

(No Model.)

2 Sheets--Sheet 1.

W. S. PARKER.
CULVERT.

No. 546,245.

Patented Sept. 10, 1895.

FIG. 1.

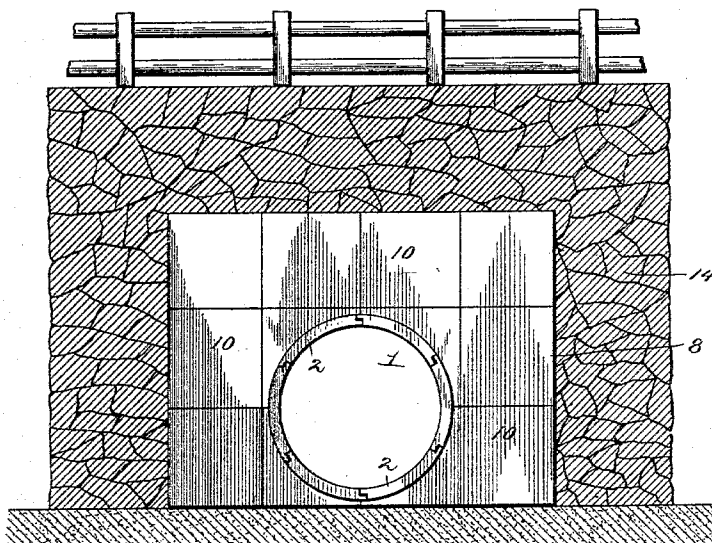


FIG. 2.

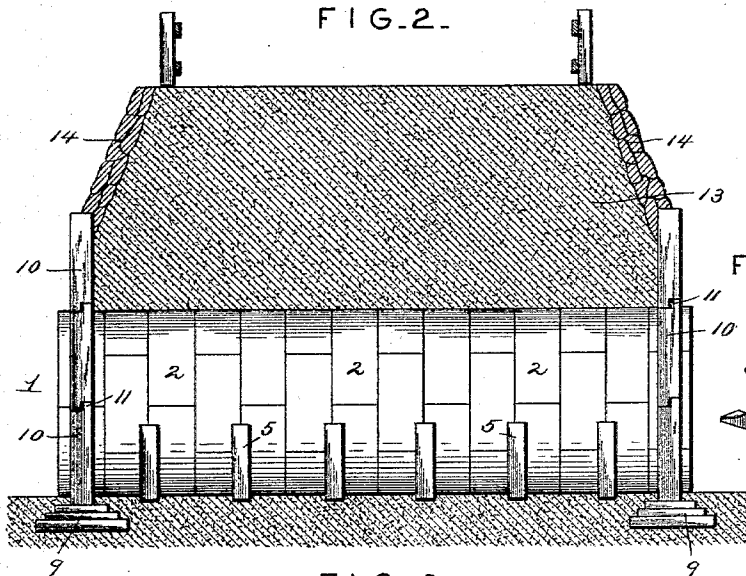
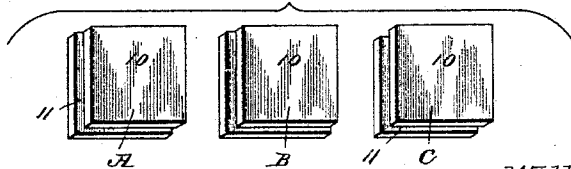


FIG. II.

FIG. 3.



Inventor.

William S. Parker

Witnesses

Harry L. Amer.

S. P. Whipple

By his Attorneys.

C. Snow & Co.

(No Model.)

2 Sheets—Sheet 2.

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FIG. 4.

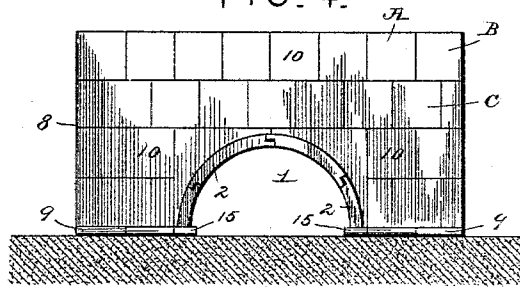


FIG. 5.

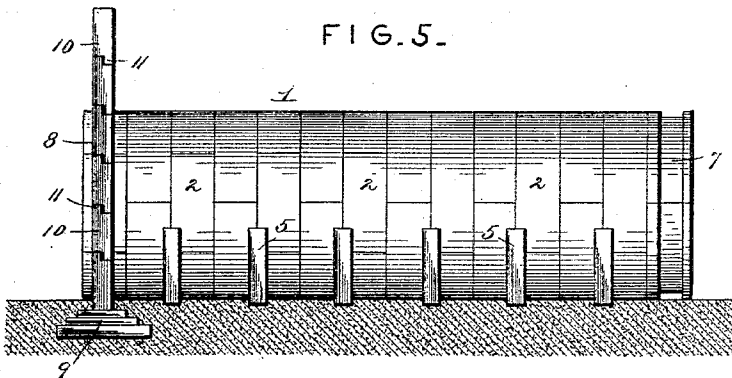


FIG. 6.

