

No. 612,220.

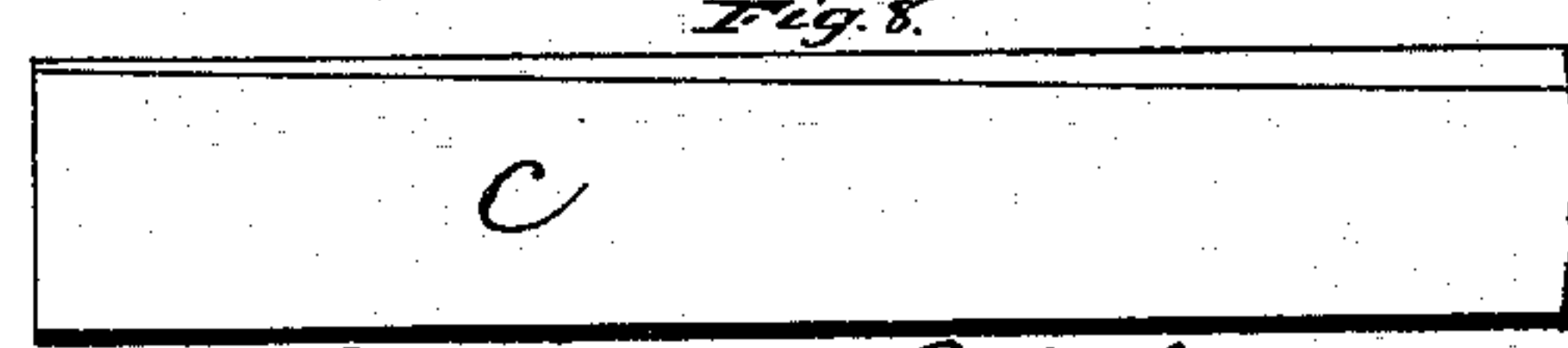
