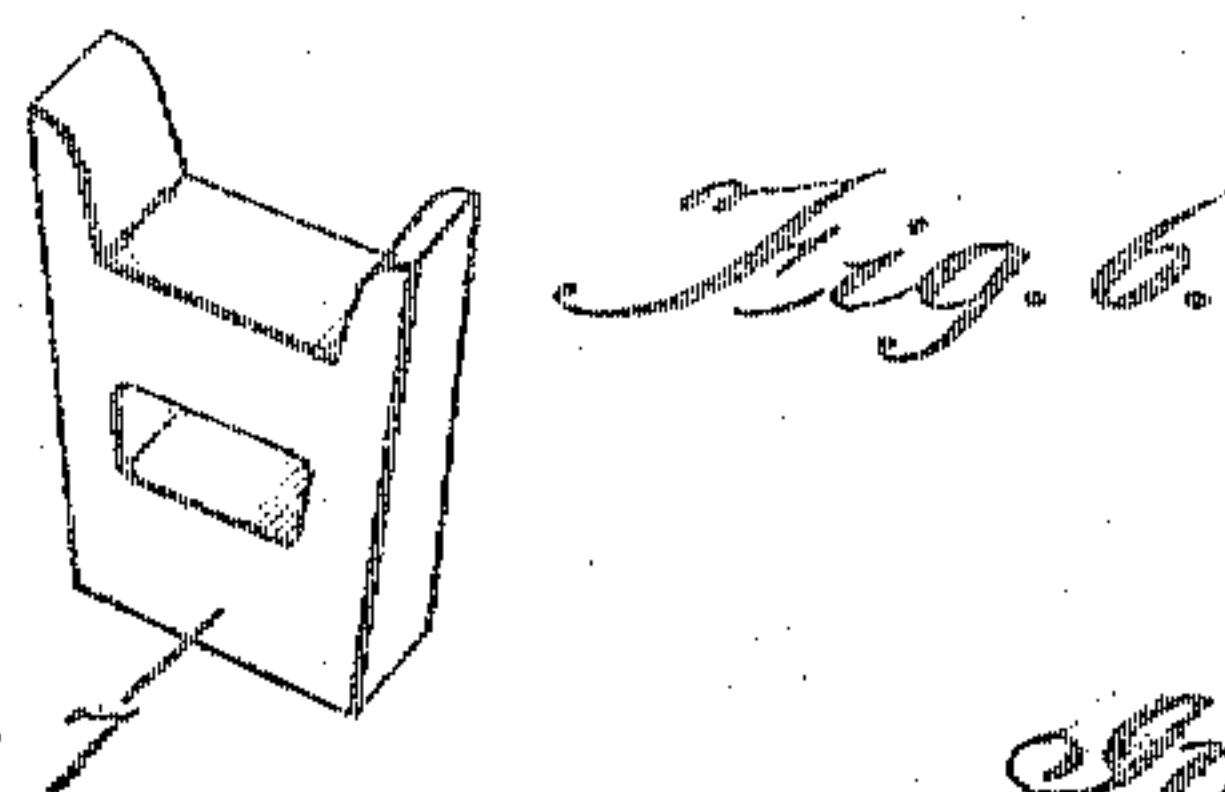
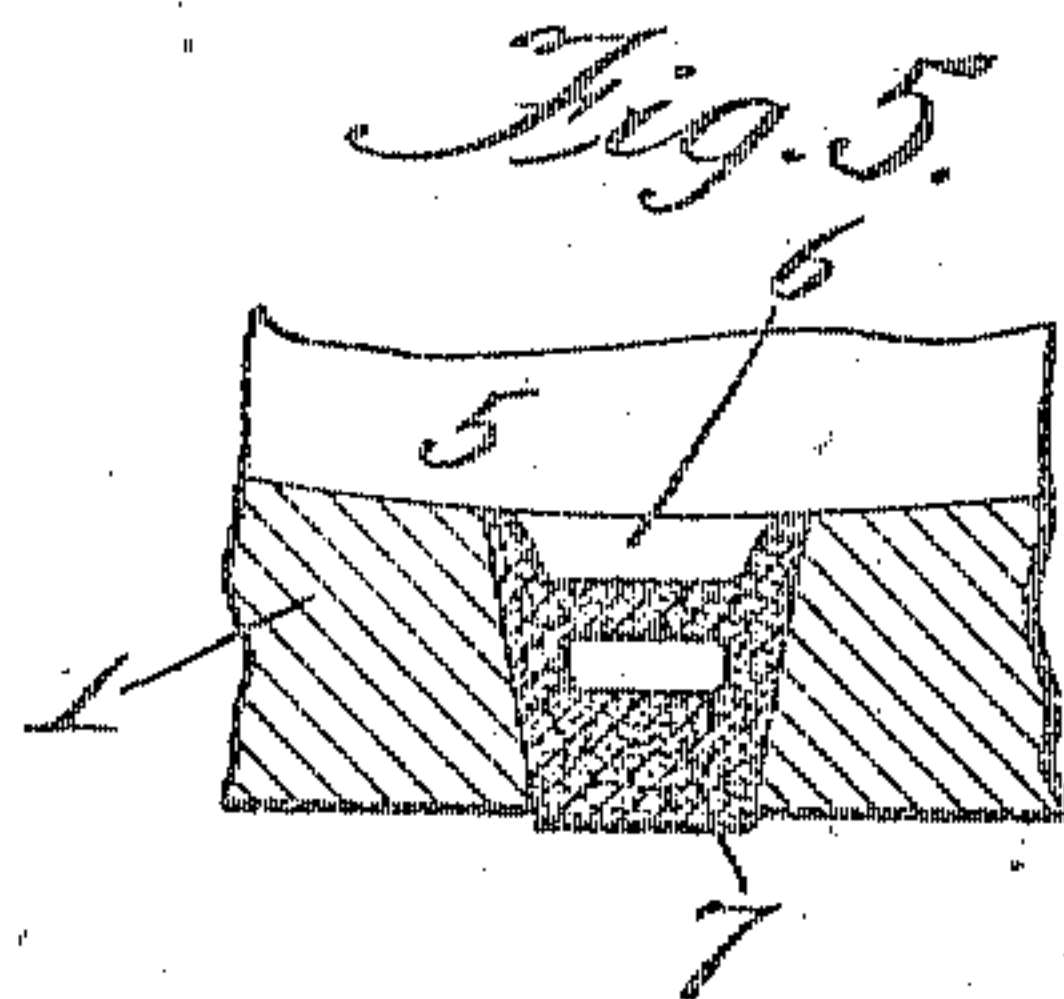
