

No. 694,193.

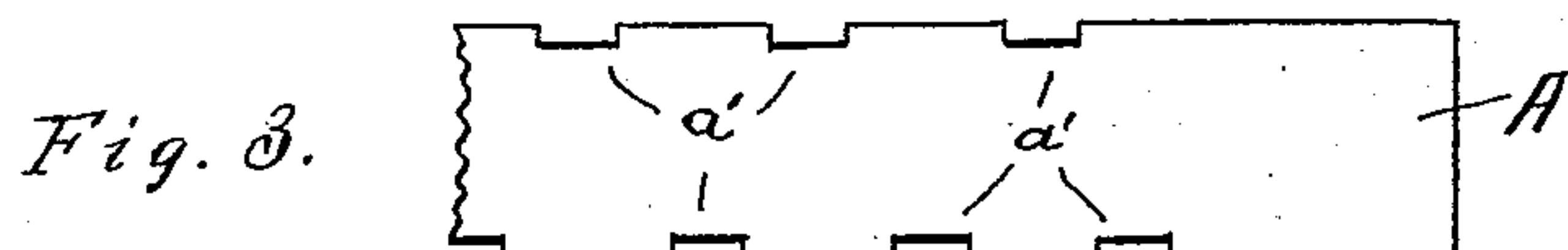
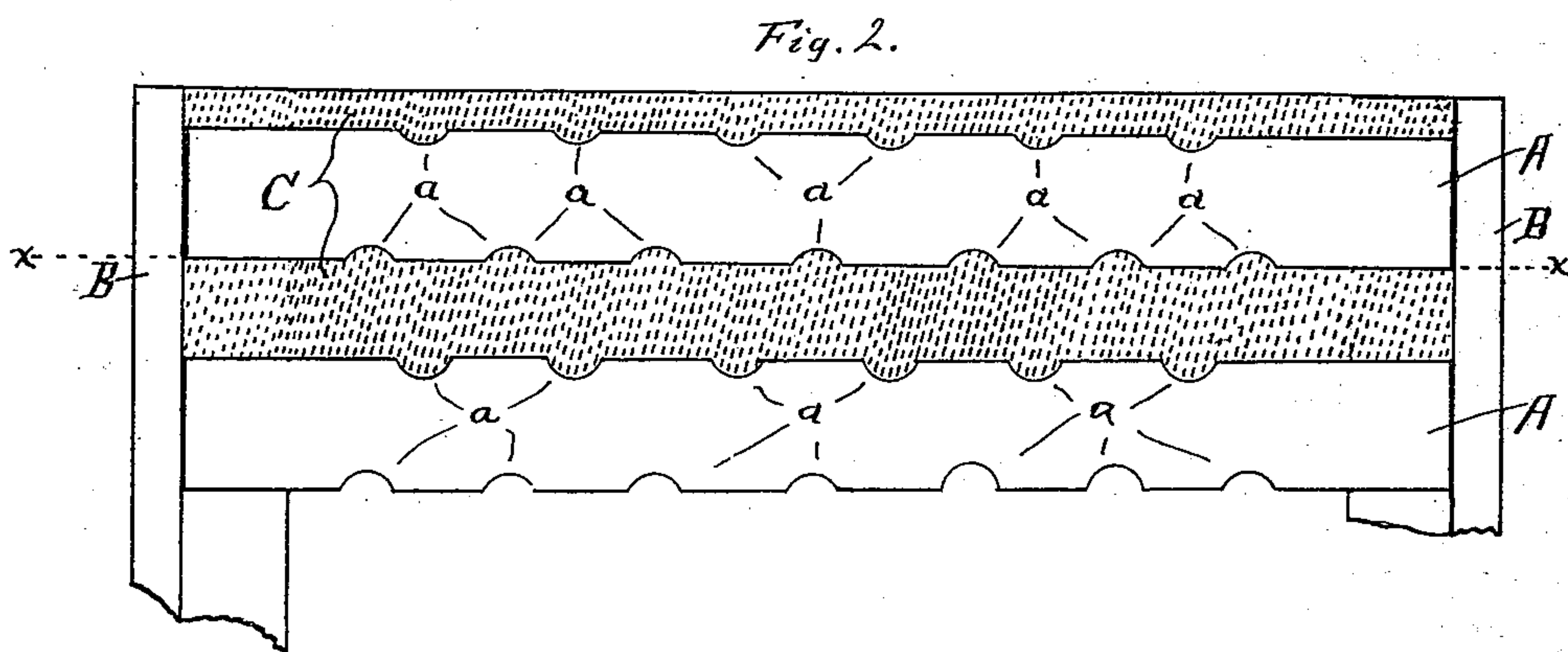
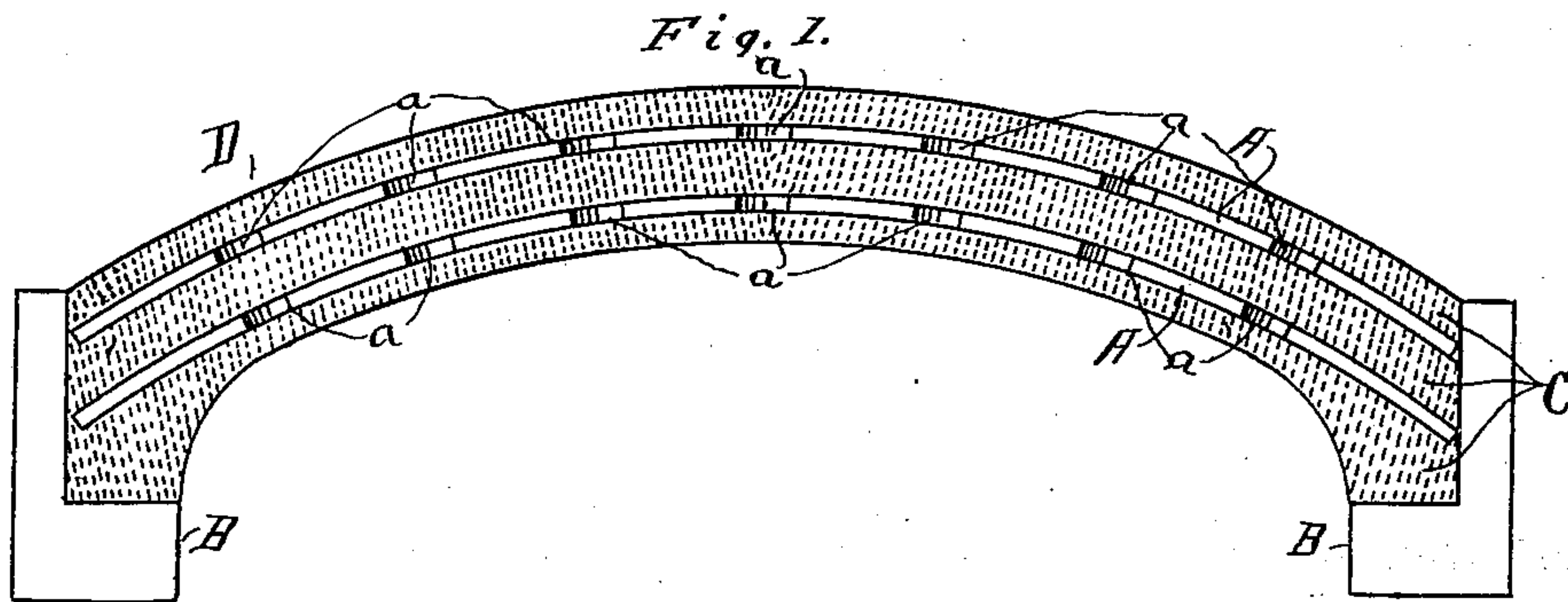
Patented Feb. 25, 1902.

