

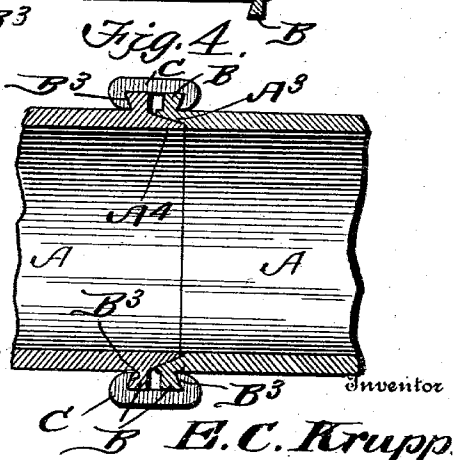
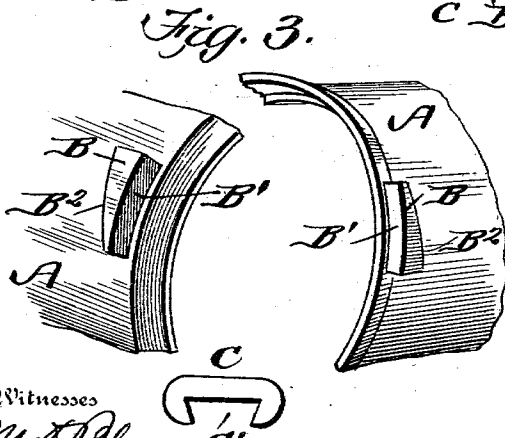
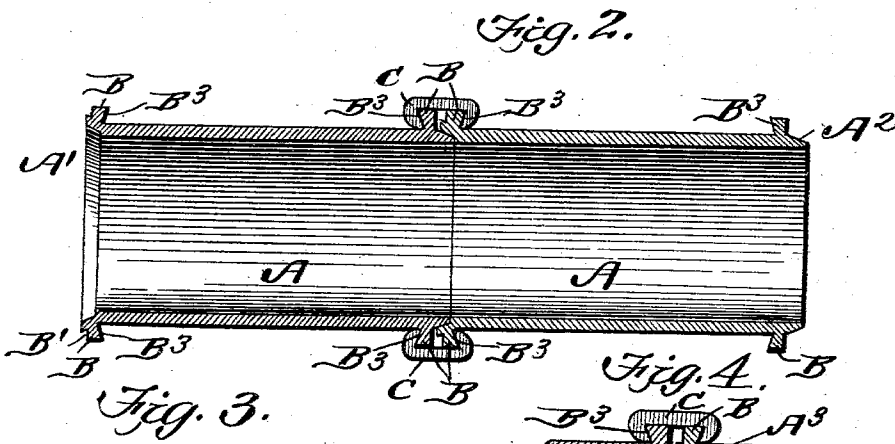
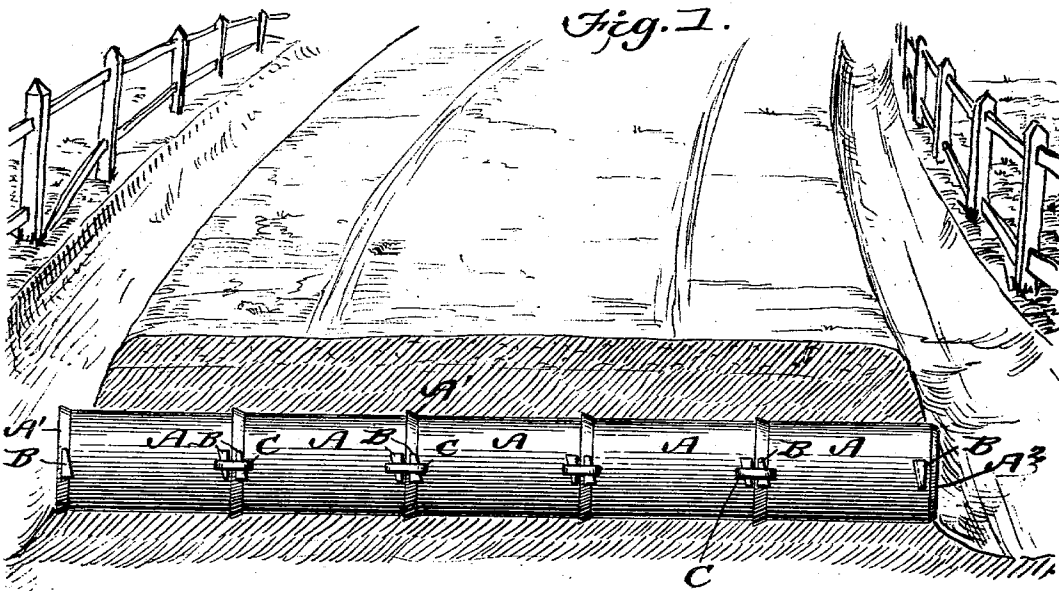
No. 739,686.