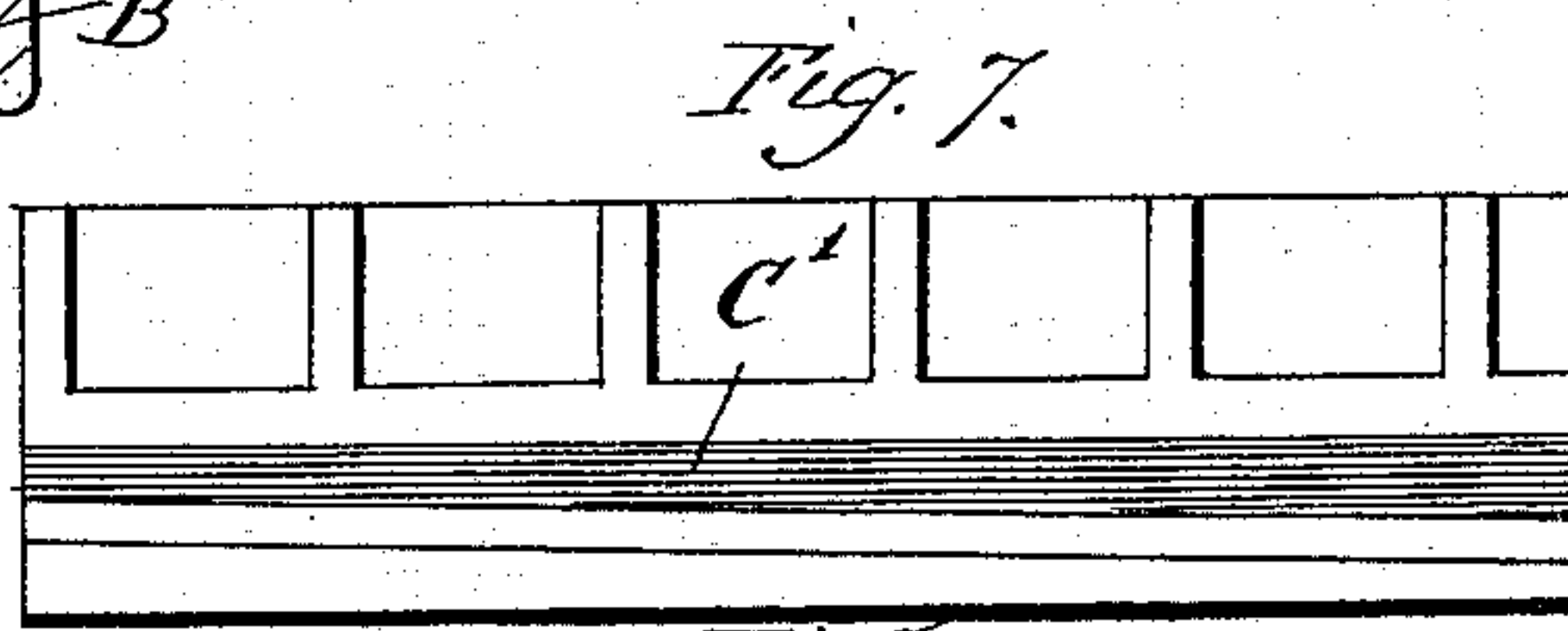
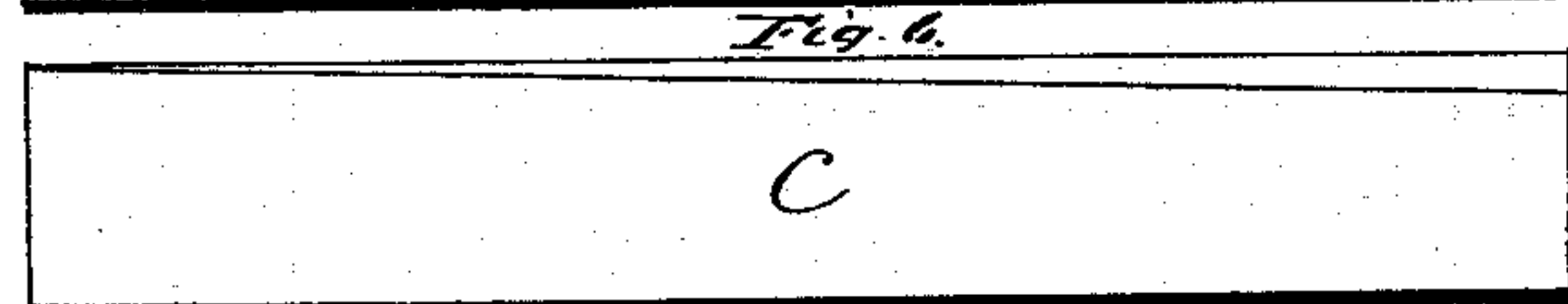