K. S. RISER.

RIB FOR CONCRETE ARCH CONSTRUCTION.

(Application filed Oct. 26, 1901)

(No Model.)



Witnesses.

J. M. Stauffer
Jay Choad

Inventor.

Knud S. Riser
By Ethel J. Gilley
Attorney.

UNITED STATES PATENT OFFICE.

KNUD S. RISER, OF GRAND RAPIDS, MICHIGAN.

RIB FOR CONCRETE-ARCH CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 694,193, dated February 25, 1902.

Application filed October 26, 1901. Serial No. 80,160. (No model.)

To all whom it may concern:

Be it known that I, KNUD S. RISER, a citizen of Norway, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Ribs for Concrete-Arch Constructions, of which the following is a specification.

My invention relates to improvements in steel ribs for use in the construction of concrete-steel arches, in the construction of bridges, &c.; and its object is to avert the danger of the ribs slipping, or, rather, of the concrete slipping longitudinally upon the rib by reason of the passing and repassing of heavy loads over the structure. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of an arch on the line $x x$ of Fig. 2, showing the application of this rib. Fig 2 is a plan of a section of the piers, showing the ribs before the concrete has been fully applied; and Fig. 3 is a section of a rib, showing my invention in a modified form.

Similar letters refer to similar parts throughout the several views.

A represents the steel rib that forms the superstructure for the formation of the concrete arch C, and the notches or indentures a or a' in the edges of the ribs constitute the main feature of my invention. These indentures are so distributed into and along the edges of the ribs that the concrete when in place and thoroughly seasoned will engage the indentures, as in Fig. 2, forming a union so firm and complete as to wholly avert the

possibility of any longitudinal movement of the rib independent of the concrete, and thus fully avert the danger of the arch sagging at any given point, as at D, by reason of the support of an excessive load at such point, and thus causing the concrete to crack or crumble.

B represents the piers that support the arch.

I do not desire to be restricted to any particular form of notches or indentures in the edges of these ribs, as evidenced by the modification shown in Fig. 3, but prefer that shown in Fig. 2, though any available form may be used.

I am aware that ribs have heretofore been made for use in concrete arches with appliances attached thereto or formed therein for attaining the object herein stated; but I find them more expensive and less satisfactory than that herein shown. I therefore do not claim such, broadly, as my invention; but,

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

As a new article of manufacture, a rib for the superstructure of a concrete arch, said rib consisting of a flat broad bar of iron having offsets formed in its opposite edges in alternate positions, substantially as and for the purpose set forth.

Signed at Grand Rapids, Michigan, October 16, 1901.

KNUD S. RISER.

In presence of—

J. M. IANDURBERGE,
I. J. CILLEY.