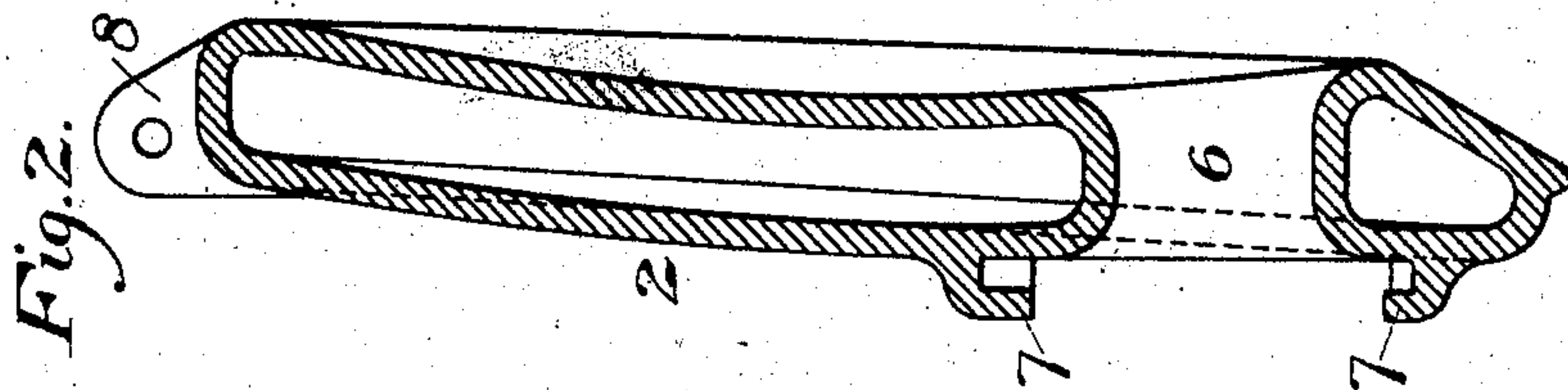
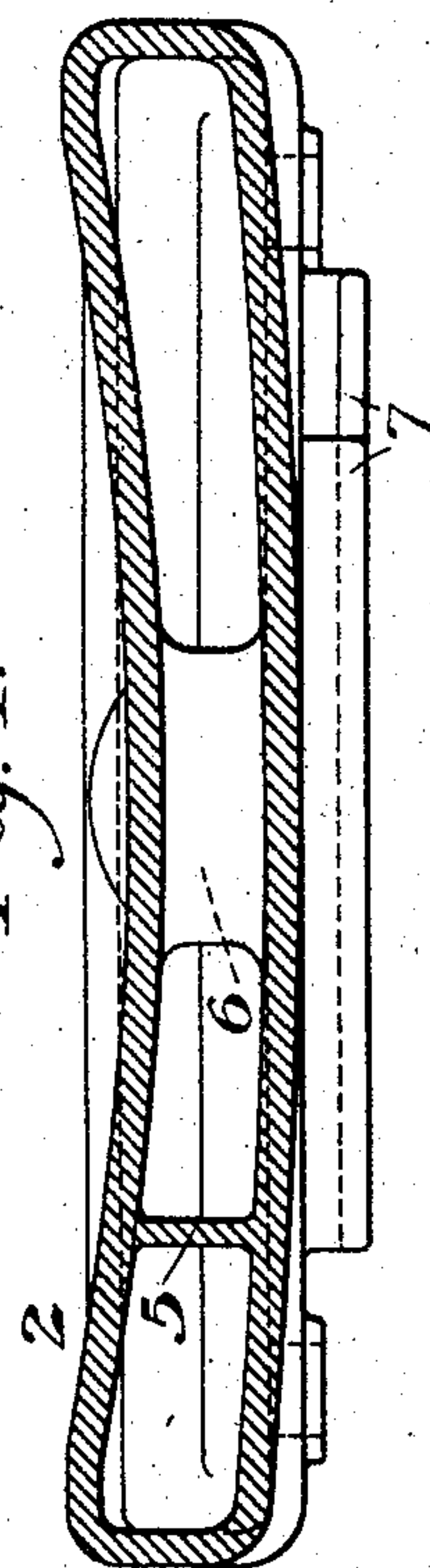
