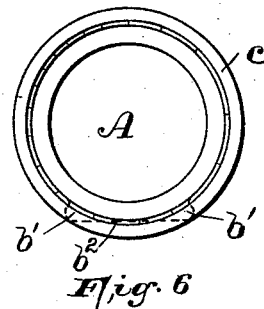
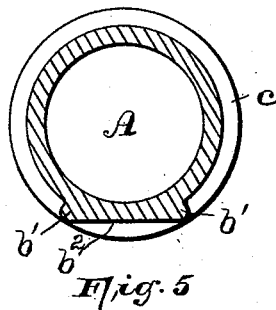
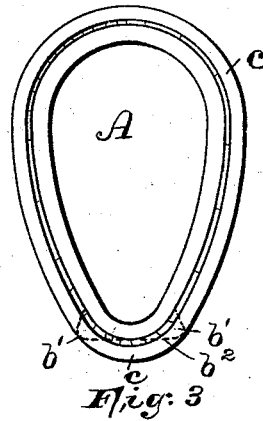
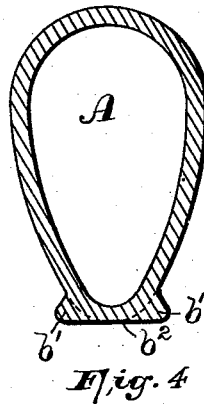
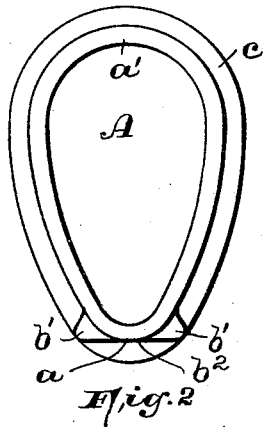
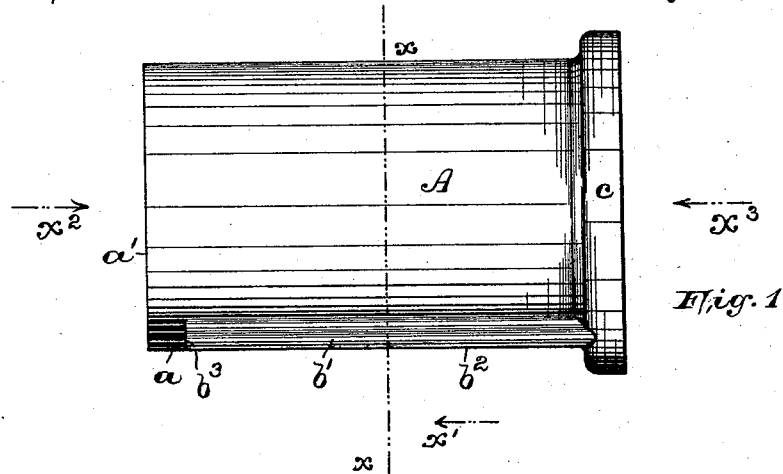


(No Model.)

H. E. OGDEN.  
DRAIN PIPE.

No. 455,926.

Patented July 14, 1891.



WITNESSES:

Wm. H. Campfield, Jr.  
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INVENTOR:

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BY Fred C. Fraentzel, ATT'Y.

# UNITED STATES PATENT OFFICE.

HENRY E. OGDEN, OF NEWARK, NEW JERSEY, ASSIGNOR TO W. L. & H. E. OGDEN, OF SAME PLACE.

## DRAIN-PIPE.

SPECIFICATION forming part of Letters Patent No. 455,926, dated July 14, 1891.

Application filed April 20, 1891. Serial No. 389,548. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. OGDEN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Drain-Pipes; and I do hereby 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in drain-pipes; and it consists in the features of construction illustrated in the several figures of the accompanying drawings, which features are fully set forth in the following specification and more fully pointed out in the claims appended thereto.

The purpose of the invention is to provide a drain-pipe which is of simple and strong construction, each drain-pipe section being provided with an attached collar and a flat bottom or base, whereby the sections comprising the line of drain-pipe can be more readily placed in position and secured together with comparatively little labor.

The invention is applicable more especially on that class of pipe-sections which are oval or egg-shaped in cross-section and which without my improvement are very difficult to set in position, owing to the narrow surface at the bottom of the pipe; but my invention is also applicable to pipe-sections which are circular in cross-section.