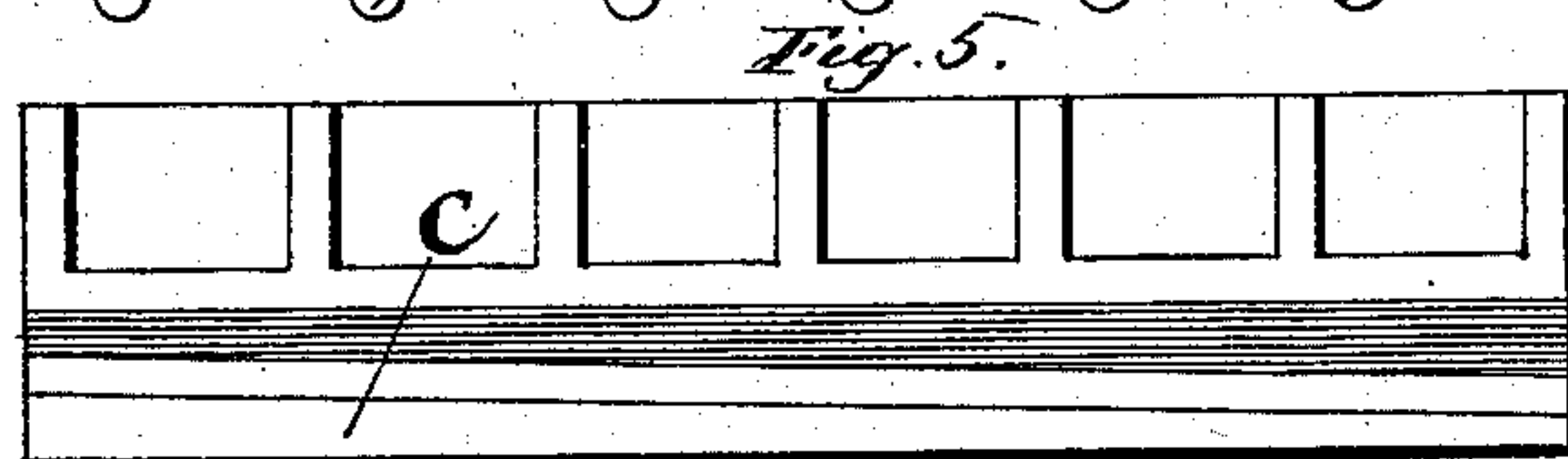