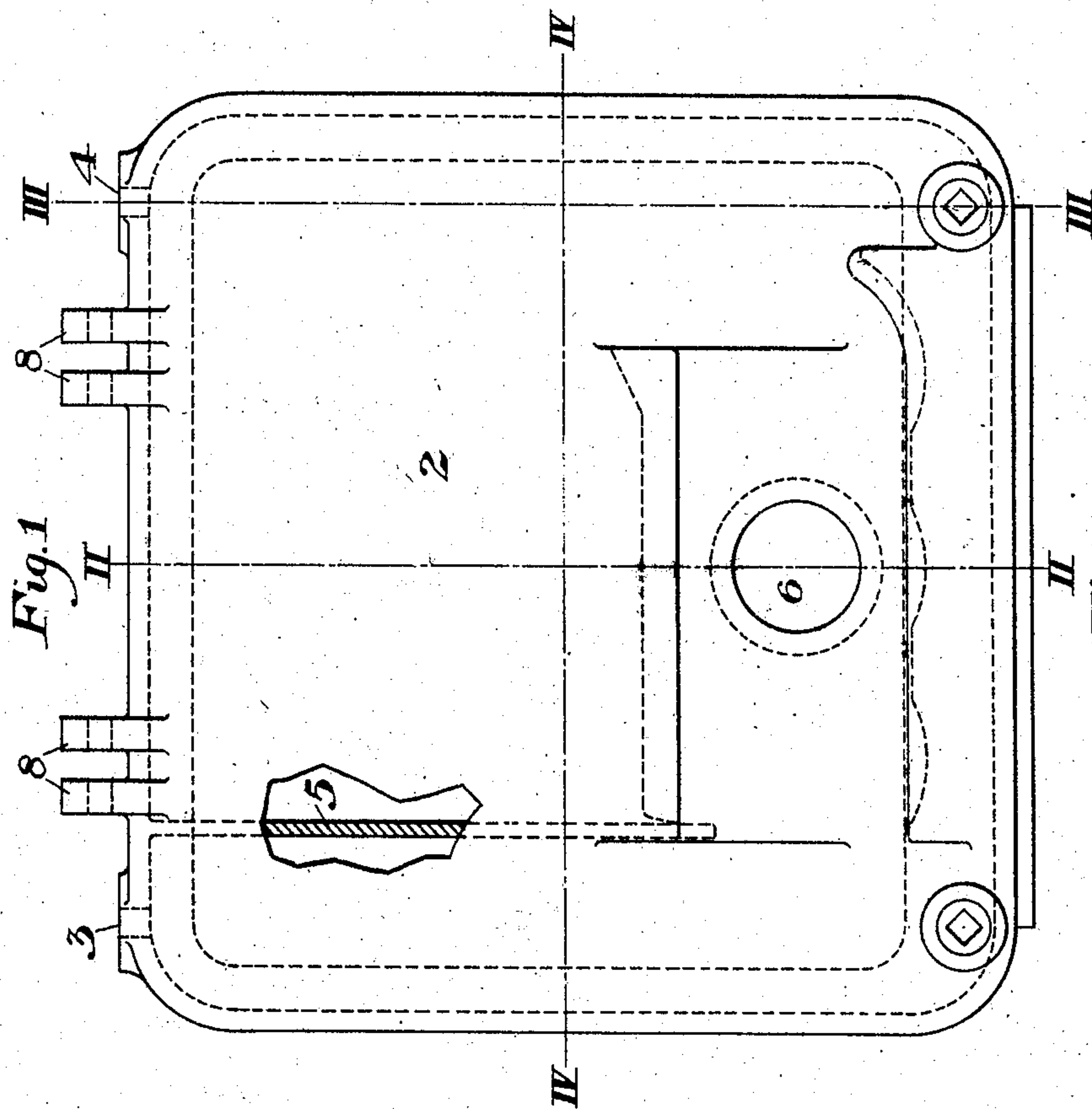
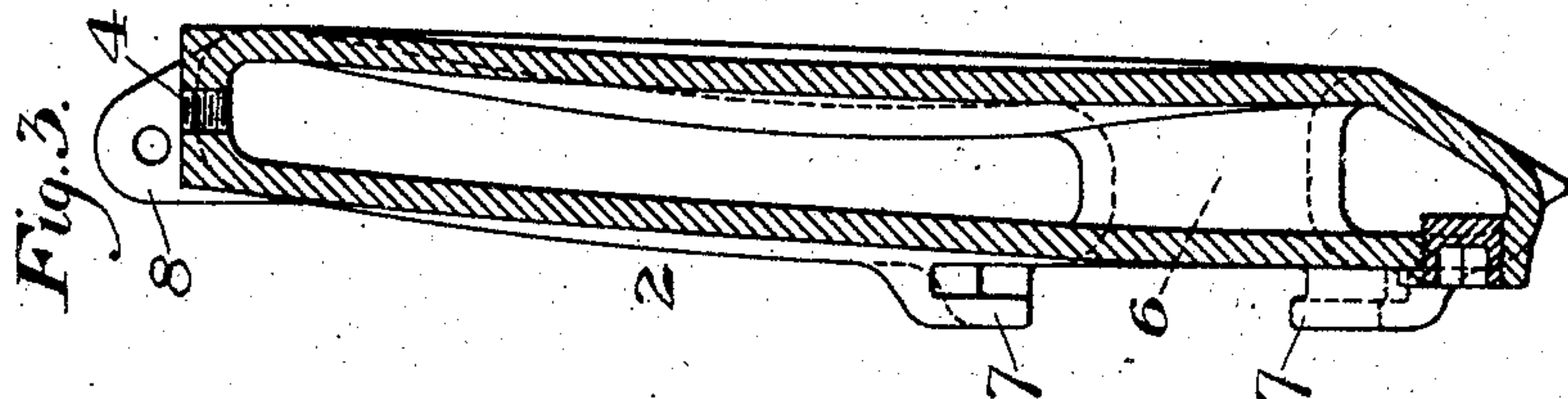