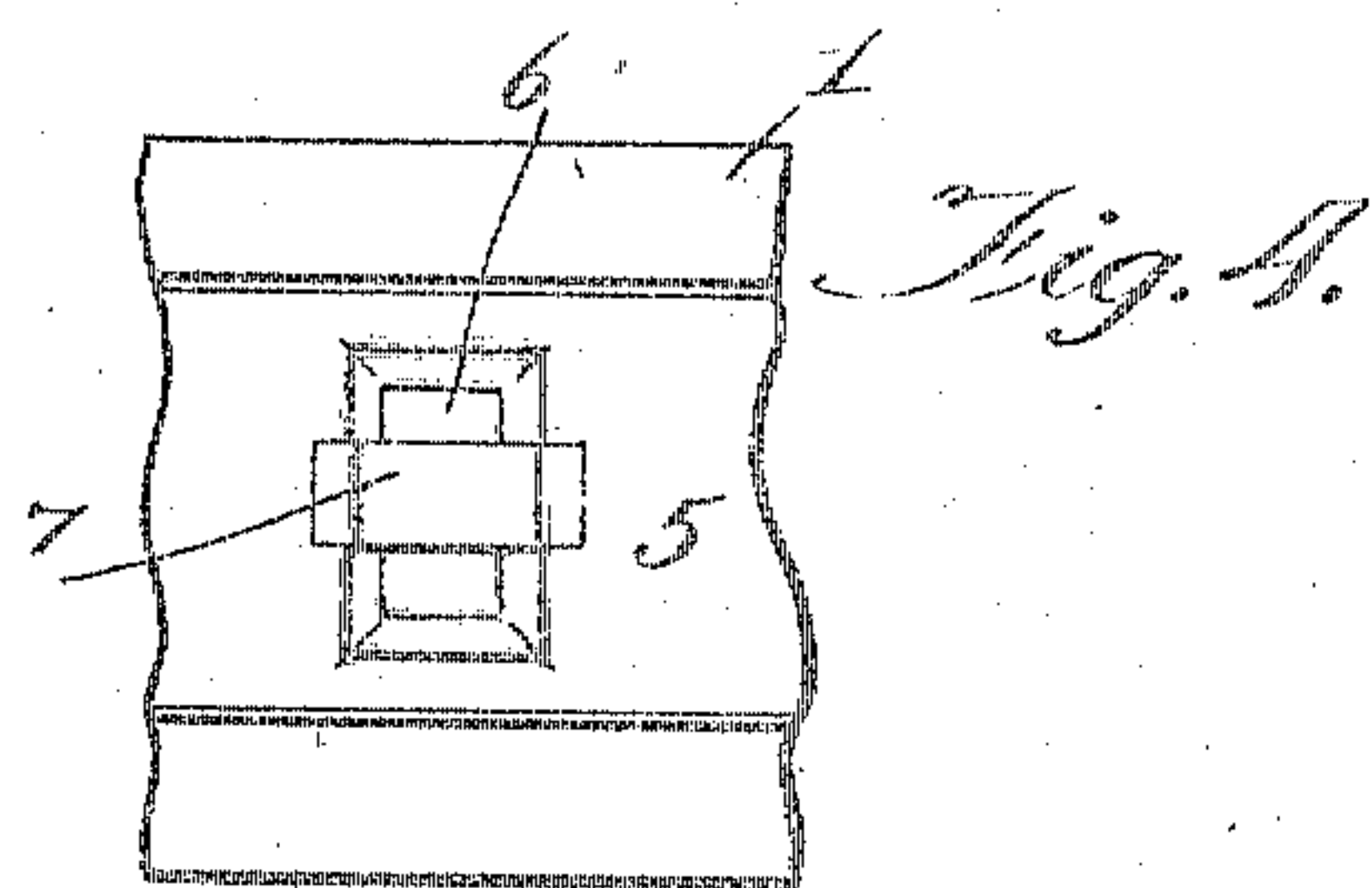