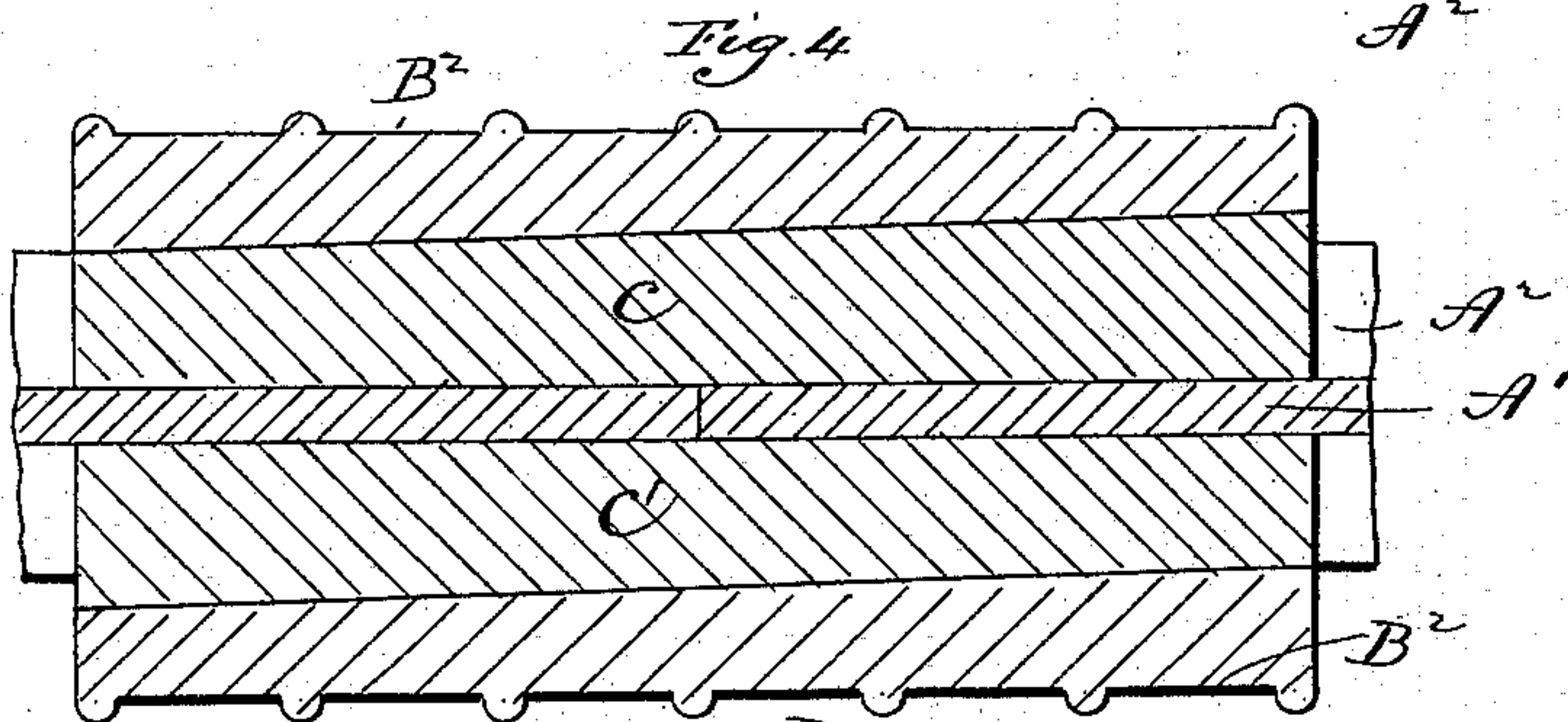
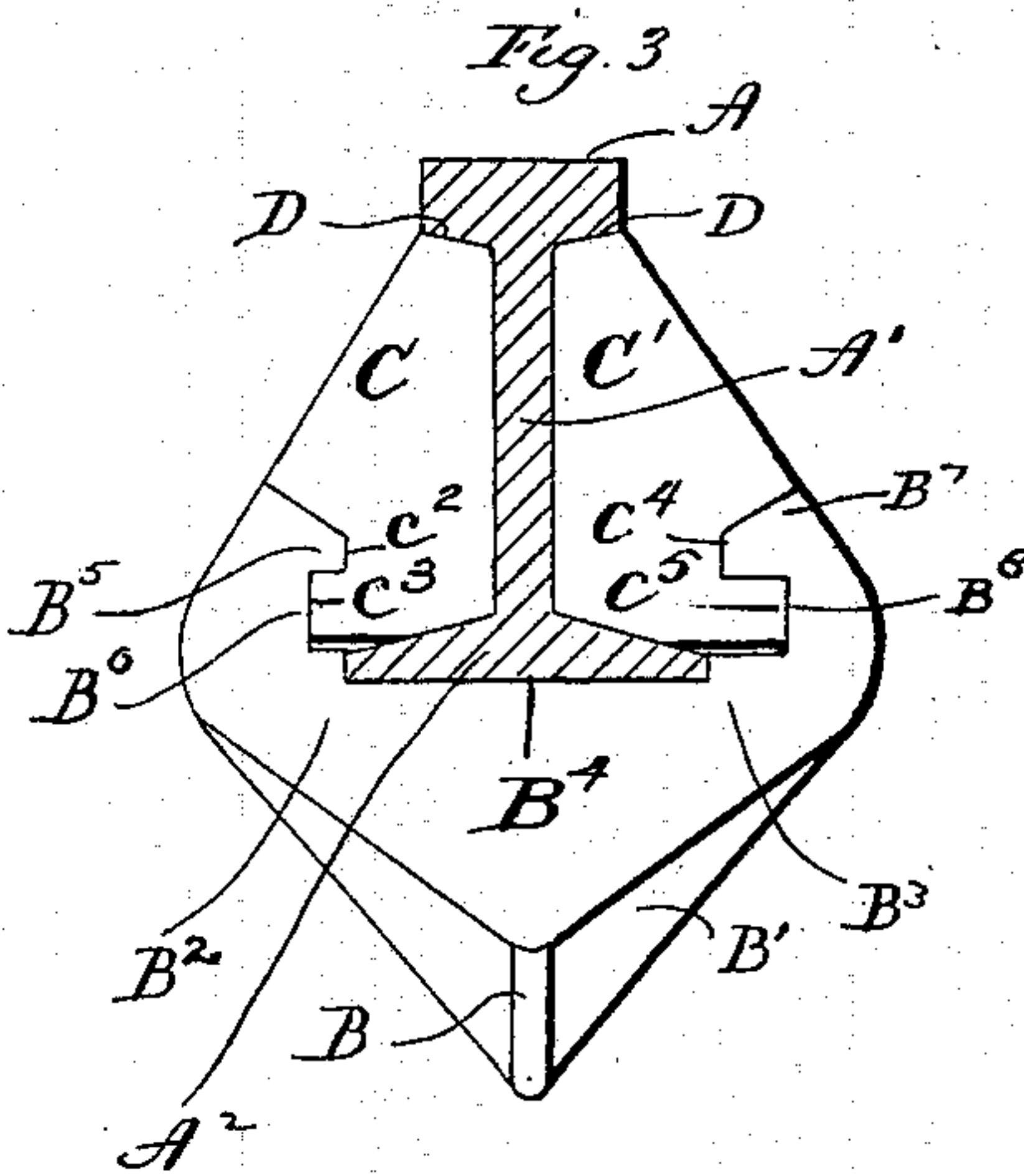
