

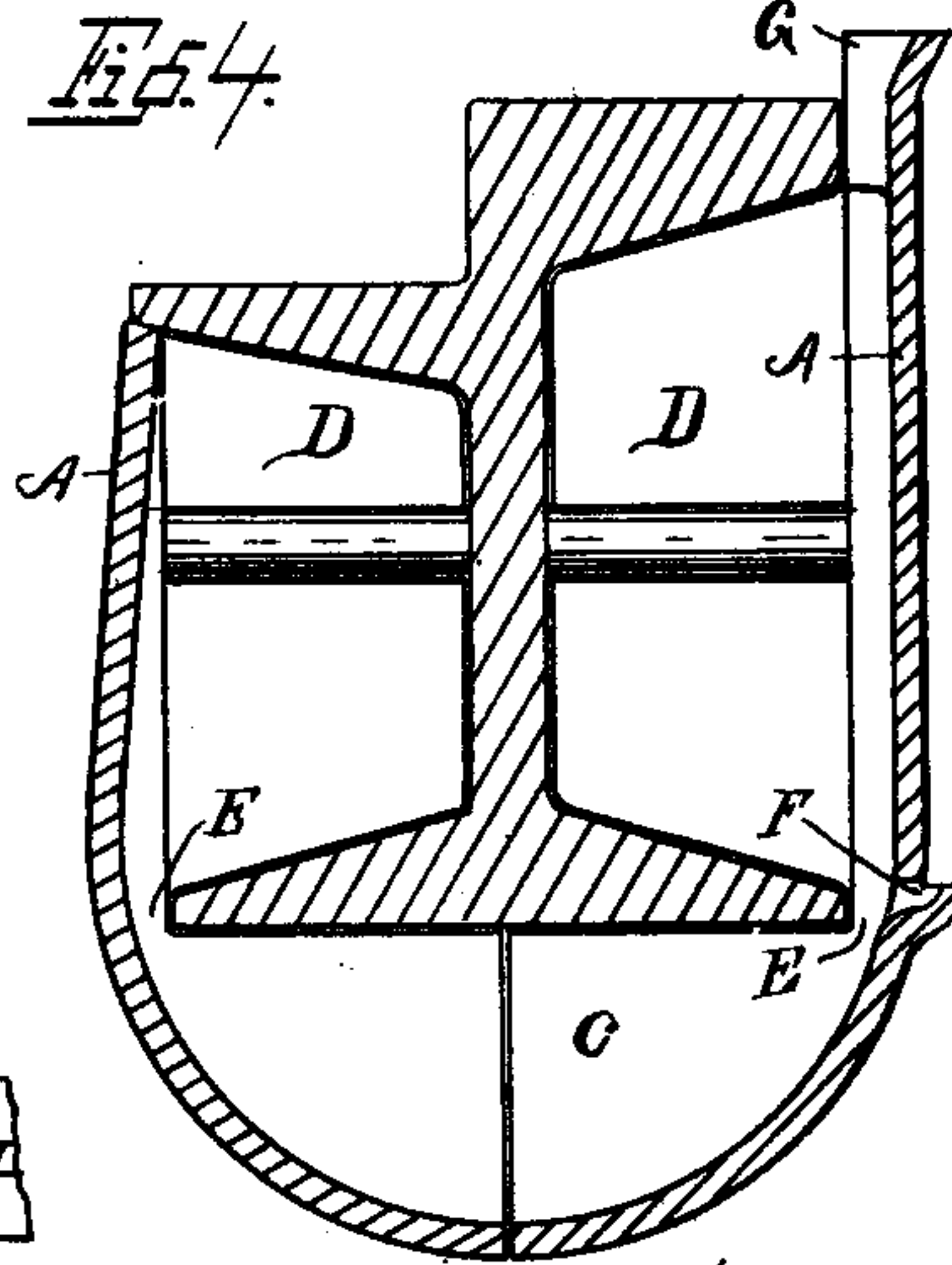