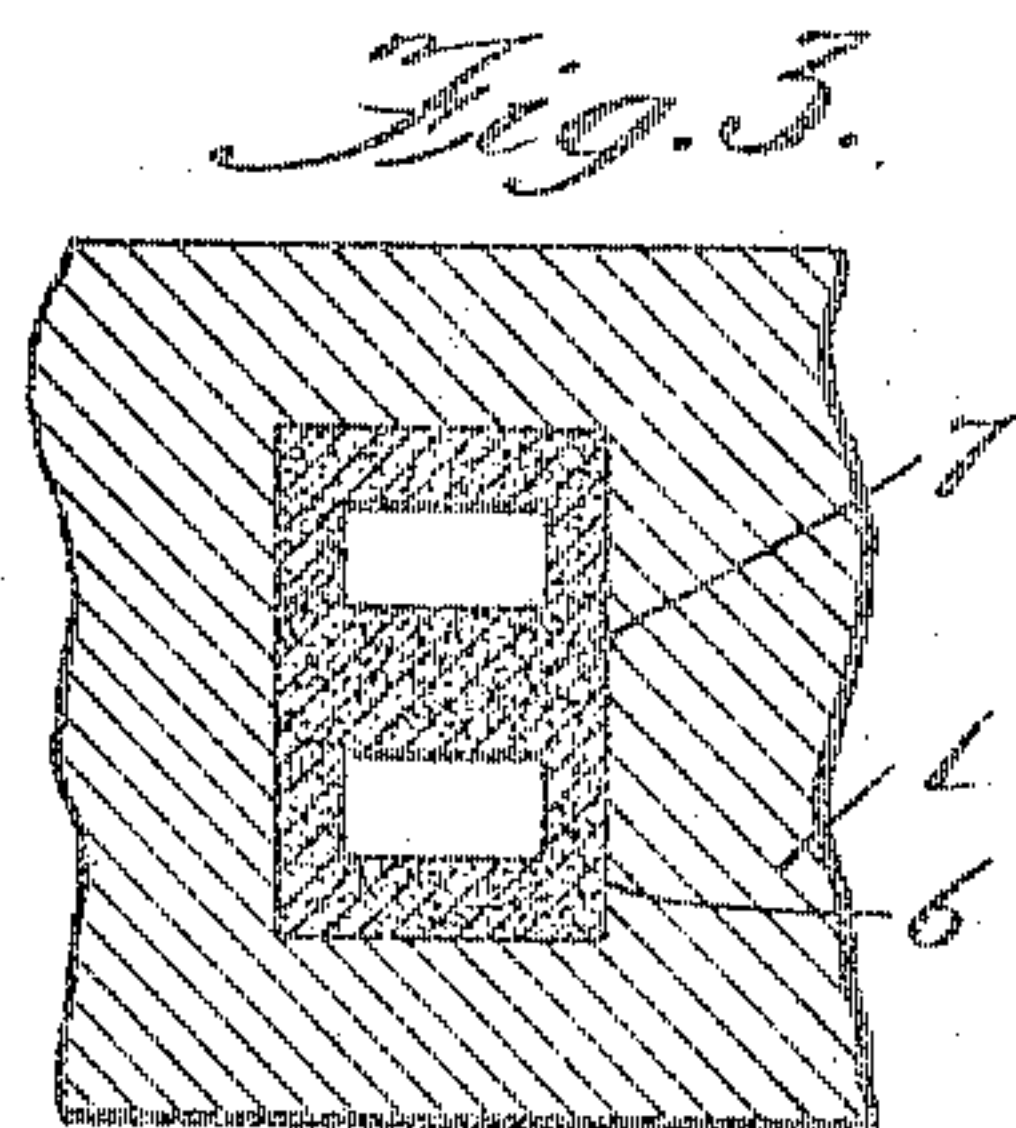
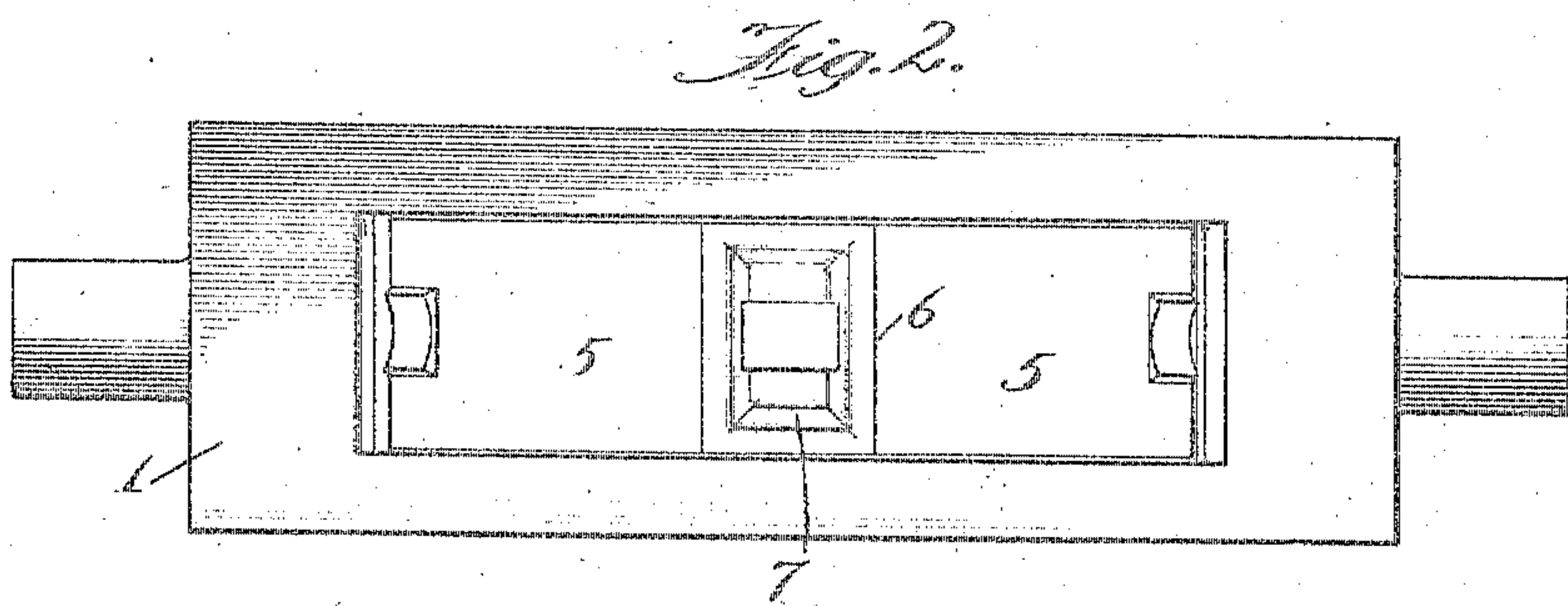
