

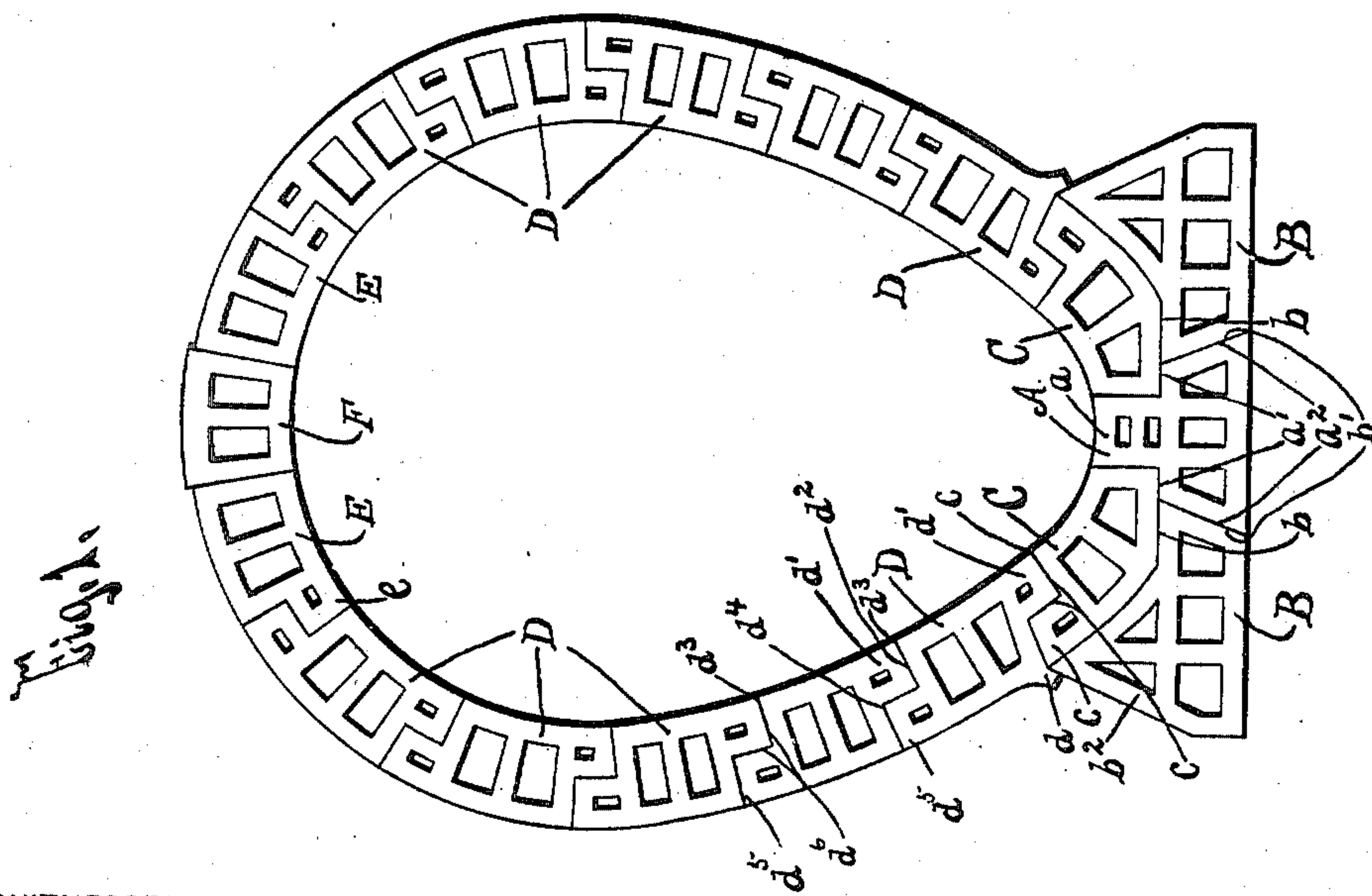