PATENTED SEPT. 22, 1903.

E. C. KRUPP.
CULVERT.

APPLICATION FILED JUNE 10, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

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CULVERT.

SPECIFICATION forming part of Letters Patent No. 739,686, dated September 22, 1903.

Application filed June 10, 1903. Serial No. 160,944. (No model.)

To all whom it may concern:

Be it known that I, ELI C. KRUPP, a citizen of the United States, residing at Lansdale, in the county of Montgomery and State of Penn-
sylvania, have invented a new and useful Cul-
vert, of which the following is a specification.

This invention relates generally to culverts composed of a series of metallic pipe-sections, and more particularly to the improved con-
struction of said pipe-sections and the means for connecting them, the object being to provide a pipe-section of such construction that one section can be quickly and easily con-
nected to or disconnected from another sec-
tion without interfering with or effecting any other pipe section or sections connected thereto.

With this object in view my invention consists, essentially, in providing each pipe-section with wedge-shaped lugs projecting outwardly from the pipe-sections adjacent their ends, said lugs being so arranged that when two sections of pipe are brought together and the wedges arranged adjacent each other their
inclined or oblique faces will be substantially parallel, and in the employment of a clamping-key having a dovetailed opening, said clamping-key being adapted to engage the contiguous wedge-shaped lugs carried by the
adjacent pipe-sections, thereby securely fastening the said pipe-sections together.

The invention consists also in certain details of construction hereinafter fully described, and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a view illustrating a culvert constructed in accordance with my invention and composed of five pipe-sections connected together and arranged beneath a roadway. Fig. 2 is a sectional view illustrating two sections connected together. Fig. 3 is a detail perspective view showing the adjacent ends of two sections and the clamping-key for engaging the wedge-shaped lugs. Fig. 4 is a sectional view showing a very slight modification.

In constructing a culvert I employ a series of similar pipe-sections, the number of sections employed being dependent upon the

length of culvert desired. Each pipe-section A has two or more wedge-shaped lugs B arranged upon the exterior and adjacent each end of the pipe-section, and when two lugs only are employed at each end I prefer to arrange said lugs at diametrically opposite points, and when more than two lugs are arranged at each end said lugs are preferably arranged at equidistant points. This arrangement insures the mating of all the wedge-shaped lugs whenever two sections of pipe are brought together, and, furthermore, it places the fastening means at equidistant points, thereby securely connecting the meeting ends of the pipe-sections. The pipe-sections can be constructed with a flaring end A' and a reduced end A², as shown in Figs. 1 and 2, or each pipe-section can be constructed with a cut-out end A³ and a taper A⁴ at the opposite end. As before stated, the wedge-shaped lugs B are arranged adjacent each end of each pipe-section, and the straight faces B' of the lugs are arranged nearest the ends, while the oblique faces B² are arranged innermost. Furthermore, each oblique edge is undercut, as shown at B³. The lugs B are so arranged that when two sections of pipe are placed end to end and the lugs brought opposite each other the oblique faces of the lugs will be substantially parallel with each other, and when the lugs are so positioned and turned, so that the distance between the inclined faces is at the minimum, I connect them by means of a clamping-key C, having a dovetailed opening C', which fits the undercut edges of the wedge-shaped lugs, and then by giving one or both of the pipe-sections a slight turn, so as to slightly spread or separate the oblique faces of the lugs, the clamping-key will be caused to tightly bind against both of the lugs, thereby securely connecting the meeting ends of the adjacent pipe-sections, and, if desired, the clamping-key can be still more securely fastened by striking each end a sharp blow, thereby forcing the ends more tightly into engagement with the undercut edges of the wedge-shaped lugs.

It is obvious that a culvert of any length desired can be quickly and easily built from

a series of pipe-sections constructed in accordance with my invention, and it is also obvious that a section can be added to or subtracted from the culvert at any time desired, so that in case the roadway should be made broader or narrower the length of the culvert can be increased or decreased, as desired, without removing the main or central portion of the culvert.

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

1. A culvert consisting of a plurality of pipe-sections, each pipe - section having wedge-shaped lugs adjacent the ends and the clamping-keys adapted to engage the wedge-shaped lugs, substantially as described.

2. A culvert comprising a plurality of pipe-sections, each pipe - section having wedge-shaped lugs adjacent their ends, the oblique faces of said lugs being undercut, and the clamping-keys having dovetailed openings, substantially as and for the purpose described.

3. A pipe - section for culverts, having wedge-shaped lugs adjacent each end, the outer faces of said lugs being straight, the inner faces being oblique and undercut, substantially as described.

ELI C. KRUPP.

Witnesses:

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