

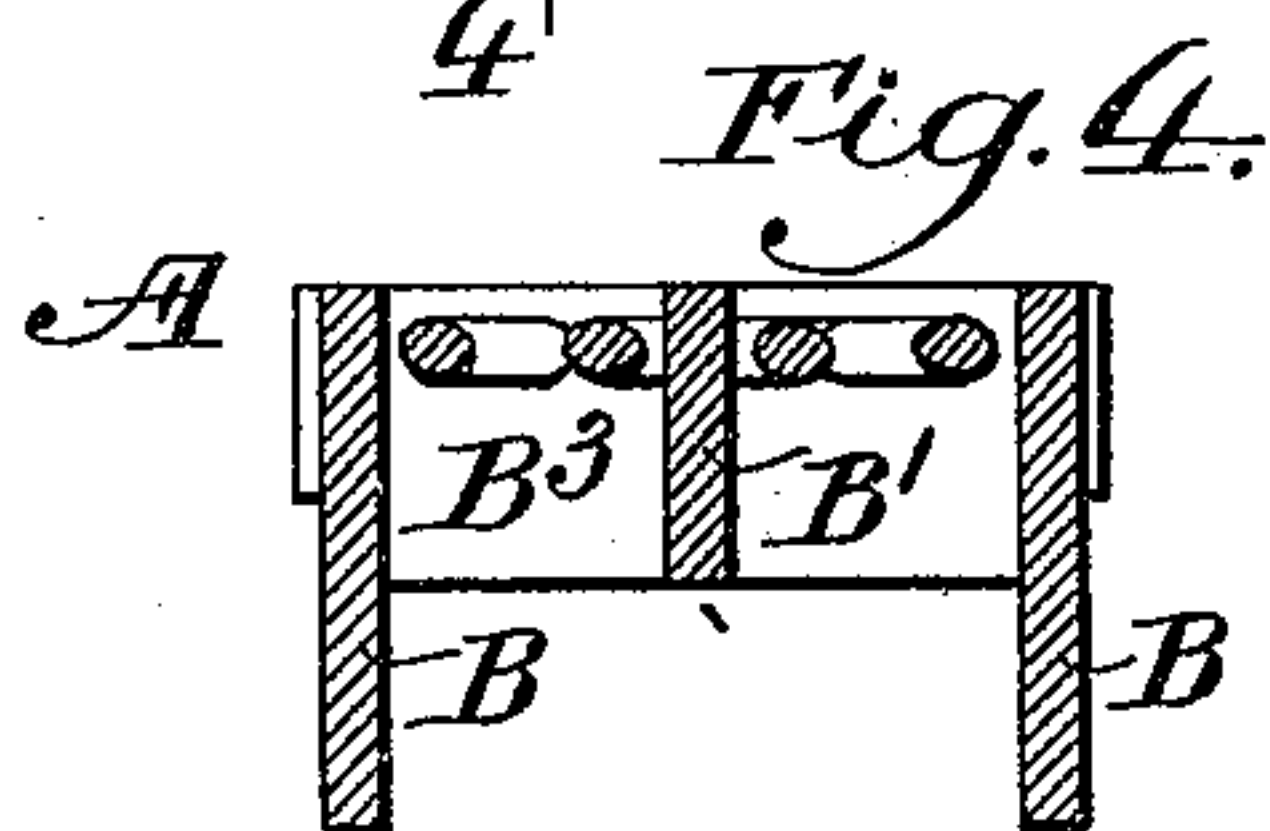