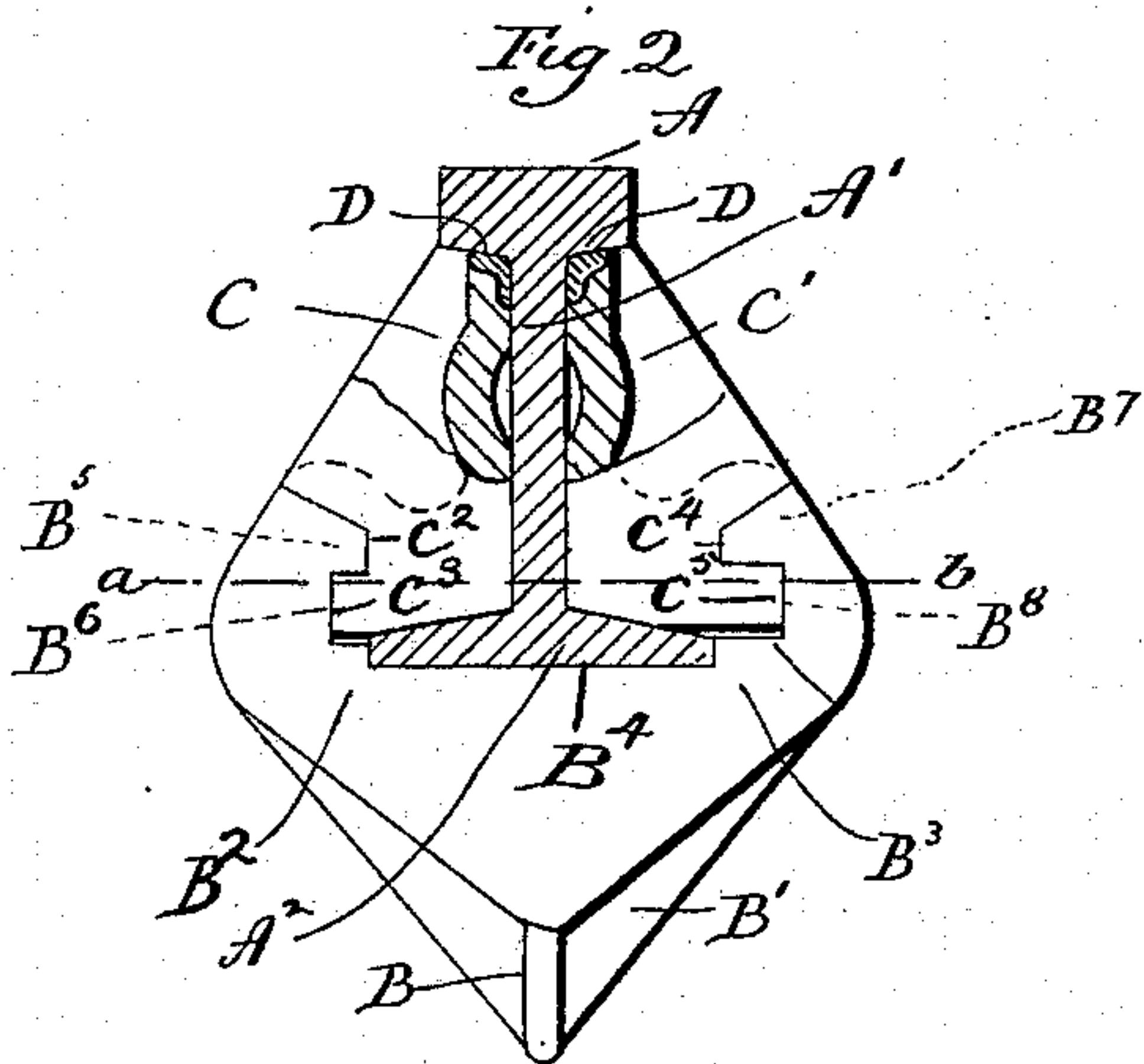