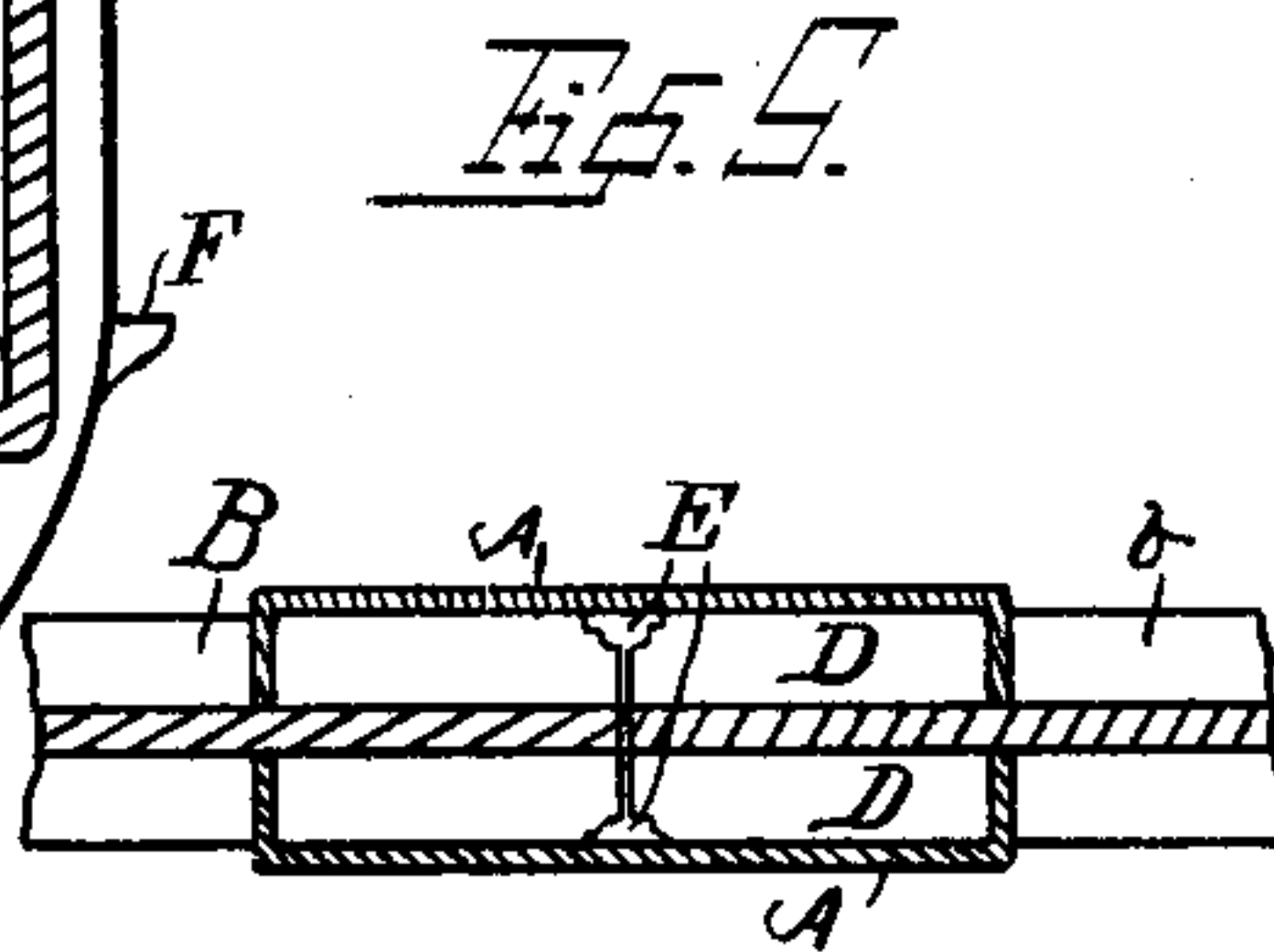
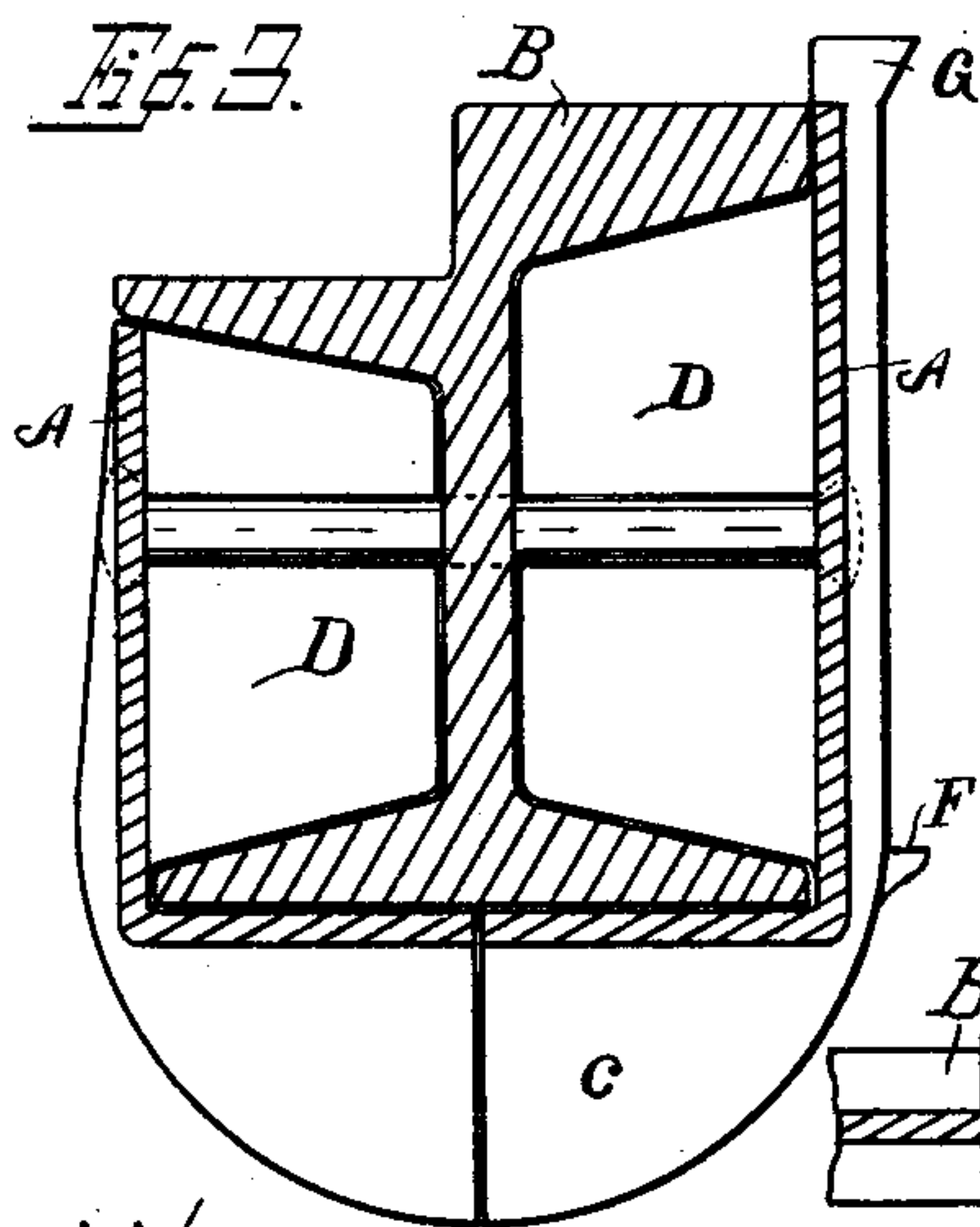
