflow pipe into one of the sections having a concavity cast therein to accommodate and conformably embrace said pipe.

What is claimed is:—

A man hole structure for sewers, composed of spaced sewer conduits, a foundation in the sewer trench enclosing the inner ends of the conduits and having its upper portion formed with depressions to receive said conduits, which depressions are of such depth to cause the upper portion of the foundation to be disposed substantially midway of the heights of the conduits, said upper portion of the foundation having trough-like portions which form continuations of the conduits, and a man hole casing seated at its lower end on the foundation and being formed with portions receiving the parts of the conduits which project above the said upper portion of the foundation.

In testimony whereof I affix my signature hereto.

ELEAZER S. SNOOKE.