

(No Model.)

G. M. CHENEY.
ARCH CULVERT.

No. 591,949.

Patented Oct. 19, 1897.

Fig. 1.

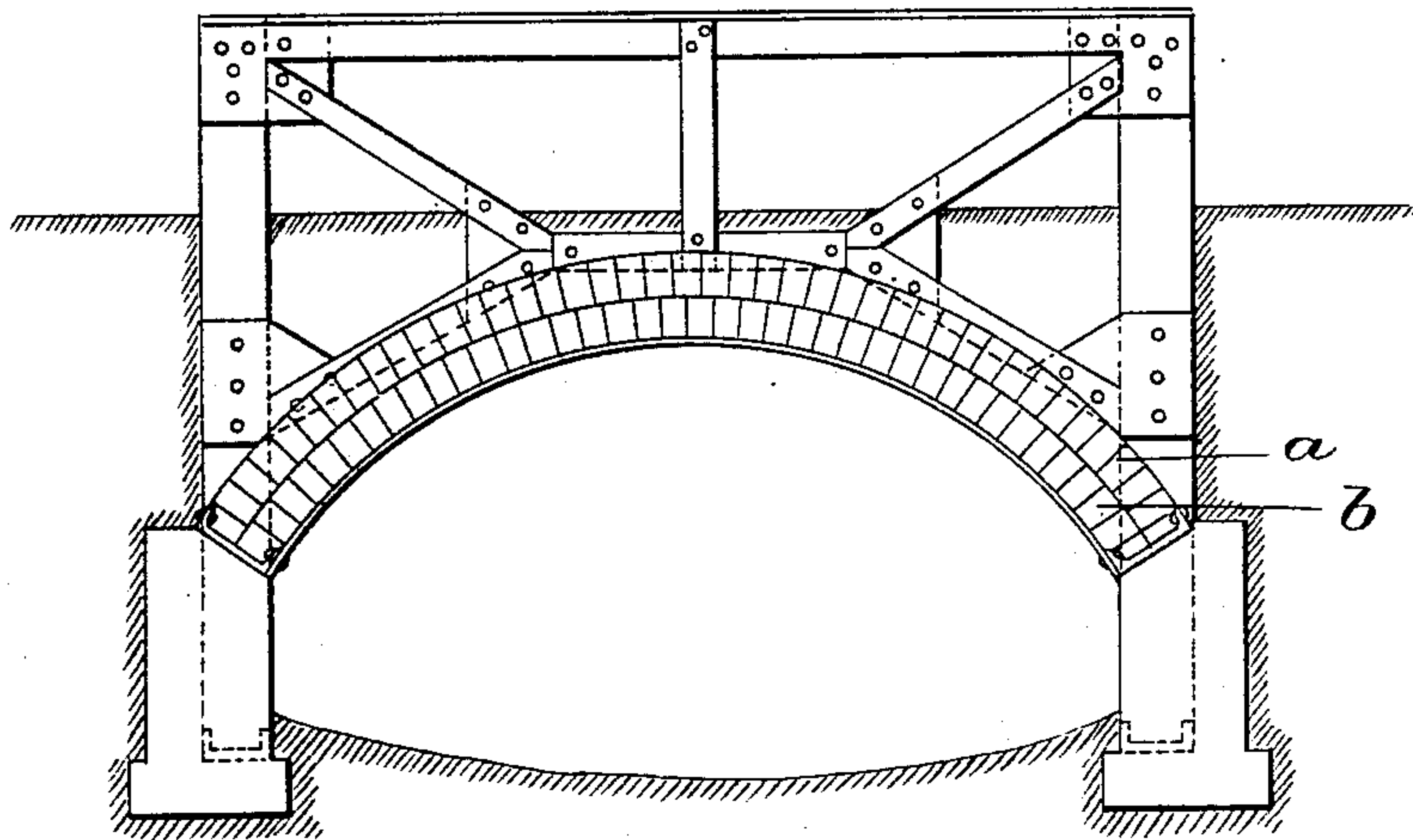


Fig. 2.