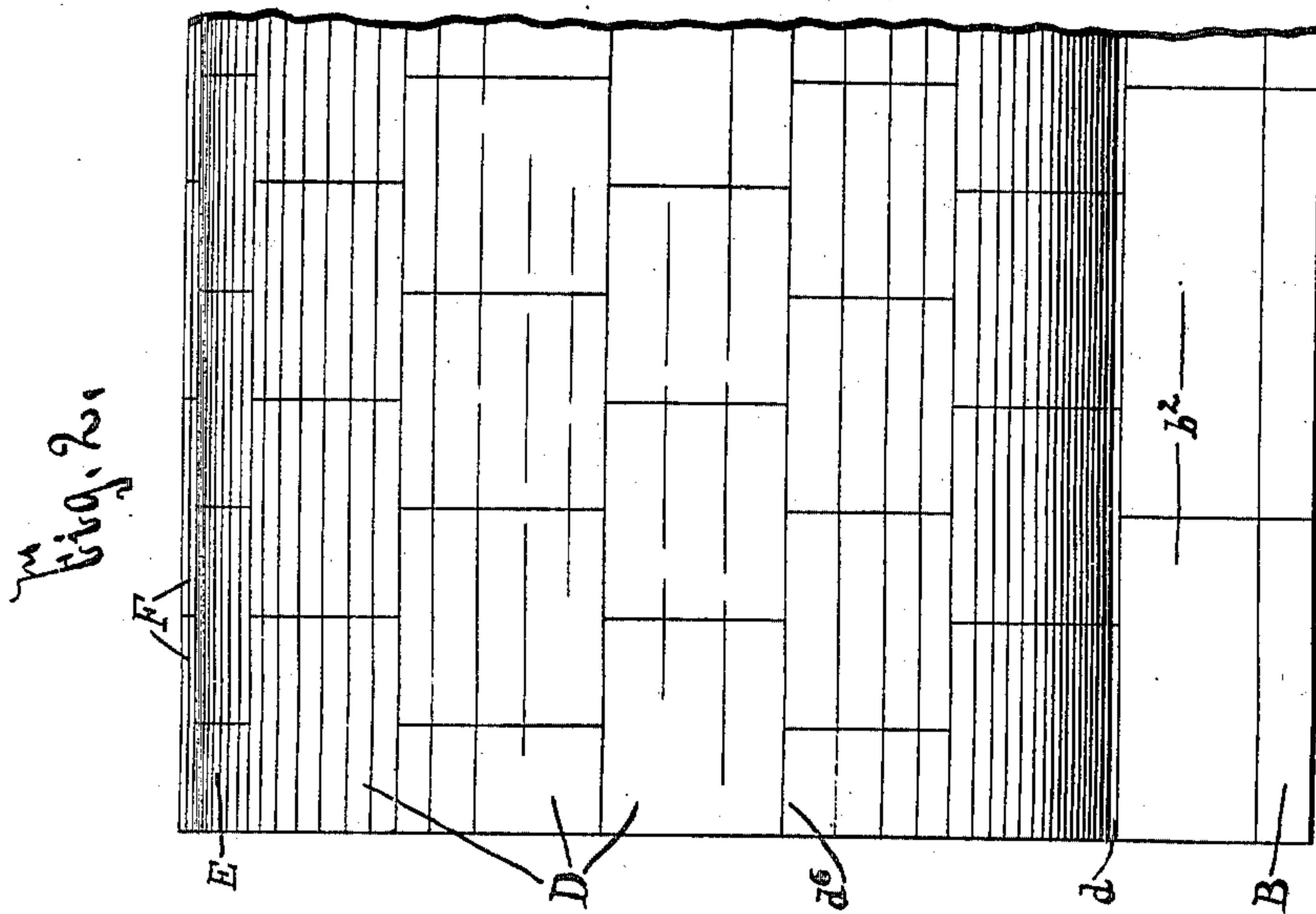
No. 661,286.