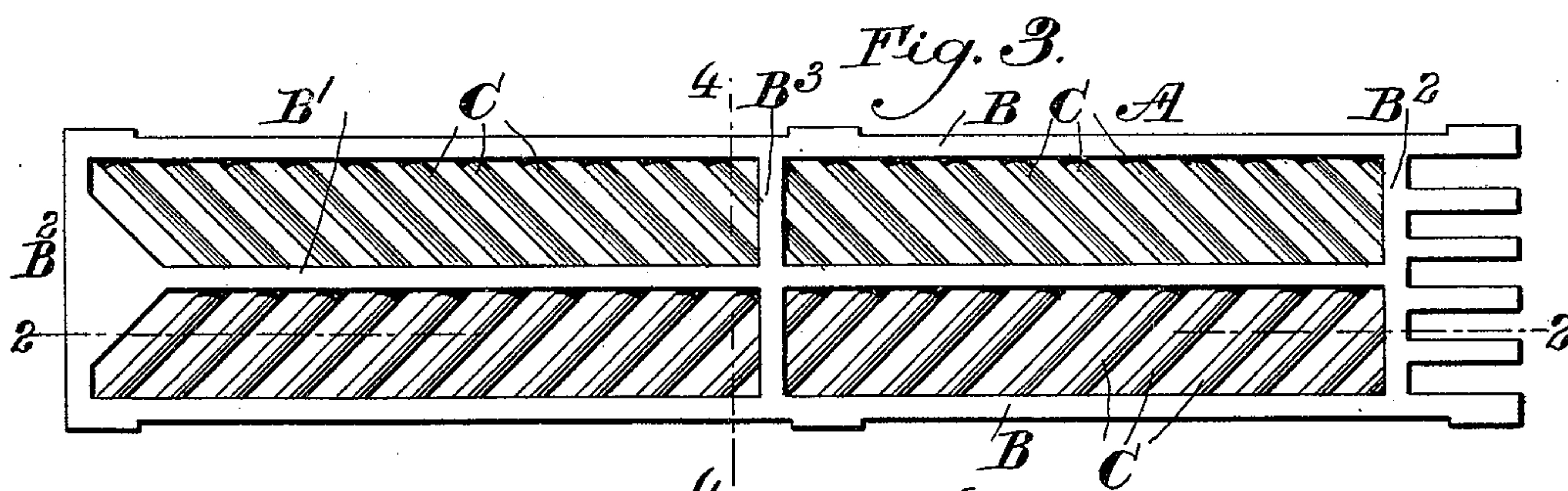
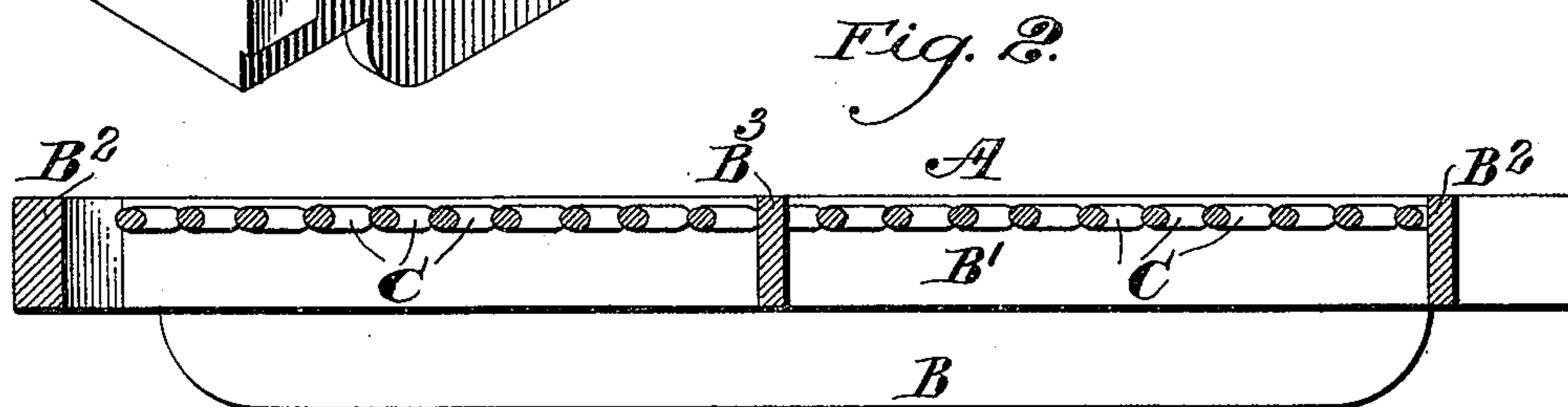
