

No. 778,247.

PATENTED DEC. 27, 1904.

E. B. JARVIS.
REINFORCED CONCRETE.
APPLICATION FILED MAY 20, 1904.

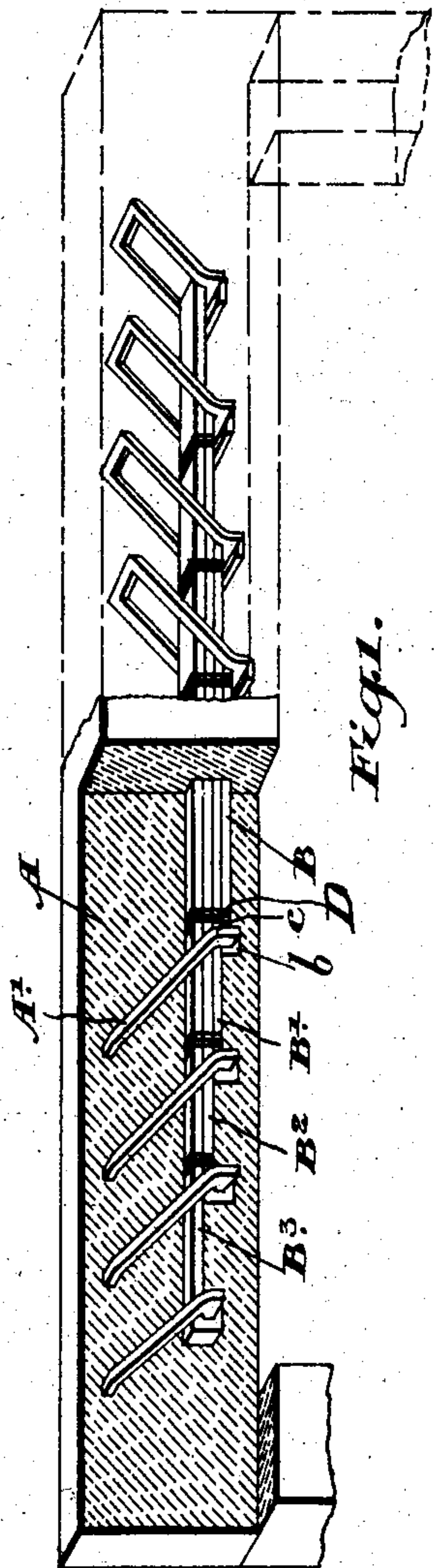


Fig. 1.