C. E. COLTON.
SEWER.

Patented Nov. 6, 1900.

(Application filed May 7, 1900.)

(No Model.)



WITNESSES:

M. D. Lewis,
S. Davis

INVENTOR

Charles E. Colton.

BY

Hey & Parsons,
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES E. COLTON, OF SYRACUSE, NEW YORK.

SEWER.

SPECIFICATION forming part of Letters Patent No. 661,286, dated November 6, 1900.

Application filed May 7, 1900. Serial No. 15,695. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. COLTON, of Syracuse, in the county of Onondaga, in the State of New York, have invented certain new and useful Improvements in Sewers, of which the following is a specification.

My invention has for its object the production of a sewer which is particularly strong, is readily and cheaply manufactured and laid, and is so constructed that liability of the spreading of its base, the outward movement or spreading of its side sections adjacent to said base, and the passage of water through said side sections is reduced to a minimum; and said invention consists in the combinations and constructions hereinafter set forth.

Figures 1 and 2 are, respectively, end and side elevations of a portion of a sewer embodying my invention.

My improved sewer consists, essentially, of sections A B C D E F, constructed, preferably, of vitrified hollow tile. The sections A B and the lower parts of the sections C form the base of the sewer, said sections A B being usually provided with flattened faces of considerable width for distributing the weight of the sewer over a comparatively large area. The sections A form intermediate base-sections and are here shown as each provided with a longitudinal upper portion or extension a of less width than its lower portion, shoulders a' extending laterally from opposite sides of the base of the portion or extension a , and side surfaces a^2 diverging downwardly from the outer edges of the shoulders a' . Said sections B form side base-sections, are arranged on opposite sides of the sections A, and are here illustrated as having the inner portions of their upper faces b disposed substantially coincident with the shoulders a' and as formed with downwardly-diverging side surfaces b' , engaged with the surfaces a^2 . The outer portions of the upper faces of the sections B are generally provided with upward extensions b^2 , having upwardly-diverging inner faces and upwardly-converging outer faces. The sections C diverge upwardly in opposite directions from the intermediate base-sections A, are supported partly upon the shoulders a' of the sections A and partly upon the inner portions of the upper faces b of the sections B between the extensions b^2 of the sections B and at opposite

sides of the portions or extensions a of the sections A, and are shown in the accompanying drawings as having their inner faces engaged with opposite sides of said portions or extensions a and their outer faces engaged with the inner faces of the extensions b^2 of the sections B. The arrangement of the sections C between the extensions b^2 obviously prevents either inward or outward movement of said sections C.

In the preferable construction of my invention the upper parts of the sections C just described and the sections D E F form the opposite sides and the top of the sewer. Said sections D E rise one above the other, forming opposite sides of the base of the sewer, the lowermost sections D being supported partly upon the sections B and partly upon the sections C and being provided with depending extensions d , engaged with outer faces of the extensions b^2 . The inner portions of the lower faces of the sections D E are formed with depending arms d' e , said arms d' of a number of the sections D having their lower faces d^2 inclined downwardly from the inner edges d^3 thereof and the upper edges d^4 of their outer faces arranged above said inner edges. The outer portions of the upper faces of the sections C D are provided with upwardly-projecting arms c d^5 , having their inner faces engaged by the arms d' e , and the inner portions of said upper faces are formed with cut-outs c' d^6 , which receive the arms d' e and form said outer arms c d^5 . The engagement of the depending extensions d of the lowermost side sections D with the upward extensions b^2 of the side base-sections B prevents spreading of the base-sections, and the arrangement and construction of the arms d' c d^5 and the cut-outs c' d^6 as described prevent outward movement or spreading of the lower ends of the side sections D. Consequently when the sewer is completed the base and side sections are not liable to move from their predetermined positions. The sections are readily laid in position, even by unskilled workmen, without the necessity of supporting-frames, and the sewer is rendered more strong and durable than would otherwise be the case. Moreover, the passage of water through the walls of the sewer is reduced to a minimum by so form-

ing a number of the arms d' that their lower faces d^2 incline downwardly from their edges d^3 and that the upper edges d^4 of their outer faces are above said edges d^3 . It is obvious, however, that said arms d' may be otherwise constructed, if desired. The upper faces of the sections E and the opposite sides of the sections F converge downwardly, said sections F forming a key for the sections E E.

The construction and operation of my sewer will now be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be obvious to those skilled in the art that more or less change may be made in its component parts without departing from the spirit of my invention.

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

1. In a sewer, the combination of a base, opposite side sections rising from the base, and having the outer portions of their upper faces provided with upwardly-projecting arms, and additional opposite side sections resting on the former side sections and having the inner portions of their lower faces provided with depending arms engaging the inner faces of the former arms, substantially as and for the purpose described.

2. In a sewer, the combination of base-sections, and side sections, a plurality of the side sections engaging underlying sections for preventing outward movement of said side sections, and a plurality of the base-sections engaging overlying sections for preventing spreading of the base-sections, substantially as and for the purpose specified.

3. In a sewer, the combination of base-sections provided with upward extensions, additional sections engaging the upper faces of said base-sections and the inner faces of the extensions, and side sections engaging outer faces of the extensions for preventing spreading of the base-sections, said side sections also engaging the additional sections, substantially as and for the purpose set forth.

4. In a sewer, the combination of base-sections having the outer portions of their upper faces provided with upward extensions formed with upwardly-diverging inner faces and upwardly-converging outer faces, additional sections engaging the inner portions of the upper faces of the base-sections and the inner faces of said extensions, and side sections engaging the outer faces of the extensions and the contiguous end faces of said additional sections, substantially as and for the purpose described.

5. In a sewer, the combination of base-sections, opposite side sections rising from the base-sections and engaging outer faces of the base-sections for preventing spreading thereof, said side sections having the inner portions of their lower faces provided with depending arms engaging inner faces of the un-

derlying sections, substantially as and for the purpose described.