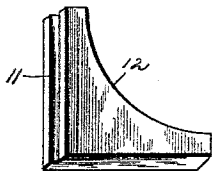


FIG. 7.

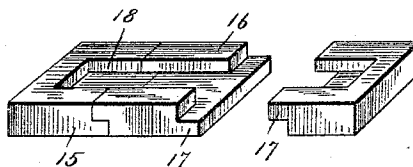


FIG. 8.

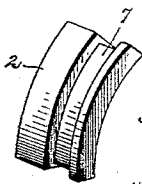


FIG. 10.

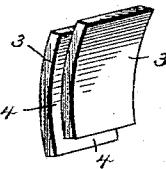
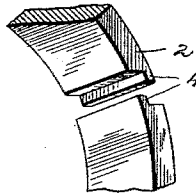


FIG. 9.



Witnesses

Harry L. Ames.

L. P. Thompson

By his Attorneys.

Inventor
William S. Parker

C. Snow & Co.

UNITED STATES PATENT OFFICE.

WILLIAM S. PARKER, OF AUSTIN, TEXAS, ASSIGNOR OF ONE-HALF TO
CHARLES A. NEWNING, OF SAME PLACE.

CULVERT.

SPECIFICATION forming part of Letters Patent No. 546,245, dated September 10, 1895.

Application filed October 31, 1894. Serial No. 527,569. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. PARKER, a citizen of the United States, residing at Austin, in the county of Travis and State of Texas, have invented a new and useful Culvert, of which the following is a specification.

This invention relates to culverts, and it has for its object to provide a new and useful culvert or large drain adapted for use on roads, railroads, and the like.

To this end the main and primary object of the present invention is to provide a strong and durable culvert that can be easily set up in large or small sizes at a comparatively small expense, and is designed to displace the wood culverts that are used almost exclusively for the manufacture of large-sized culverts, inasmuch as vitrified pipe is not made in sufficiently large sizes for culvert use, and the ordinary large brick and stone culverts are very expensive.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is an end view of a culvert constructed in accordance with this invention. Fig. 2 is a side elevation of the culvert shown in position under a road-bed. Fig. 3 is a detail in perspective of a series of the flat rectangular blocks or bricks used in making the end retaining-walls. Fig. 4 is an end view of a modified form of the culvert, showing the culvert-pipe consisting of a semicircular arch. Fig. 5 is a side elevation of the culvert, showing one retaining-wall in position at one end of the pipe and the other end of the pipe without the retaining-wall fastened thereto. Fig. 6 is a detail in perspective of one of the triangularly-shaped blocks or bricks of the retaining-wall that fits directly on the culvert-pipe. Fig. 7 is a detail in perspective of the sectional foundation-stone for the opposite lower side edges of the semicircular pipe-arch. Fig. 8 is a detail in perspective of one of the end segmental blocks or bricks for the ends of the culvert-pipe. Figs. 9 and 10 are details in perspective of the segmental blocks or bricks of the culvert-

pipe, showing more clearly the flanges for the interlocking lap-joints. Fig. 11 is a detail in perspective of one of the side brace blocks or bricks.

Referring to the accompanying drawings, 1 designates a sectional culvert-pipe consisting of a circular series of jointed segmental blocks or bricks 2. The segmental blocks or bricks 2 are made of any suitable concrete or clay material, and are made in sizes adapted for building any size of culvert, and the said segmental blocks or bricks 2 each consist of duplicate rectangular portions 3, offset with respect to each other to form at the side and end edges thereof the opposite upper and lower joint flanges 4, that overlap the adjacent corresponding flanges of the adjacent blocks or bricks, so that when all of the blocks or bricks are assembled in circular series the same interlock with each other by lap-joints, which not only provide a perfectly water-tight pipe, but one that will be both strong and durable. The segmental blocks or bricks 2 of each circular series break joints with the blocks or bricks of the adjacent circular series, and when assembled together suitable cement is placed in the lap-joints so that when it dries the culvert-pipe will be as strong and durable as the most expensive brick or stone culverts, and by reason of the specific lap-joints between the blocks or bricks the same firmly brace each other and are absolutely prevented from being dis-jointed.