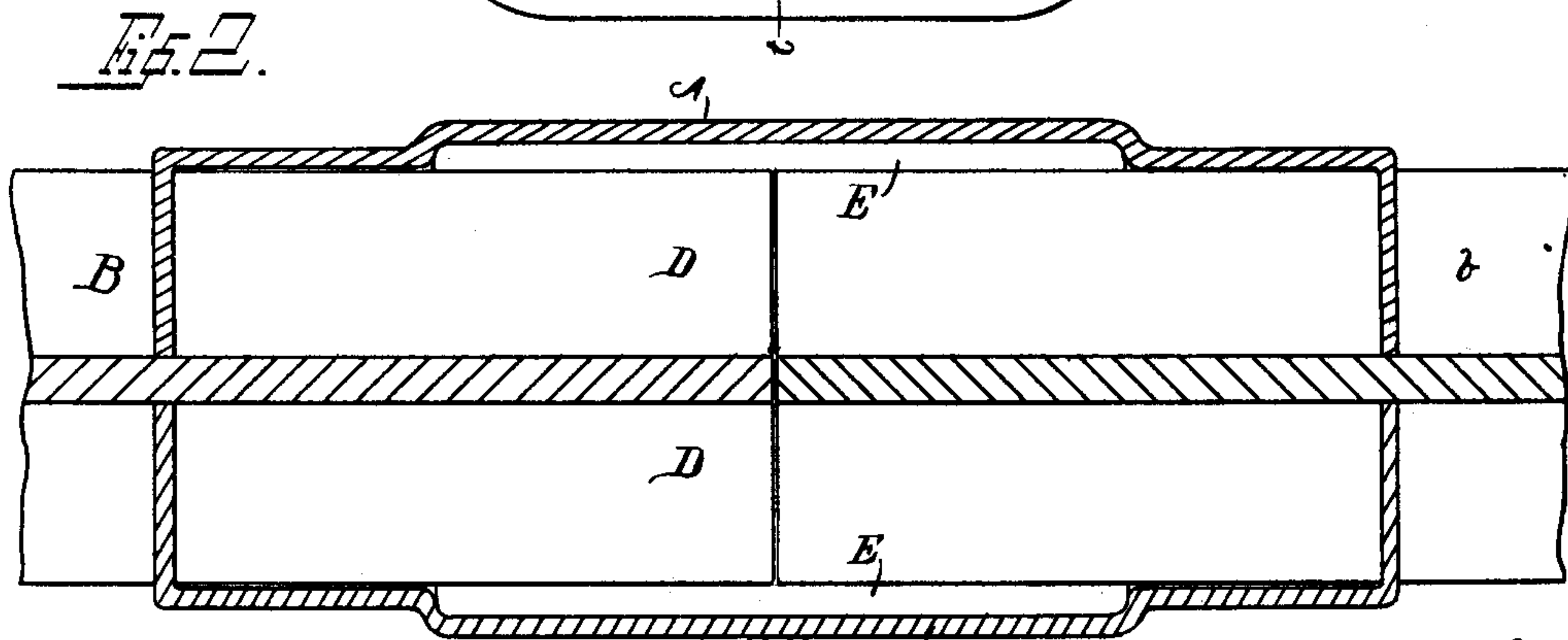