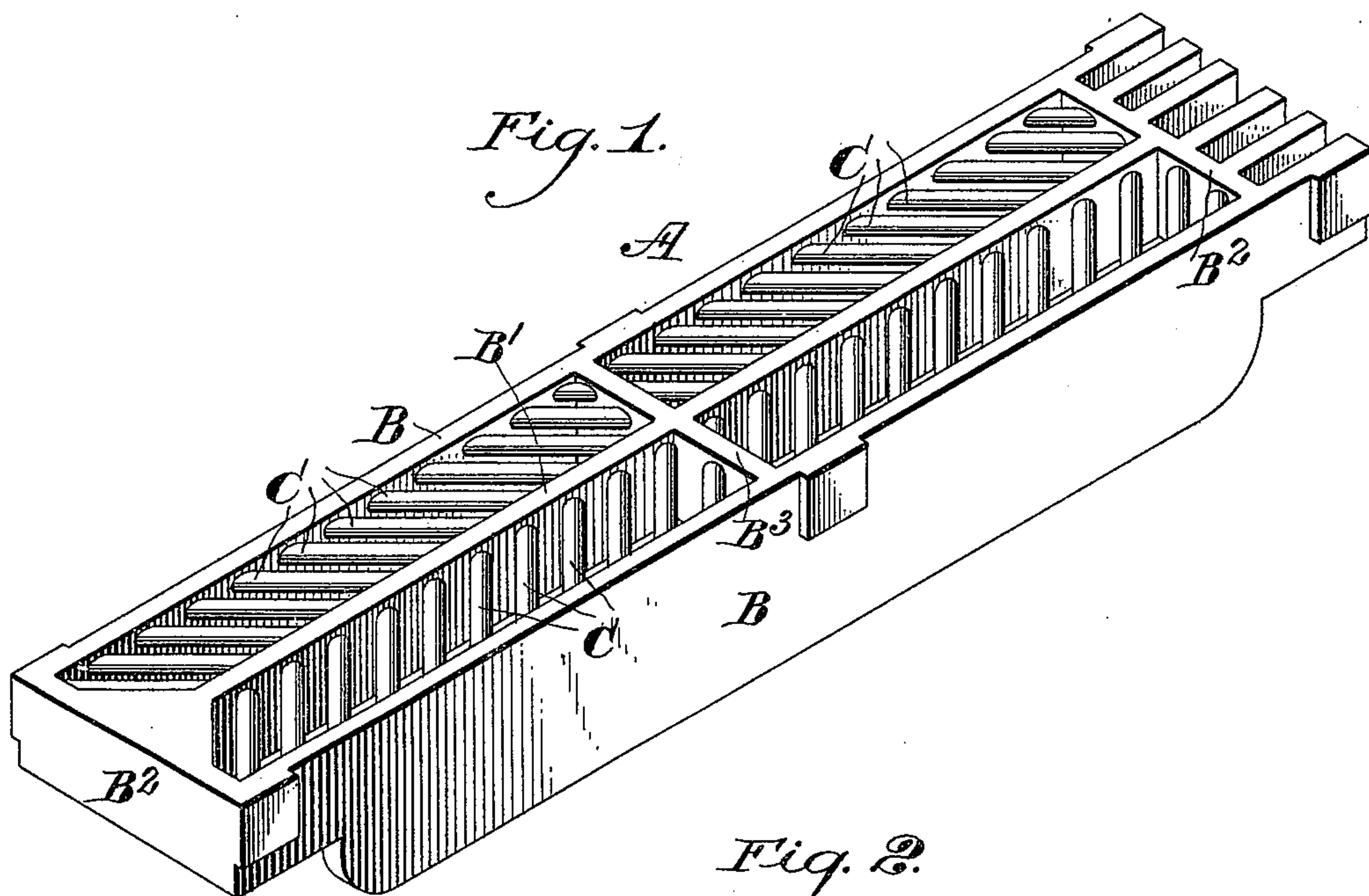
No. 641,948.