6. In a sewer, the combination of base-sections having the outer portions of their upper faces provided with upward extensions formed with upwardly-diverging inner faces and upwardly-converging outer faces, additional sections engaging the inner portions of the upper faces of the base-sections and the inner faces of said extensions, and side sections engaging the outer faces of the extensions and the contiguous end faces of said additional sections, said side sections having the inner portions of their lower faces provided with depending arms having their lower faces inclined downwardly from the inner edges thereof and the upper edges of their outer faces arranged above said inner edges, substantially as and for the purpose specified.

7. In a sewer, the combination of base-sections having the outer portions of their upper faces provided with upward extensions formed with upwardly-diverging inner faces and upwardly-converging outer faces, additional sections engaging the inner portions of the upper faces of the base-sections and the inner faces of said extensions, side sections engaging the outer faces of the extensions and the contiguous end faces of said additional sections, and additional side sections resting on the former side sections and having the inner portions of their lower faces provided with depending arms having their lower faces inclined downwardly from the inner edges thereof and the upper edges of their outer faces arranged above said inner edges, substantially as and for the purpose set forth.

8. In a sewer, the combination of a base composed of two side sections and an intermediate section; with additional sections forming the walls of the sewer, said side and intermediate base-sections being provided with means for preventing inward or outward movement of the additional sections.

9. In a sewer, the combination of an intermediate base-section and side base-sections; with the walls supported partly on the intermediate base-section and partly on the side base-sections, said walls having their lower ends prevented from outward movement by the underlying sections and being engaged with the side base-sections for preventing spreading of said side base-sections, substantially as and for the purpose described.

10. In a sewer, the combination of a base composed of two side sections having upward extensions and an intermediate section having an upward extension of less width than its lower portion; with additional sections diverging upwardly from opposite sides of the extension of the intermediate base-section and forming the walls of the sewer, said additional sections being supported partly on the side base-sections and partly on the intermediate base-section between the extensions of the side base-sections and at oppo-

site sides of the extension of the intermediate base-section, substantially as and for the purpose specified.

11. In a sewer, the combination of an intermediate base-section and side base-sections; with additional sections supported partly on the intermediate base-section and partly on the side base-sections, and side sections supported partly on the side base-sections and partly on said additional sections, said side sections having means for preventing spreading of the side base-sections and having their lower ends prevented from outward movement by the underlying sections, substantially as and for the purpose set forth.

12. In a sewer, the combination of an intermediate base-section, side base-sections provided with upward extensions, additional sections engaging the intermediate base-section and the upward extensions of the side base-sections, and side sections engaging the additional sections and outer faces of said extensions, substantially as and for the purpose described.

13. In a sewer, the combination of a base composed of two side sections having upward extensions and an intermediate section having an upward extension of less width than its lower portion; with additional sections diverging upwardly from opposite sides of the extension of the intermediate base-section and supported partly on the side base-sections and partly on the intermediate base-section between the extensions of the side base-sections and at opposite sides of the extension of the intermediate base-section, and side sections supported partly on the side base-sections and partly on said additional sections, said side sections having means for preventing spreading of the side base-sections and having their lower ends prevented from outward movement by the underlying sections, substantially as and for the purpose described.

14. In a sewer, the combination of an intermediate base-section having a reduced upper

portion and lateral shoulders, side base-sections having upward extensions rising above the lateral shoulders, additional sections engaging the lateral shoulders of the intermediate base-section and the inner faces of the upward extensions of the side base-sections, and side sections also engaging said extensions, substantially as and for the purpose specified.

15. In a sewer, the combination of an intermediate base-section having a reduced upper portion and lateral shoulders, side base-sections having the inner portions of their upper faces arranged substantially coincident with the lateral shoulders and the outer portions of their upper faces provided with upward extensions formed with upwardly-diverging inner faces and upwardly-converging outer faces, additional sections engaged with the lateral shoulders of the intermediate base-section and with the inner portions of the upper faces of the base-sections and the inner faces of said extensions, and side sections engaging the outer faces of the extensions and the contiguous end faces of said additional sections, substantially as and for the purpose set forth.

16. In a sewer, the combination of an intermediate base-section, side base-sections provided with upward extensions, additional sections engaging the intermediate base-section and the upward extensions of the side base-sections, and side sections engaging the additional sections, said additional sections being provided with means for preventing outward movement of the side sections substantially as and for the purpose described.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 24th day of April, 1900.

CHARLES E. COLTON.

Witnesses:

D. LAVINE,
S. DAVIS.