No. 786,851.

PATENTED APR. 11, 1905.

E. E. SLICK.
FURNACE DOOR.

APPLICATION FILED JULY 29, 1904.



WITNESSES

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EDWIN E. SLICK, OF PITTSBURG, PENNSYLVANIA.

FURNACE-DOOR.

SPECIFICATION forming part of Letters Patent No. 786,851, dated April 11, 1905.

Application filed July 29, 1904. Serial No. 218,623.

To all whom it may concern:

Be it known that I, EDWIN E. SLICK, of Pittsburgh, Allegheny county, Pennsylvania, have invented a new and useful Furnace-Door, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of my improved door. Fig. 2 is a vertical section of the door on the line II II of Fig. 1. Fig. 3 is a vertical section on the line III III of Fig. 1; and Fig. 4 is a horizontal section of the door through the line IV IV of Fig. 1, showing the partition in the water-space in the door.

My invention relates to water-cooled doors for open-hearth or similar furnaces in which the temperature of the furnace is raised to and kept at a very intense heat.

The object of my invention is to construct a furnace-door which is kept cool by means of water constantly circulating through it, and to provide a door in which it is unnecessary to employ a fire-brick lining of the surface exposed to the heat and flame of the furnace, such as have been usually employed in doors of this class.

It also consists in so constructing the door as to prevent its warping by the great heat to which its inner surface is exposed and in this way greatly increasing the life of the door.

As is shown in the drawings, the door consists of a hollow casting 2, having its inner surface concave and its outer surface convex in both a vertical and horizontal cross-section and in having a substantially flat surface where the rim or edge of the door will come in contact with the door-frame.

Openings 3 4 are tapped in the top edge of the door for suitable pipe connections, which form the inlet and outlet for the circulating water constantly supplied to the door to keep

it cool. By means of a partition 5 the entering cold water is deflected and caused to flow to the bottom of the door, and in this way cold water is supplied to the lower portion of the door and a circulation throughout the door is insured.

In the center of its width the door is provided with an opening or peep-hole through which the interior of the furnace may be seen without lifting the door in its frame.

Cast on the outer surface of the door, above and below the peep-hole 6, are guides 7 7, in which a circular peep-hole cover runs. Suitable lugs 8 8 are cast on the top of the door, by which the doors are suspended in position on the furnaces and by which they are elevated as required.

The advantages of my invention will be appreciated by those skilled in the art. No brickwork being used in lining the door, the great trouble and expense of providing and maintaining such lining is avoided. By thoroughly water-cooling the door its life is greatly increased, while the peculiar construction of the door prevents its being warped and distorted by the heat.

Many changes in the details of the construction of the doors may be made without departing from my invention, since

What I claim is—

A sliding furnace-door consisting of a hollow water-cooled casting having an inner surface concave both horizontally and vertically, and an outer surface convex both horizontally and vertically; substantially as described.

In testimony whereof I have hereunto set my hand.

EDWIN E. SLICK.

Witnesses:

F. H. MOYER,

GEO. B. BLEMING.