Patented Jan. 23, 1900.

H. E. FRICK.
GRATE BAR.

(Application filed June 29, 1899.)

(No Model.)



Witnesses:
Harry Denny
J. Stewart

Inventor:
Horace E. Frick
by his atty.
Francis J. Chambers

UNITED STATES PATENT OFFICE.

HORACE E. FRICK, OF PHILADELPHIA, PENNSYLVANIA.

GRATE-BAR.

SPECIFICATION forming part of Letters Patent No. 641,948, dated January 23, 1900.

Application filed June 29, 1899. Serial No. 722,230. (No model.)

To all whom it may concern:

Be it known that I, HORACE E. FRICK, a citizen of the United States of America, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Grate-Bars, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to the construction of grate-bars, and has for its object to provide a grate-bar of simple and durable construction and in which provision is made for bringing the air into contact with the fuel as promptly and with as little resistance as possible, my grate-bar being one also which is readily cleared of clinker.

The nature of my improvements will be best understood as described in connection with the drawings, in which they are illustrated, and in which—

Figure 1 is a perspective view of a grate-bar embodying my improvement in what I believe to be its best form. Fig. 2 is a longitudinal section through the grate-bar, taken as on the line 2 2 of Fig. 3. Fig. 3 is a plan view of the grate-bar, and Fig. 4 a cross-section taken as on the line 4 4 of Fig. 3.

My improved grate-bar consists of a composite structure of cast-metal and wrought-iron bars incorporated together in the process of casting. The essential cast-iron parts consist of the walls or edges of the grate-bar, the lateral walls being indicated at B B and end walls at B² B². Preferably I provide a central longitudinal web of cast-iron, as indicated at B', and where the sectional bars are long it is advisable to strengthen the cast-iron walls by a cross-piece of cast-iron, as indicated at B³. The cast-iron walls are relatively narrow and deep and are relied upon entirely for the stiffness and strength of the grate-bar. The fuel-supporting surface of the bar is made up of a series of wrought-iron bars (indicated at C C C, &c.) and preferably of circular section. These bars are arranged parallel to each other and at an acute angle to the central line of

the grate-bar. Preferably also they are set close to but somewhat below the top edges of the cast-iron sides, as indicated in the drawings, so as to be out of the way of the slice-bar, but sufficiently close to its edges as it works over the top of the cast-iron sides to have any clinker resting on the surface of the wrought-iron bars or wires cut away and removed. Where, as in my preferred construction, a central web, as B', is formed as a part of the casting, I prefer to arrange the wrought-iron bars in two sets, one on each side of the web, the bars of each side running parallel to each other and at an angle to the line of the bars in the other side.

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

1. A grate-bar having deep side walls of cast-iron and a central web of cast-iron running parallel to the side walls, a center formed of relatively-thin wrought-iron bars made up of parallel wrought-iron bars cast into the side walls, and the central web, respectively.

2. A grate-bar having deep walls of cast-iron and a center formed of relatively-thin wrought-iron bars set slightly below the top edges of the cast-iron walls parallel to each other in one or more rows and all running at an acute angle to the center line of the grate-bar said wrought-iron bars having their ends incorporated into the cast-iron walls in the process of casting.

3. A grate-bar having deep walls and a central web running parallel to the side walls all of cast-iron and a center formed of relatively-thin wrought-iron bars set slightly below the top edges of the walls and web in two rows, each row made up of parallel wrought-iron bars having their ends cast into a wall and the central web respectively and the bars in each row being set at an acute angle to the center line of the grate-bar and at an acute angle to the bars in the other row.

HORACE E. FRICK.

Witnesses:

CHAS. F. MYERS,
D. STEWART.