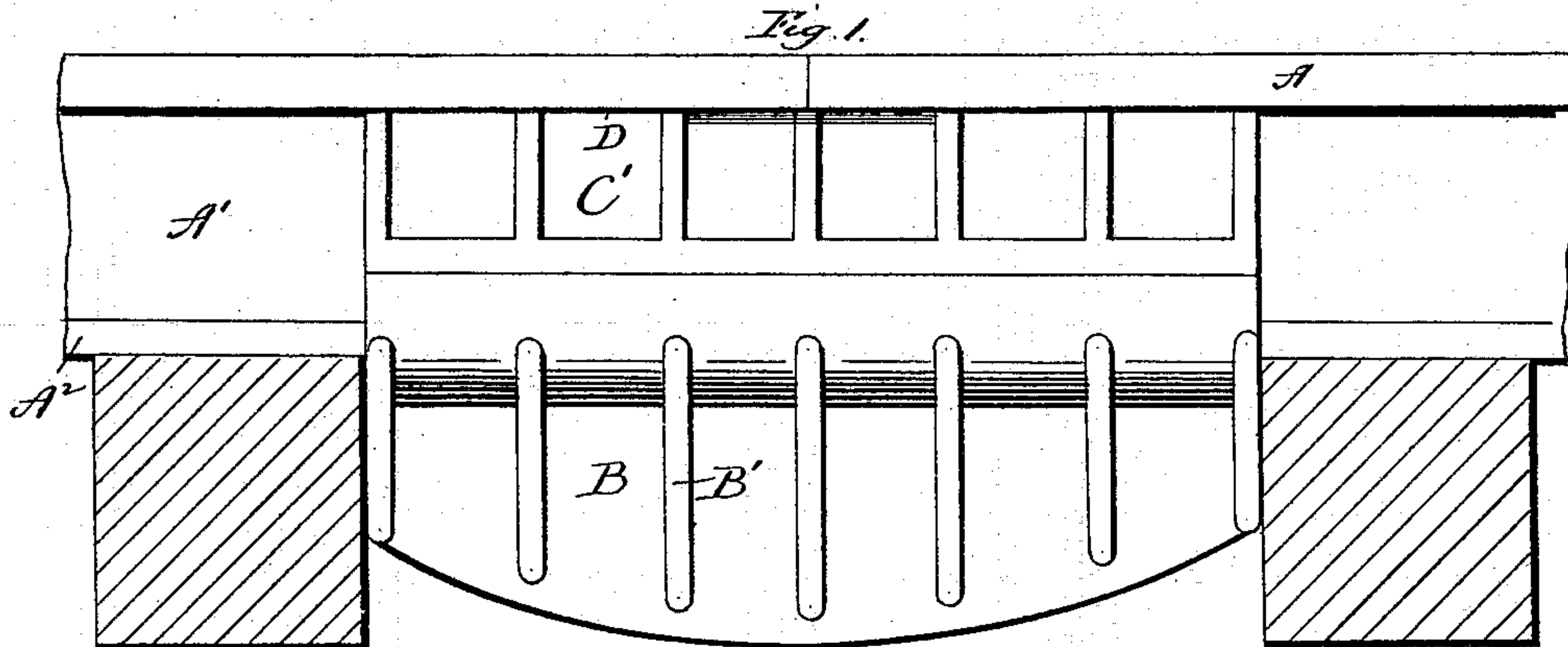
Patented Oct. 11, 1898.