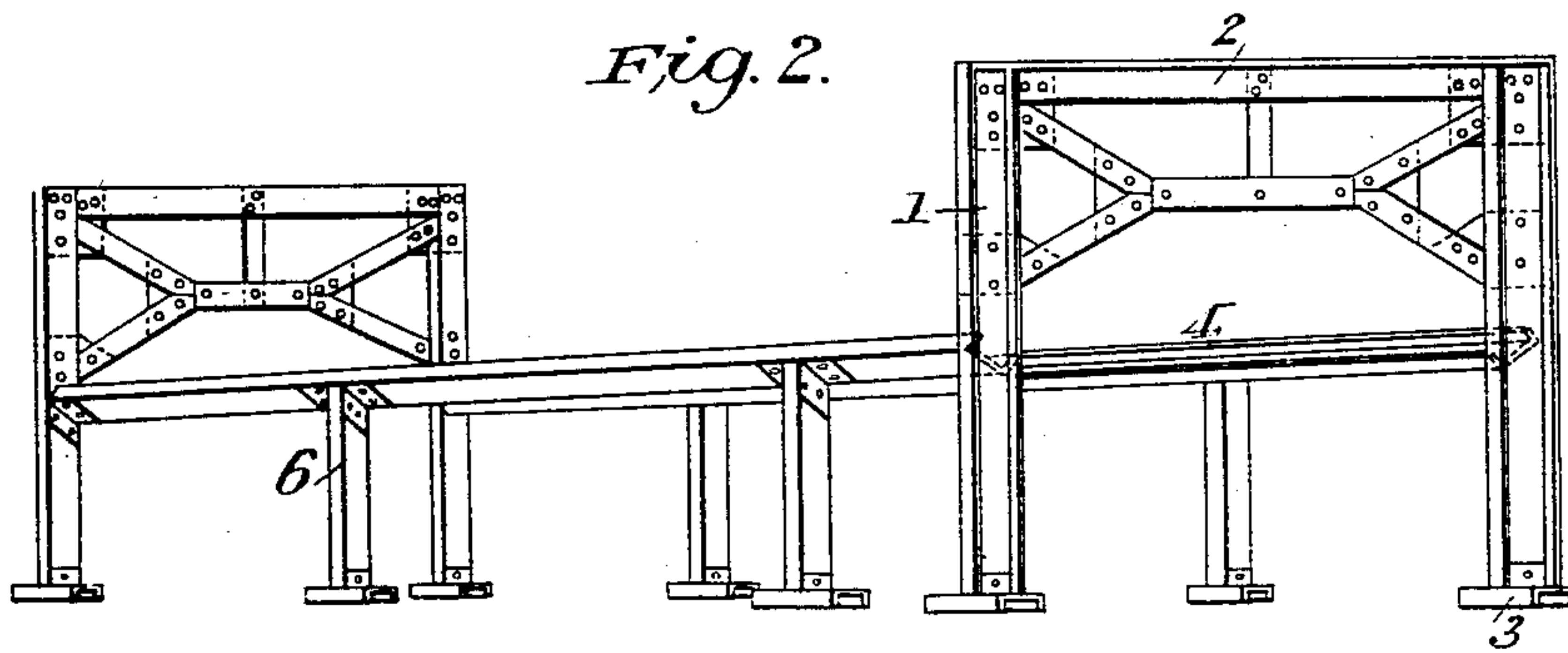
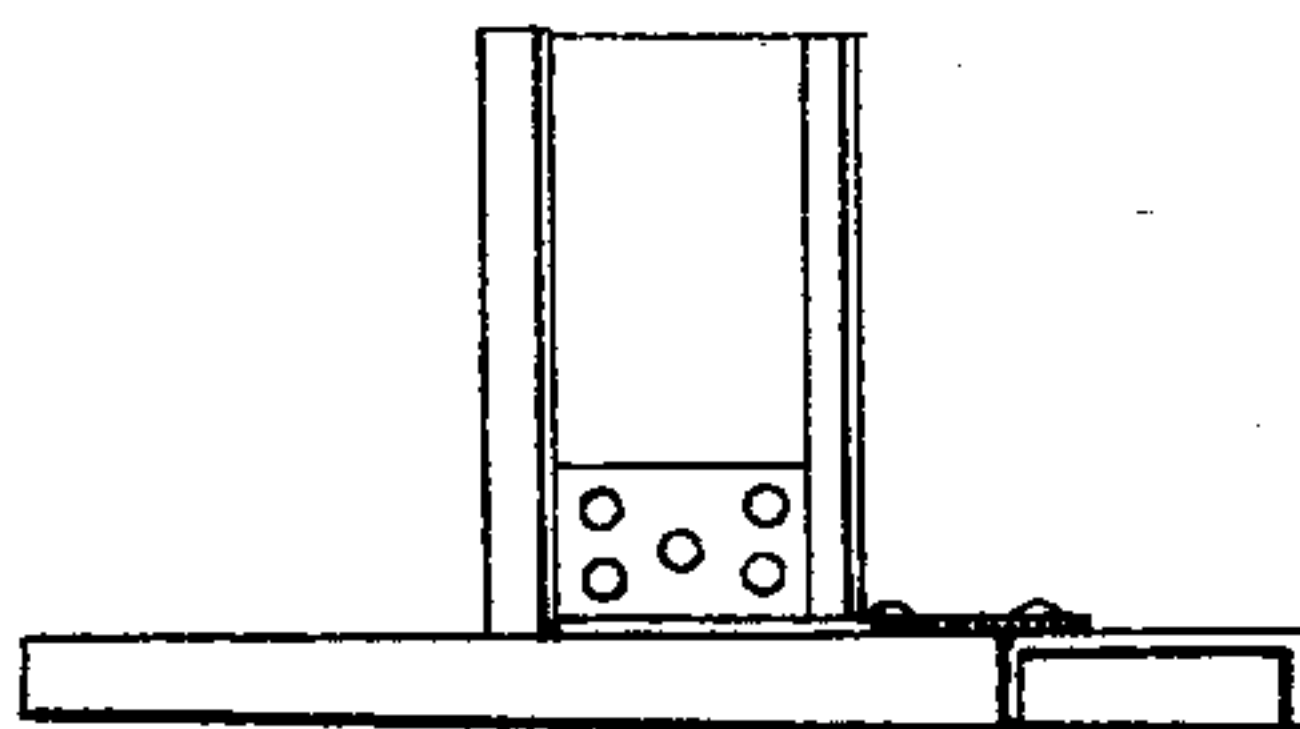