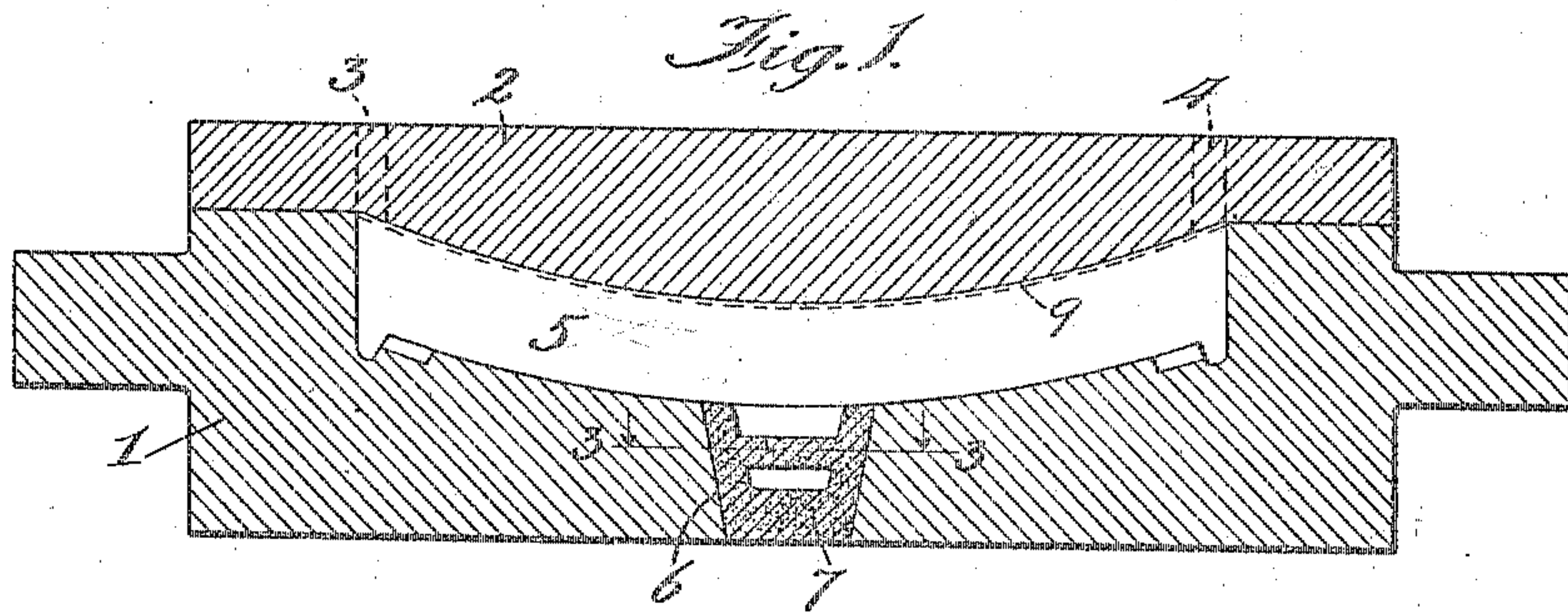


