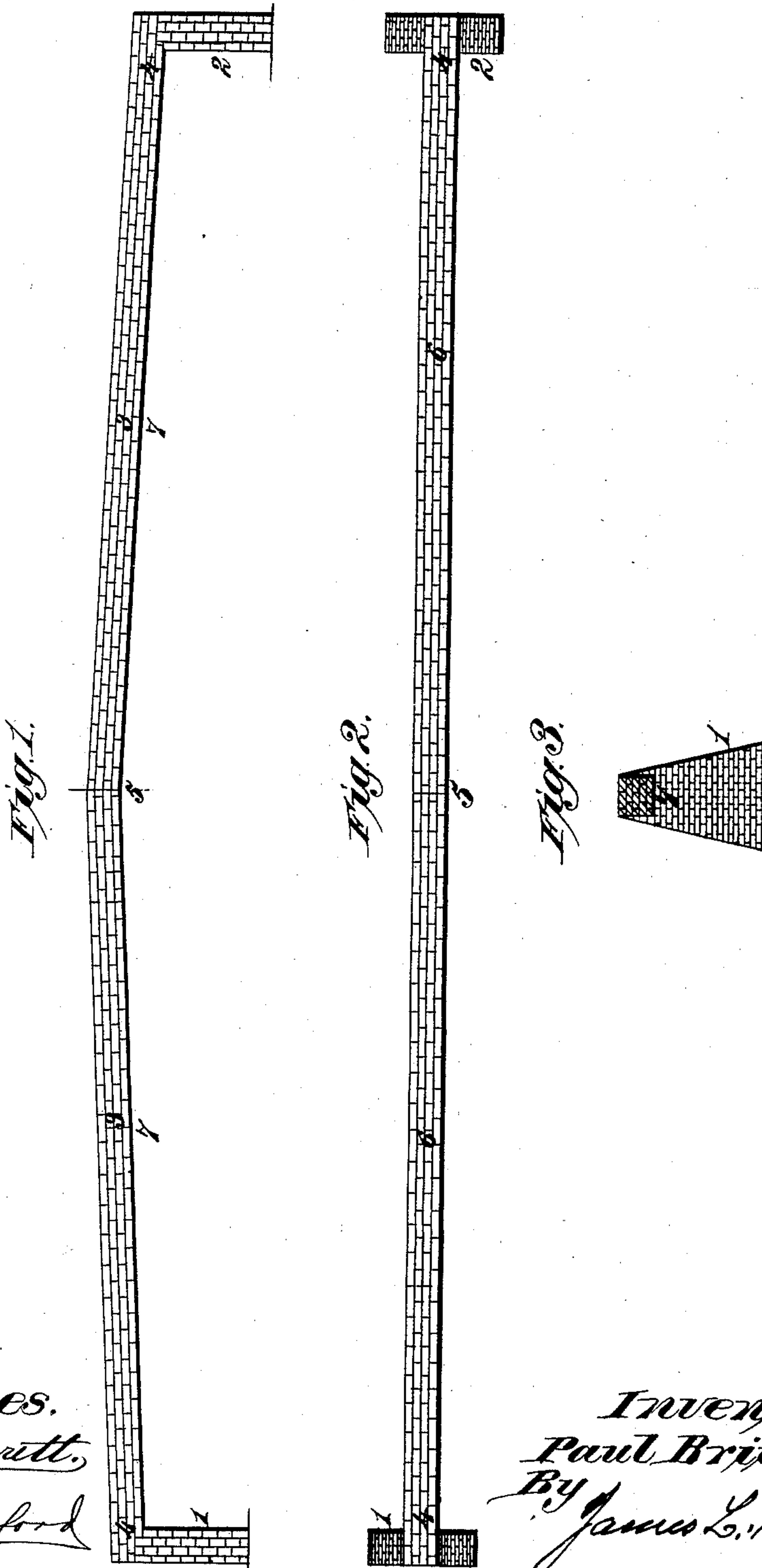


(Model.)

P. BRITVICH.
ARCHED BRIDGE.

No. 371,029.

Patented Oct. 4, 1887.



Witnesses.
Robert Everett.
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UNITED STATES PATENT OFFICE.

PAUL BRITVICH, OF LOS ANGELES, CALIFORNIA.

ARCHED BRIDGE.

SPECIFICATION forming part of Letters Patent No. 371,029, dated October 4, 1887.

