(No Model.)

H. H. COLBY.

CULVERT.

No. 426,112. Patented Apr. 22, 1890.

FIG. 1.

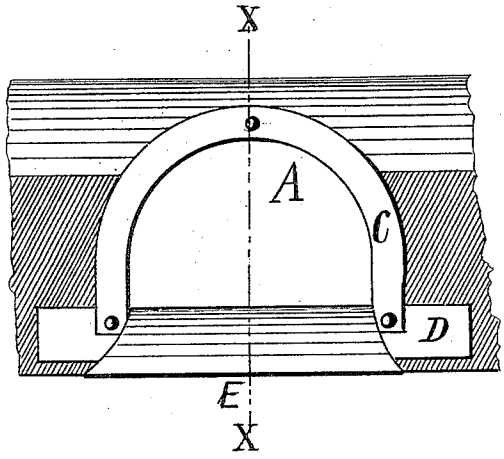


FIG. 2.

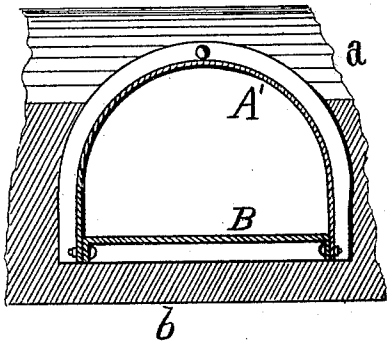
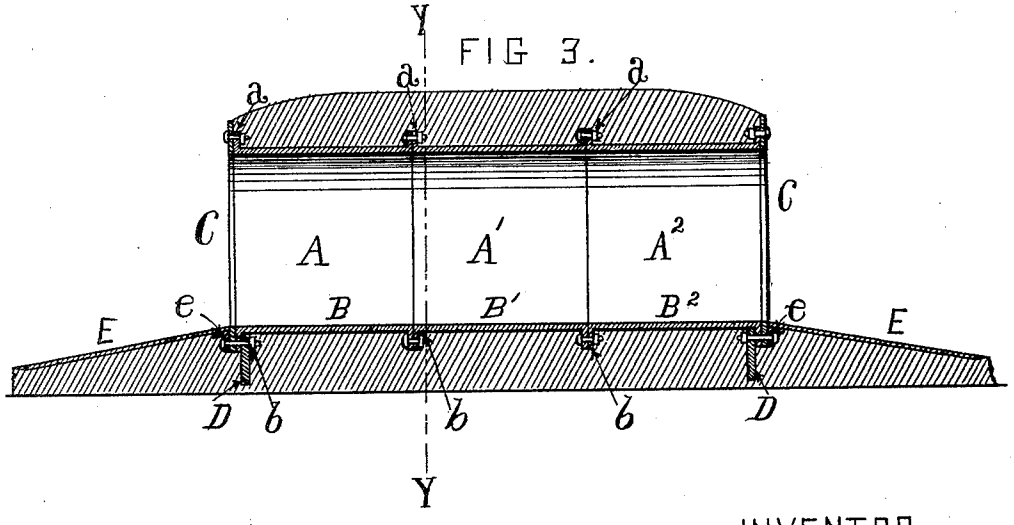


FIG. 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

HENRY H. COLBY, OF TALLULA, ILLINOIS.

CULVERT.

SPECIFICATION forming part of Letters Patent No. 426,112, dated April 22, 1890.

Application filed November 29, 1889. Serial No. 331,940. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. COLBY, a citizen of the United States, residing at Tallula, in the county of Menard and State of Illinois, have invented a new and useful Improvement in Culverts, of which the following is a specification.

The objects of my invention are to provide culverts of improved construction capable of withstanding heavy water-pressure; to provide means for checking the percolation of water through the earth immediately surrounding the culvert, thereby lessening the risk of washing out; also, to provide a culvert of iron, in sections, so constructed, braced, and strengthened that even if washed out by an unusual freshet the culvert may be easily reset. I attain these objects by the means shown in the accompanying drawings, in which—

Figure 1 is an end view of the culvert. Fig. 2 is a vertical transverse section on the line Y Y. Fig. 3 is a longitudinal section on the line X X of Fig. 1.

Similar letters in all the figures indicate the same parts.

The arched top of the culvert consists of a number of semi-cylindrical sections A A′ A^2, having upwardly-projecting flanges *a*. The bottom of the culvert consists of flat iron plates B B′ B^2, having downwardly-projecting flanges *b*. These flanges serve to hold the culvert in position and prevent lateral motion while the filling is being tamped around the sides and top of the culvert. In both the arch-sections and the bottom sections of the culvert the flanges of each section are integral with that section.

In the drawings I show only three sections. I do not, however, restrict myself to that number, since one or any other necessary number of sections may be used, according to the length of the culvert to be built.

At each end of the culvert is an arched plate C, bolted to the projecting flanges *a b*.

The several sections are fastened together by bolts through holes in the flanges.

Immediately behind *b*, at each end of the culvert, are bolted the sills D D, extending transversely to the culvert any suitable distance into the surrounding embankment. These sills serve to resist the endwise pressure of the water, and also to prevent the percolation of water under the culvert. The projecting flanges *a b* serve the same purpose.

Across the bottom of the arched plate C is bolted the angle-plate *e*, to which is secured the apron E. I prefer a wooden apron, though an apron of iron, concrete, or other suitable material may be used. The apron E guides the drift into the culvert and prevents the outpouring water from making holes at the lower end of the culvert. The aprons also prevent water from seeping under the culvert.

In setting the culvert an arched top section and a bottom section are bolted together, making one complete section. This complete section is lowered into position on a previously-prepared bed of clay. Another section is formed in the same manner, lowered into position and bolted to the first complete section, and so on, section after section being added until the desired length of culvert is made. The sills D, the arched plates C, and the angle-plates *e* are successively placed in position and bolted together. The interstices around the lower flanges are then carefully puddled with clay, and the top and sides of the arch are covered with a sufficient layer of tough clay well rammed. The earth is then filled in to grade, the aprons are attached, and the culvert is complete.

What I claim as new, and desire to secure by Letters Patent, is—

1. A flat bottom section for culverts, having downwardly-projecting flanges integral therewith, substantially as shown and described, and for the purpose stated.

2. In a culvert, the arched plate C, in combination with the arched top section having projecting integral flanges, and the flat bottom section having downwardly-projecting integral flanges, substantially as shown and described, and for the purpose stated.

3. The combination, in a culvert, of the flanged top section, the flanged bottom section, the arched plate, and the sill, substantially as shown and described, and for the purpose stated.

4. The combination, in a culvert, of the flanged top section, the flanged bottom section, the sill, the arched plate, and the angle-plate,

substantially as shown and described, and for the purpose stated.

5. In a culvert, the combination of the flanged top section, the flanged bottom section, the arched plate, the sill, the angle-plate, and the apron, substantially as shown and described, and for the purpose stated.

6. A culvert consisting of separable sections A B A′ B′ A^2 B^2, secured together by bolts passing through projecting flanges, and having at its ends arched plates C and C′, sills D and D′, angle-plates *e*, and aprons E, substantially as shown and described, and for the purpose stated.

HENRY H. COLBY.

Witnesses:
MART W. SPEULDA,
JAS. WALSH.