E. S. WHEELER.

RAIL JOINT.

(Application filed Aug. 20, 1897.)

(No Model.)



Witness
for Summary
Lillian D. Kellogg.

Elongo Stern Wheeler.
Inventor
By Atty. Earle H. Hymon

UNITED STATES PATENT OFFICE.

ELONZO STERNE WHEELER, OF SAUGATUCK, CONNECTICUT, ASSIGNOR OF
ONE-HALF TO WILLIAM VAN DERVEER, OF NEW YORK, N. Y.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 612,220, dated October 11, 1898.

Application filed August 20, 1897. Serial No. 648,947. (No model.)

To all whom it may concern:

Be it known that I, ELONZO STERNE WHEELER, of Saugatuck, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Rail-Joints; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a rail-joint embodying my invention; Fig. 2, a view of the joint in end elevation, showing the rail in section and also showing the upper portions of the two wedges broken away to disclose their hard-metal shoes; Fig. 3, a view in end elevation of the opposite end of the joint with the rail broken away; Fig. 4, a view of the joint in longitudinal horizontal section on the line *a b* of Fig. 2; Fig. 5, a detached view, in side elevation, of one of the wedges; Fig. 6, a detached view of the bottom of the same wedge; Fig. 7, a detached view, in side elevation, of the other wedge; Fig. 8, a detached view of the bottom of the same.

My invention relates to an improvement in rail-joints, the object being to produce a simple, strong, durable, and effective joint of the type employing a housing and two corresponding oppositely-driven wedges, my improved joint being constructed with particular reference to equalizing the inward, upward, and downward pressures exerted upon the rail ends by the wedges of the joint to hold them in the housing thereof.

With these ends in view my invention consists in a rail-joint having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

As herein shown, each of the rail ends comprises a ball *A*, a web *A'*, and a base *A*². The joint proper consists of a trussed housing and two driving-wedges, the said housing and wedges being constructed for the driving of the wedges in opposite directions from the opposite ends of the housing. The said housing has a depending centrally-ar-

ranged truss *B*, which is reinforced by laterally-arranged webs *B'*, of which seven are shown, varying in length according to their location. The number of these webs will, however, be varied as required. The housing also comprises two upwardly-extending flanges *B*² and *B*³, respectively located upon its opposite edges and extending throughout its length. A shallow recess *B*⁴, formed within the housing and extending throughout the length thereof, is made just wide enough to receive the bases *A*² of the rail ends, which are designed to have equal bearing throughout every portion of its bottom.