Application filed July 27, 1887. Serial No. 245,445. (Model.)

To all whom it may concern:

Be it known that I, PAUL BRITVICH, a citizen of the United States, residing at Los Angeles, in the State of California, have invented
5 new and useful Improvements in Arched Bridges, of which the following is a specification.

The object of the present invention is to provide an arched bridge made of stone, brick-
10 work, or other small material, in which the arch-work is of such shape or form that the component parts or voussoirs are sustained by mutual opposition in a more perfect manner than heretofore, the thrust of the crown being
15 transferred from one part to another until it reaches the abutments.

The invention consists in an arched bridge which is made of brick or masonry work laid and cemented together in such a manner that
20 the whole structure is converted into a solid body, which retains its form through the inherent powers of resistance of the cementing materials and the interlocked or break-joint arrangement of the bricks or other small material. The shape of the arch is such that the
25 flanks or haunches will rise gently in a straight line to the crown from either abutment, thus providing a roadway on the masonry-work of the arch itself and dispensing with the span-
30 drels or filling required on curved, elliptical, or triangular arches.

In the accompanying drawings, Figure 1 is a side elevation of an arched bridge made according to my invention. Fig. 2 is a plan or
35 top view of the same. Fig. 3 is a transverse section.

The reference-numerals 1 and 2 designate the imposts or abutments for supporting the bridge structure. The latter consists of an arch of a
40 special form, which may be made of stone, brick, or other appropriate small material used in the construction of arched bridges. In the present instance I have shown an arch of masonry or stone work which is made of bricks or stones
45 laid in four parallel courses or rings in such a manner that the bricks or stones will break joint with each other. A strong cement is used to bind the bricks or stones together, and hence it follows that the cohesion of the cem-
50 ent employed will convert the whole structure into a solid body, which retains its form through the inherent powers of resistance of the ce-

menting materials and the relative positions or arrangement of the bricks or stones. A structure made and cemented together as described
55 will stand as much pressure as if it were cut out of solid material.

Referring to the drawings, it will be seen that the finished arch will have haunches or flanks 3, extending obliquely from the springers 4 and
60 abutments 1 and 2 to the crown or center course, 5, of the arch; also the extrados 6 and intrados 7 of the arch, instead of following a curved line toward the crown, are made straight or rise in
straight lines from the abutments, as is clearly
65 shown in the drawings. By such construction of the arch I obtain on the extrados or back of the arch a roadway ascending in a straight line from one abutment to the crown and descend-
ing from the latter in a straight line to the other
70 abutment. The size, span, and rise of the arch is proportioned to suit the requirements of the bridge, whether for foot-passenger, wagon, or railway travel.

An arched bridge constructed according to
75 my invention can be constructed of straight bricks or stones, requiring no trimming, can also be cheaply and easily erected, and since it has a back rising gently or gradually in
straight lines from the springers to the crown
80 it is obvious that the back of said arch will itself constitute a perfect road-bed.

It should be understood that a housing or railing may, when required, be applied to the arch, and the declivity or slope of the roadway
85 may, if desired, be changed by earth-work or otherwise. As has already been stated, however, the gently-rising surface of the back of the arch constitutes itself a roadway.

I am aware that it has been suggested to
90 make an arch of a V shape, so as to admit a straight line being drawn through some point of every voussoir on each side of the keystone. Such an arch, however, is not adapted to have its back used directly as a roadway; further-
95 more, the bricks or stones used in its construction support each other solely by mutual pressure and are not cemented together into a solid body in the manner proposed by me.

I am also aware that of late years bridges
100 have been executed of small materials laid in a straight line and cemented together, so as to convert the whole mass into a solid body. A bridge of such construction, called the "Pont

aux Doubles," exists at Paris, France. My
bridge differs from the same in regard to shape
or form, and, as already stated by me, I attain
by the special form and construction of my
5 bridge advantages not possessed by any other
form or mode of construction.

Having thus described my invention, what
I claim is—

10 A bridge comprising suitable abutments
and an arched structure formed of parallel
courses of bricks or stones solidly cemented to-

gether and interlocked, as herein set forth, and
having flanks sloping gently in straight lines
from the abutments to the center or crown,
and having a flat back serving as a roadway, 15
for the object herein set forth.

In testimony whereof I affix my signature in
presence of two witnesses.

P. BRITVICH.

Witnesses:

JOS. L. COOMBS,

J. A. RUTHERFORD.