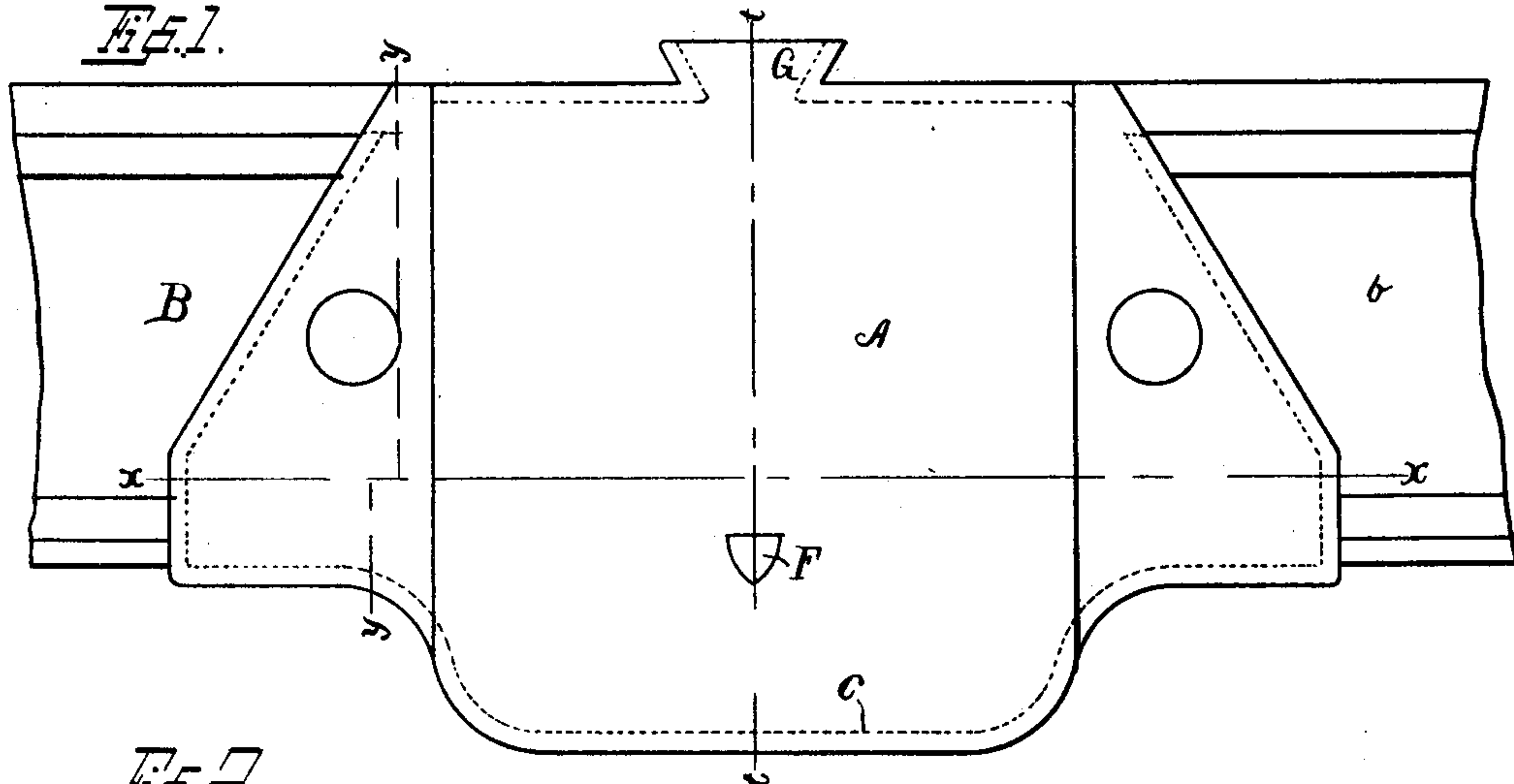
No. 675,869.