The flange *B*² of the housing is formed with an inwardly-projecting rib *B*⁵ and with a groove *B*⁶, located below the same, while the flange *B*³ of the housing is formed with a corresponding rib *B*⁷ and a corresponding groove *B*⁸, the said ribs and grooves extending throughout the length of the flanges. The wedges *C* and *C'* are adapted to impinge at their bases upon the upper faces of the bases *A*² of the rail ends and at their upper edges against the under faces of the balls *A* thereof. The wedge *C* is formed with a groove *C*² and with a rib *C*³, while the wedge *C'* is formed with a groove *C*⁴ and with a rib *C*⁵, the said grooves and ribs of the wedges extending throughout the length thereof. In order to permit the said wedges to be driven in opposite directions into the housing from the opposite ends thereof and on opposite sides of the rail ends and so as to equalize the inward, upward, and downward pressures upon the rail ends, the surfaces of the rib *B*⁵ and groove *B*⁶ of the flange *B*² and the groove *C*² and rib *C*³ of the wedge *C* are pitched in the opposite direction from the surfaces of the rib *B*⁷ and groove *B*⁸ of the flange *B*³ and the groove *C*⁴ and rib *C*⁵ of the wedge *C'*. It will be understood, however, that the pitch of the said surface of one flange and its coacting wedge corresponds in degree to the pitch of the surfaces of the other flange and its coacting wedge, although the direction of the pitch is opposite, as set forth.

I particularly wish to call attention to the wide inwardly-pitched supporting and forcing surfaces formed by the upper faces of the ribs *B*⁵ and *B*⁷ of the flanges *B*² and *B*³, these

surfaces coacting with the upper walls of the grooves C² and C⁴ of the wedges C and C'.

When the wedges are driven in opposite directions, as described, into the housing, the upward, downward, and inward pressures brought to bear upon the rail ends will be equalized upon the opposite sides thereof, this being, as I may say, the "ideal" mode of holding the rail ends. I wish to call attention to the facts that these pressures are brought to bear upon the rail ends above the bottoms of their bases and that the lateral thrusts upon the rail ends are received and sustained on lines joining the under faces of the balls of the rail ends and the inclined upper faces of the ribs of the flanges of the housing.

As herein shown, the inner portions of the wedges are corrugated in form, so as to clear a portion of the webs of the rail ends and form spaces for electric bonding, which may be of any suitable construction; but it is not necessary, so far as my present invention is concerned, to adapt the wedges to this purpose.

In order to prevent the motion of the ends of the rails from "eating," so to speak, into the soft malleable iron wedges at the points where the rails abut, I prefer to shoe the upper edges of the wedges with steel shoes D D, which overcomes the difficulty referred to.

It is apparent that in carrying out my invention some changes from the construction herein shown and described may be made. I would therefore have it understood that I do not limit myself to the exact construction shown, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. A rail-joint comprising a housing having two upwardly-extending flanges located upon its opposite edges, extending throughout its length, and formed with inwardly-projecting ribs extending throughout their length and having inwardly-inclined upper faces, and two

corresponding wedges adapted to be driven in opposite directions from the opposite ends of the housing, and formed in their outer faces with longitudinal grooves extending throughout their length, and receiving and coacting with the said ribs, and the said flanges of the housing and the said wedges being formed with inclined or beveled surfaces which coact in imposing substantially equal inward, upward and downward pressures upon those portions of the rail ends with which the housing and wedges come in contact.

2. A rail-joint comprising a trussed housing, and two corresponding wedges adapted to be driven in opposite directions, the said housing being provided upon its opposite edges with upwardly-extending flanges having inwardly-extending beveled ribs, formed at their upper edges, and the wedges being formed with suitable grooves for the reception of the said ribs, which coact with the wedges through the said grooves thereof in exerting a sustaining pressure upon the lower faces of the balls of the rail ends.

3. A rail-joint composed of a trussed housing, and two wedges, the housing having upon its opposite sides corresponding integral upwardly-extending flanges furnished at their upper edges with inwardly-extending beveled ribs, and the said flanges and wedges having their coacting surfaces beveled or inclined so as to exert inward and downward pressure upon the webs and bases of the rail ends, and sustaining upward pressure upon the lower faces of the balls of the rail ends.

4. A rail-joint wedge having its upper edge shod with a hard-metal shoe to resist the wearing of the motion of the abutting ends of the rails, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ELONZO STERNE WHEELER.

Witnesses:

WEBB VAN DYKE,
ROBINSON H. WHEELER.