C. B. CARTER.
MOLD FOR BRAKE SHOES.
APPLICATION FILED NOV. 19, 1908.

965,869.

Patented Aug. 2, 1910.



Witnesses:
Edwin L. Yewell
M. Bridge

Inventor:
Charles B. Carter
Davis Davis,
Atty.

UNITED STATES PATENT OFFICE.

CHARLES B. CARTER, OF CHICAGO, ILLINOIS.

MOLD FOR BRAKE-SHOES.

965,869.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed November 19, 1908. Serial No. 463,468.

To all whom it may concern:

Be it known that I, CHARLES B. CARTER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Molds for Brake-Shoes, of which the following is a specification.

My invention relates to molds for brake shoes, and contemplates the casting of the shoe in a mold having a permanent body provided with an opening leading through its wall at a point corresponding in position to the attaching lug of the shoe, and having a porous core inserted in this opening to complete the mold at this point and to serve as a vent for the mold by reason of its porosity. In this manner I am able to obviate the greatest difficulty which has heretofore been met with in casting brake shoes in a permanent mold or chill, and which has resulted in the present almost exclusive practice of casting these articles in green sand, notwithstanding that the vast number of such shoes required for the daily use of the railroads, and the fact that they are for the most part exact duplicates of each other, naturally lends itself to more improved methods of molding.