Patented June 4, 1901.

W. J. AUSTIN.
RAIL JOINT.

(Application filed Nov. 12, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM J. AUSTIN, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO PERMILLIA J. AUSTIN, OF SAME PLACE.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 675,869, dated June 4, 1901.

Original application filed November 26, 1898, Serial No. 697,490. Divided and this application filed November 12, 1900. Serial No. 36,210. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. AUSTIN, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

My invention relates to improvements in rail-joints, and pertains especially to that class of rail-joints the method of forming which is set forth and claimed in a former application, Serial No. 697,490, filed on the 26th day of November, 1898, and of which this application is a division.

The object of my invention is to provide a firm support or chair for the rail ends, which also serves as a union or coupling member, and which is integrally united with the ends of the rails by the fusion of a body of cast metal with the surfaces of the rails and coupling, the method of construction being such that the heating of the rail ends and jacket preparatory to the fusion of parts and the provision of the support result from the same action or step in the process of forming the joint.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a side view of my invention. Fig. 2 is a horizontal section drawn on line *xx* of Fig. 1. Figs. 3 and 4 are cross-section views drawn, respectively, on lines *yy* and *tt* of Fig. 1. Fig. 5 is a sectional view drawn on the same line as Fig. 2, but showing a slightly-modified form of construction.

Like parts are identified by the same reference-letters throughout the several views.

The sleeve-coupling member A is formed either integrally or in sections, and its interior surface is of such shape that when adjusted to the abutting ends B B of the rails it forms a chamber or cavity C underneath the ends of the rails and the chambers or cavities D at the sides between the webs of the rails, their heads, and base-flanges, and the walls of the sleeve. The sleeve is also preferably so formed as to leave an opening E, Figs. 2 and 3, between the edges of the base-flanges and the interior walls of the sleeve for the passage of the molten metal into the cham-

ber below, although, if desired, this may be accomplished by providing holes through the base-flanges of the rails or between the rail ends. Such openings may easily be formed by breaking off one corner of the base-flange of the rails, Fig. 5. A small opening F is also provided in the wall of the sleeve at or near the top of the base-cavity C, through which the molten metal may flow, and thus indicate when such cavity is filled.

The method of forming the joint is as follows: The rail ends are thoroughly cleaned and the sleeve or coupling member adjusted thereon, the parts of the sleeve being secured together by suitable bolts where the sleeve is formed in sections. Molten metal is then poured into the interior of the sleeve through a sprue-hole C until the base-cavity is filled, as indicated by the metal appearing in the opening F. The pouring is then stopped for a short interval until the rail ends and sleeve are thoroughly dried and heated, and the pouring is then recommenced to fill the side cavities D, suitable openings being preferably made in the webs of the rails for the passage of the metal, so that both of the side cavities may be filled through a single sprue-hole. The rail ends and sleeve or coupling are sufficiently heated by radiation from the metal filling the base-cavity C, so that the metal subsequently poured into the side cavities D readily fuses both with the rail-surfaces and with the interior surfaces of the sleeve or coupling, thus integrally uniting the parts. The metal filling the base-cavity C also forms an exceedingly strong and firm support for the ends of the rails. If it is desired to cause the filling of this cavity to also fuse to the surfaces with which it comes in contact, this may of course be accomplished by a preliminary heating or in any other manner known to the art.

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

1. A rail-joint, comprising the meeting ends of rails; a sleeve or coupling formed to embrace the webs and base-flanges of the rail ends, with a space or cavity at the sides of the webs and under the base-flanges; and a

filling of cast metal for said cavities, fused to the walls of one or more of such cavities, and uniting the parts integrally.

2. A rail-joint, comprising the meeting ends
5 of rails; a sleeve or coupling adjusted there-
to; and a cast-metal filling interposed between
the inclosed rail-surfaces and the sleeve or
coupling, both above and below the base-
flanges of the rails, said filling being fused
10 to a portion of the rail and coupling-surfaces.

3. A rail-joint, comprising the meeting ends

of rails; a sleeve or coupling adapted to form
cavities at the sides of the webs and under
the base-flanges of the rails; and a filling of
cast metal fused to the walls of one or more 15
of said cavities.

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

WILLIAM J. AUSTIN.

Witnesses:

JAS. B. ERWIN,

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