In Figs. 1, 2, and 5 of the drawings the culvert-pipe is illustrated as being a complete circular pipe, while in Fig. 4 of the drawings the culvert-pipe consists of a semicircular pipe-arch that is constructed in precisely the same manner as the complete circular pipe, and also consists of a circular series of segmental blocks or bricks 2 joined together by cemented lap-joints. Ordinarily the semicircular pipe-arch does not need any side bracing, but for additional strength the triangularly-shaped side brace blocks or bricks 5 are employed in connection with the circular culvert-pipe. The triangular side brace blocks or bricks 5 are adapted to be arranged at the opposite lower sides of the circular pipe, and are provided with segmental or curved rest-

faces 6 that conform to the exterior shape of the culvert-pipe and fit close up to the same. The said blocks or bricks 5 are arranged in a longitudinal series along both lower sides of the complete circular pipe, and the segmental or curved faces 6 thereof fit against the sides of the pipe, over the transverse circular joints thereof, thereby strengthening these joints of the pipe at the sides and consequently strengthening the entire pipe.

The segmental blocks or bricks 2 of the culvert-pipe, at the ends thereof, are provided with the exterior circular fastening-grooves 7, in which grooves are built or fastened the opposite end retaining-walls 8, that are located at opposite ends of the culvert-pipe. The end retaining-walls 8 are preferably arranged to rest at their bottom edges on suitable foundation stones or blocks 9, and are made sectional, consisting of a series of jointed, flat rectangular blocks or bricks 10. The flat rectangular blocks or bricks 10 may be made in any suitable sizes, such as illustrated in Figs. 1 and 4 of the drawings, and are provided at their meeting edges with the offset-joint flanges 11, that overlap each other to form lap-joints that are cemented together in the same manner as the lap-joints of the blocks or bricks comprising the culvert-pipe. While most of the blocks or bricks 10 are rectangular, it will be obvious, as illustrated in the drawings, that the blocks or bricks fitting in the end grooves 7 of the culvert-pipe are necessarily triangular in shape and are provided with segmental or curved sides 12, that are cemented within the grooves 7, and provide for securely fastening the end retaining-walls to the ends of the culvert-pipe.

In Fig. 3 of the drawings is illustrated the necessary different forms of the rectangular blocks or bricks used in the retaining-walls, such blocks or bricks being designated as A, B, and C, respectively, and correspond to the similarly-lettered blocks or bricks shown in Fig. 4 of the drawings, it being noted that the block or brick A is provided with the offset flange 11 on three sides, the block or brick B with the flange on two sides, and the block or brick C with the flange on all four sides.

The end retaining-walls 8, just described, substantially complete both forms of the culvert shown in Figs. 1, 2, and 5, and in Fig. 4, and said retaining-walls serve to retain the earth-fill 13 upon the culvert, such fill forming the ordinary drive-road or railroad, and the earth-fill is also retained in place by the rock riprap 14 that is arranged to slope above the top of the retaining-wall.

In the form of culvert shown in Fig. 4 of the drawings, wherein a half-pipe or pipe-arch

is employed, the lower edges of the blocks or bricks forming the lower side edges of the arch rest on the opposite sectional foundation-stones 15. The sectional foundation-stones 15 consist of a series of jointed blocks or bricks 16, provided with overlapping joint-flanges 17 at their meeting edges, and the said foundation-stones are provided with the longitudinal top grooves or seats 18 to receive the opposite lower side ends of the arch or the lowermost tiers of blocks or bricks forming the same, and these foundation-stones serve to retain or hold the arch in its proper shape and forms a stable support for the same.

In the construction of culvert described, it is to be particularly noted that the different parts thereof are sectional and consist of portable parts that can be easily handled for the purpose of transportation and building, thereby accomplishing the results claimed.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a culvert, a sectional culvert pipe consisting of a series of jointed segmental blocks or bricks, and sectional retaining walls separately built on the opposite ends of the culvert pipe and consisting of a series of jointed blocks or bricks, certain of said latter blocks or bricks being provided with segmental or curved sides to fit the exterior surface of the culvert pipe, substantially as set forth.

2. In a culvert, the sectional culvert pipe provided at its opposite ends with exterior circular fastening grooves, and sectional end retaining walls consisting of a series of jointed blocks or bricks, certain of which are triangular in shape and are provided with segmental or curved sides registering in the circular grooves of the pipe, substantially as set forth.

3. In a culvert, the combination of a sectional culvert pipe arch, and opposite sectional foundation stones consisting of a series of jointed blocks or bricks provided at their meeting edges with overlapping joint flanges, said foundation stones having longitudinal top grooves to receive the opposite lower sides of the pipe arch, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM S. PARKER.

Witnesses:

GARDNER RUGGLES,
W. B. BRUSH.