Fig. 3.



Witnesses.
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ARCH CULVERT.

SPECIFICATION forming part of Letters Patent No. 591,949, dated October 19, 1897.

Application filed November 28, 1896. Serial No. 613,830. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. CHENEY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a certain new and useful Arch Culvert; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to use the same, reference being made to the accompanying drawings, forming a part thereof.

My invention consists of a steel-frame support solidly riveted together in such a manner as to admit of the building of a segmental arch of brick or stone, with a small rise, as compared with the length of span, and in the construction of an arch culvert of two courses of material. The inner course of material or intrados *b*, Figure 1, is laid with an unyielding mortar, as cement or lime mortar. The outer course or extrados *a*, Fig. 1, is laid with a yielding mortar, as coal-tar or asphalt. The construction of an arch with the outer course laid with an elastic mortar is for the purpose of protecting the structure from sudden heavy jars, and is for the purpose of permitting of the use of the structure as soon as completed without danger to the structure.

Referring to the drawings, Fig. 1 shows a cross-section of said arch culvert, with the feet of the arch resting on a steel channel, which is solidly riveted to the end trusses, and which rest upon the abutments of the arch, forming the upper surface of the skewback. The end trusses are so constructed as to admit of the free passage through the entire opening of the arch, and at the same time firmly hold the channels which form the upper part of the skewback in place, and also serve as a guard-rail at each end of the culvert.

Fig. 2: No. 1, as marked on the drawings in Fig. 2, shows the end posts. No. 2 shows the

lattice framework between the end posts. No. 3 shows the shoe on which rest the posts. No. 4 shows the channel upon which rest the feet of the arch. No. 5 shows an intermediate stay-brace. No. 6 shows the arch-support posts.

Fig. 3 shows a large detail of the shoe on which rests the post.

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

1. An arch culvert for highway purposes with a rivet steel-frame truss at each end of the arch, riveted to a steel plate or channel forming the upper part of the abutment of the arch, and so constructed as to admit of free and unobstructed passage through the opening of the arch.

2. A riveted steel framework supporting an arch and the end trusses serving as a guard-rail, and as a stay and support for the channels, forming the upper part of the skewback.

3. The construction of an arch culvert of two courses of material, the inner course or intrados, laid with an unyielding mortar, as cement or lime mortar; the outer course or extrados, laid with a yielding mortar as coal-tar or asphalt.

4. In combination, a steel plate or channel, at each foot of the segment of the arch and forming the upper part of the abutment or skewback of the abutment, riveted to and held in place by a vertical truss at each end of the arch, the truss at each end extending above the roadway for a guard-rail and protection of the masonry at the ends of the arch.

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Witnesses:

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