In the accompanying sheet of drawings, in which similar letters of reference are employed to indicate corresponding parts in each of the views, Figure 1 is a side elevation of one of my improved drain-pipe sections, which is of the oval or egg-shape type. Fig. 2 is an end view of the same, looking in the direction of arrow  $x^2$ . Fig. 3 is an end view of the pipe-section, looking in the direction of arrow  $x^3$ ; and Fig. 4 is a vertical section of the pipe-section taken on line  $x$  in Fig. 1 and looking in the direction of arrow  $x'$ . Fig. 5 is a vertical section of a pipe circular in cross-section, provided with the flat bottom or base;

and Fig. 6 is an end view of the collar end of a round or circular pipe.

Drain-pipes of this class to which my improvement appertains as heretofore made were either circular, oval, or egg-shape in cross-section, were provided with a flat bottom or base, which base is of the same or greater thickness than the collar for cementing the pipes together. By thus providing each section of pipe with a flat base which is of less thickness than the greatest depth of the collar  $c$ , I have reduced the thickness of the drain-pipe at this point to a minimum, whereby a pipe is the result which is of practically the same weight as drain-pipes now in general use which are not provided with a flat base, and therefore my improved pipe can be readily handled and placed in position by the workman and can be manufactured at less expense than the drain-pipes provided with flat bases as heretofore made.

By my improvement each section of pipe is provided with a flat bottom or base, whereby the workman can very quickly set the sections and cement them together without first propping them up, as heretofore. In the drawings is illustrated the means which I have devised to accomplish this result.

In said drawings, A indicates a drain-pipe section, preferably made of terra-cotta or vitrified clay, which may be oval or egg shaped in cross-section, as indicated in Figs. 2, 3, and 4, or it may be round or circular in cross-section, as indicated in Figs. 5 and 6. On a line with the lower edge  $a$  of the body of the pipe, projecting on opposite sides thereof and extending in the longitudinal direction of the pipe, I have formed said pipe with the outwardly-extending portions  $b' b'$ , which are formed integral with the pipe in the molding of the same, and which parts form a flat bottom or base  $b^2$  to the section of pipe.

From Fig. 1 it will be seen that each pipe-section A is provided with the usual attached collar  $c$  for the reception of the end of the next section of pipe, and said parts  $b' b'$ , forming the base  $b^2$ , extend longitudinally back on opposite sides of the lower edge  $a$  to near the other end of the section, terminating at  $b^2$  at a distance from the edge of the pipe-section

equal to the depth of the collar on the next section of pipe, so that the end *a'* of the pipe can be placed in said collar and the two sections of pipe securely cemented together.

- 5 The particular advantage gained by providing the pipes with a flat bottom is that a perfectly level trench can be dug for the pipes, digging away only a small hole or trench for the reception of the bottom of the collar *c*.  
10 Therefore in the oval or egg-shaped pipes as thus constructed there is no need of propping them up in order to prevent them from falling over, and the drain-pipe can be set in place in much less time and with less labor  
15 and less expense.

Having thus described my invention, what I claim is—

1. A drain-pipe section, of terra-cotta or vitrified clay or other suitable plastic material,  
20 provided with a collar, and a flat bottom or base extending longitudinally back from said collar and the lower portion of said collar projecting below said base, as and for the purposes set forth.  
25 2. A drain-pipe section, of terra-cotta or vitrified clay or other suitable plastic material, provided with a collar and parts *b' b'*, projecting on opposite sides of the lower edge and formed integral with the body of the pipe,  
30 said parts extending longitudinally back from

said collar, thereby forming a flat bottom or base, and the lower portion of said collar projecting below said base, as and for the purposes set forth.

3. The herein-described oval or egg-shape 35 drain-pipe section, consisting of the pipe portion A, with a collar *c* attached, and a flat bottom or base *b<sup>2</sup>* at its narrowest portion and the lower portion of said collar projecting below said flat base, substantially as and for the 40 purposes set forth.

4. The herein-described oval or egg-shape drain-pipe section, consisting of the pipe portion A, with a collar *c* attached, and oppositely-projecting portions *b' b'*, forming a flat 45 base *b<sup>2</sup>*, said portions extending longitudinally from said collar to near the end *a'* of the pipe and terminating at *b<sup>3</sup>* to permit the insertion of the pipe into the collar on the next section, and the lower portion of said collar 50 projecting below said base, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 17th day of April, 1891.

HENRY E. OGDEN.

Witnesses:

FREDK. C. FRAENTZEL,  
WM. H. CAMFIELD, Jr.