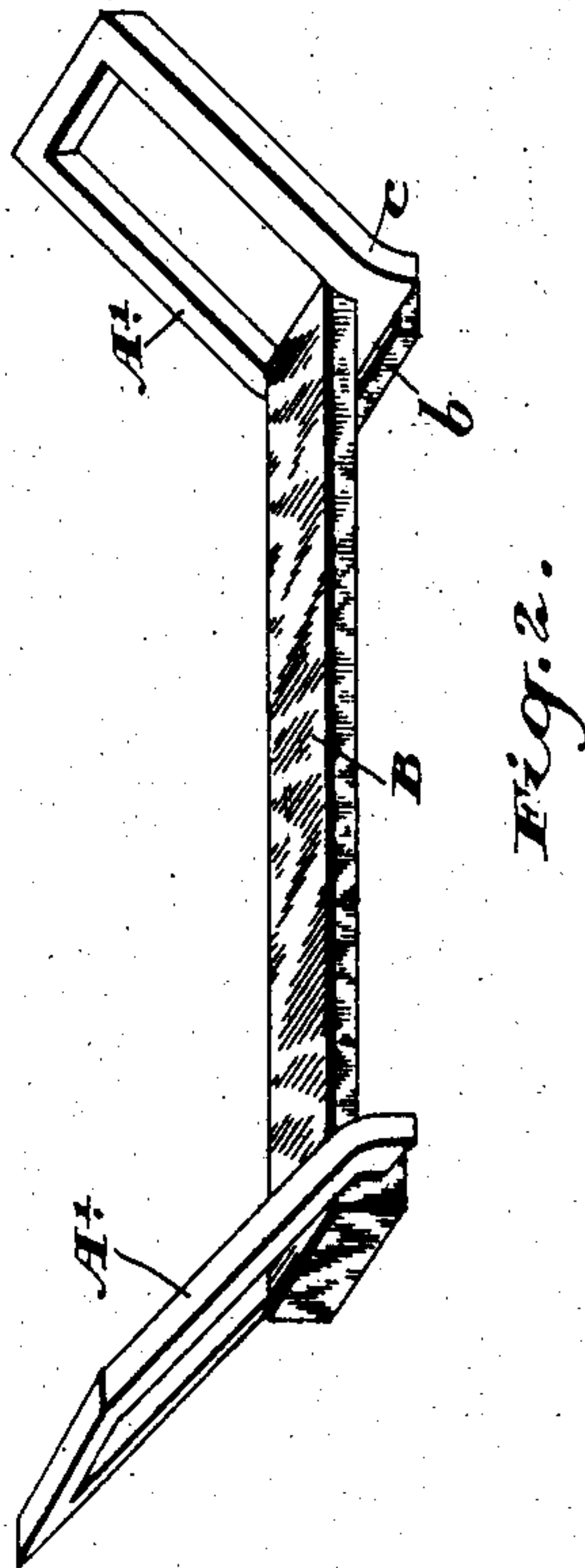


Fig. 2.

Witnesses

Samuel S. Smart

A. J. Bate

Inventor

E. B. Jarvis

By Fred B. Kettnerbaugh
att.

UNITED STATES PATENT OFFICE.

EDGAR BEAUMONT JARVIS, OF TORONTO, CANADA.

REINFORCED CONCRETE.

SPECIFICATION forming part of Letters Patent No. 778,247, dated December 27, 1904.

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To all whom it may concern:

Be it known that I, EDGAR BEAUMONT JARVIS, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Reinforced Concrete, of which the following is a specification.

My invention relates to improvements in reinforced concrete; and the object of the invention is to make a cheap, efficient, and scientifically-constructed truss to be incorporated in concrete beams, whereby the least amount of metal consistent with strength will be employed in the construction; and it consists, essentially, of a plurality of bars of increasing length located one above the other and provided with end lips, the shorter bars being arranged intermediate of the length of the longer ones and a plurality of stirrups held within the end lips and obliquely set, so as to incline toward the ends of the beam, the parts being otherwise constructed and arranged, as hereinafter more particularly explained.

Figure 1 is a perspective view of a beam partially broken away and in section to exhibit the construction of my truss. Fig. 2 is an enlarged detail showing one section of the truss comprising a bar and stirrups.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the cement beam.

B is the lower member or bar of the truss, which is provided with rectangular inwardly-turned end lips *b*.

A' represents the stirrups, which are made in the shape of a substantially rectangular loop bent at the lower end at *c*, so as to give an oblique set to the stirrup in the direction of the ends of the beam. There is a stirrup located at each end of the bar B.

B', B², and B³ are bars similarly formed, but of increasing length and located one above the other, as indicated in the drawings. The stirrups at the ends of the bars are correspondingly held by similar lips, and each bar at each end is preferably equidistant from the corre-

sponding end of the bar under it. The lips formed by the ends of the bars form a locking-hook in the cement, which prevents the bar slipping and also serves to hold the stirrups in position, which form the ties to take the shearing strain. The greatest bending moment or tension of the truss at the center, it will be seen, in construction is taken by the maximum depth of the bars, such depth decreasing as the bars approach the end of the beam practically in proportion as the bending moment decreases.

It will be readily seen from the form of truss that I have designed that a maximum strength is obtained in the cement beam with a minimum weight of metal.

I preferably provide the clamps D throughout the length of the bars, as indicated, and in proximity to the stirrups, so as to securely hold them together not only when in the beam, but also for transportation. The clamps, as well as the end lips, serve to prevent the bars from slipping lengthwise on the concrete.

It will be readily understood that my device may be applied to columns.

What I claim as my invention is—

1. A truss for cement beams comprising a plurality of bars of different lengths having inturned lips and located one above the other, the shortest being located in the center, and a plurality of obliquely-set stirrups held within the lips as and for the purpose specified.

2. A truss for cement beams comprising a bar with end lips and stirrups fitting within the lips and obliquely set as and for the purpose specified.

3. A truss for cement beams comprising a plurality of bars of different lengths located one above the other, the shortest being located in the center, and a plurality of obliquely-set stirrups suitably held at the ends of the bars as and for the purpose specified.

4. In combination a plurality of bars of different lengths located one above the other, the shortest being located in the center, a plurality of obliquely-set stirrups suitably held at

the ends of the bars and clamps for securing the bars together as and for the purpose specified.

5 5. The combination with a plurality of bars of different lengths located one adjacent to the other, the shortest being located in the center, and having obliquely-set ends, of clamps ex-

tending over the bars and designed to secure them together as specified.

EDGAR BEAUMONT JARVIS.

Witnesses:

B. BOYD,

M. McLAREN.