Green sand castings for brake shoes not only involve an excessive cost in the production of the molds, but are so rough that more or less chipping and tumbling is ordinarily found to be imperative. Whereas, by my improvement, the molding cost of producing the shoes is not only greatly reduced, but I am enabled to turn the shoes out of the mold in such perfect condition that they are practically ready for market without any further finishing, even in a rattling barrel.

In the accompanying drawing illustrating a mold embodying my invention in one form—Figure 1 is a longitudinal section taken on the line 1—1 of Fig. 2, of a mold embodying my invention in one form. Fig. 2 is a top plan view of the body of the mold with the cover removed. Fig. 3 is a sectional detail, taken on line 3—3 of Fig. 1. Fig. 4 is a fragmentary plan detail showing a modified shape of lug forming recess adapted for receiving a slightly different form of venting core. Fig. 5 is a fragmentary detail in side elevation showing this modified form of core in place in the mold. Fig. 6 is a perspective detail of the modified form of core.

In said drawings, 1 designates the permanent body of the mold, ordinarily made of cast iron, and 2 its cope or cover. This latter may also be made in whole or in part, of metal, or may be made of fire brick, or of sand, for example, of dry sand baked in the manner usually followed in making cores.

The mold will preferably be parted in the way indicated in Fig. 1, and may be placed either side up, i. e., with the cope uppermost, as the drawing shows, or with the body of the mold uppermost, if this latter positioning be deemed more desirable for pouring. If the mold is to be placed with its body portion lowermost, as herein illustrated, the cope will be provided with suitable openings 3 and 4, either of which may be used as a gate, while the other serves as a riser. If the mold is to be placed in an inverted position, or with the cope lowermost, these openings will of course be formed in the body of the mold. In either case, the mold will, in accordance with this improvement, be provided midway of its length and on the convex side of its main cavity 5 in which the shoe is formed, with an opening 6 which extends through the body of the mold to the outer air. This opening is closed, when the mold is prepared for pouring, by a porous core 7, which completes the mold at this point and coöperates in the formation of the fastening lug on the back of the shoe, and of the slot which is formed in this lug for the reception of the fastening key.

Preferably the core will be made in the usual manner from dry sand, baked in an oven, and in the construction illustrated in Figs. 1, 2 and 3, it will entirely surround the lug, except where the latter joins the body of the shoe, the lug thus being, as it were, cast within the core. Or the modified construction shown in Figs. 4, 5 and 6 may be used, in which the lug is largely formed by the metal walls of the mold, the core serving to form the slot for the locking key. In any case it will be understood that the core not only serves the purpose of completing the mold at the point where the lug of the shoe is located, but also serves to vent the mold at this point, the porosity of the material of which the core is made being great enough to permit the escape of the air and gas which would otherwise be trapped here and cause the casting to be im-

perfect. It will be understood that the core will act in this manner, whether the mold is poured with the one side up or the other. Brake shoes cast in a mold thus constructed need no finishing, but are practically ready for use as soon as they are cool, it being only necessary to knock off the sprues and load them for delivery.

In casting brake shoes with a steel back, like those frequently used for the drive wheels of locomotives and in which the lug of the brake shoe is formed by a part of the steel back of the shoe, the core will be used to prevent the steel lug from becoming embedded in the molten metal, but will otherwise act as already described, *i. e.*, to complete the mold at the opening and afford vent at the point where the fastening lug of the shoe is located. Hard metal inserts for the face of the shoe may also be accommodated in this form of mold, substantially as in molds of green sand.

In case a metal cope is used, and the chilling effect on the face of the shoe is found to be too great, a layer 9 of non-conducting material may be spread over the inner surface of the cope as a facing to counteract its chilling action.

I claim:—

1. A mold for brake shoes comprising a permanent body portion and shaped internally to conform to the shape of the body of the shoe, and provided with a sprue-hole and with an opening leading through the wall of the mold at a point corresponding in position to the attaching lug of the shoe, and a porous plug inserted in said opening to complete the mold at this point and serve as a vent therefor, substantially as described.

2. A mold for brake shoes comprising a metal body 1 and a cope 2, said body being formed with an interior cavity 5 of the shape of the body of the shoe, and with a sprue-hole and also with an opening 6 leading out from said cavity at the back of the shoe, and a porous solid plug 7 located in said opening and venting the mold, substantially as described.

In testimony, that I claim the foregoing as my invention, I affix my signature in presence of two subscribing witnesses, this 16th day of November, A. D. 1908.

CHARLES B. CARTER.

Witnesses:

G. M. ELLINGEN,
K. A. COSTELLO.