

(No Model.)

J. GRAHAM.
JOURNAL BEARING.

No. 309,386.

Patented Dec. 16, 1884.

Fig. 1

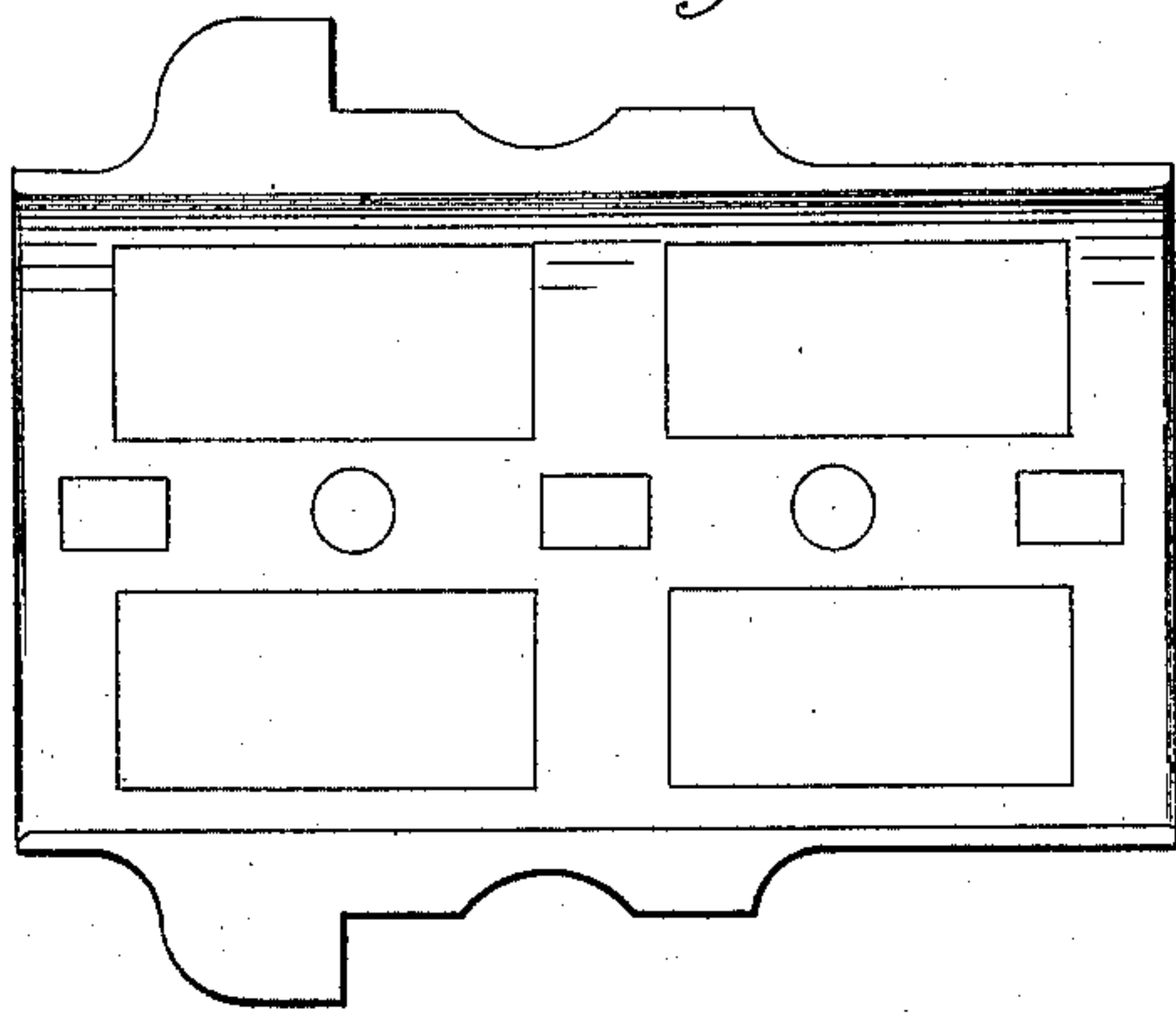


Fig. 2

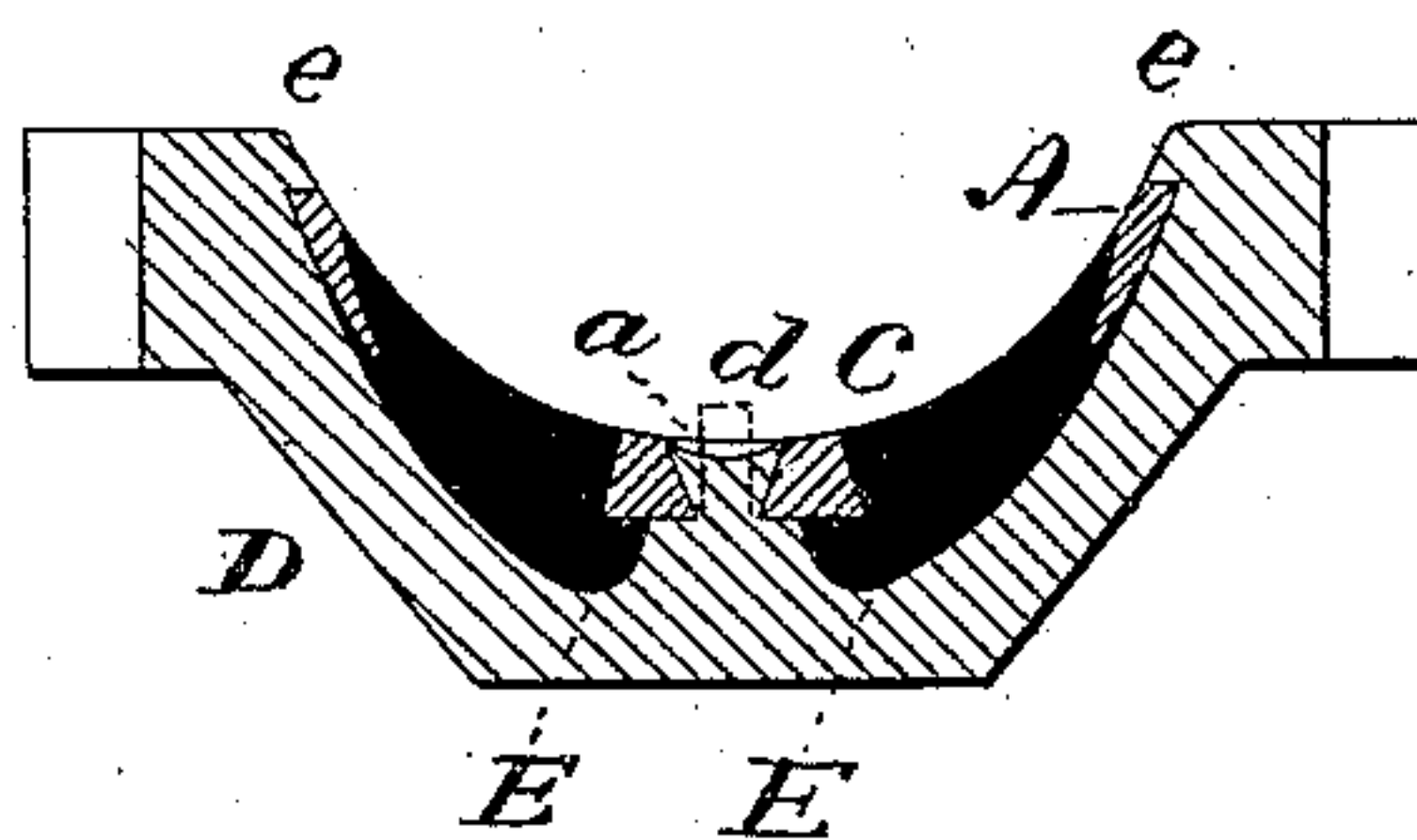
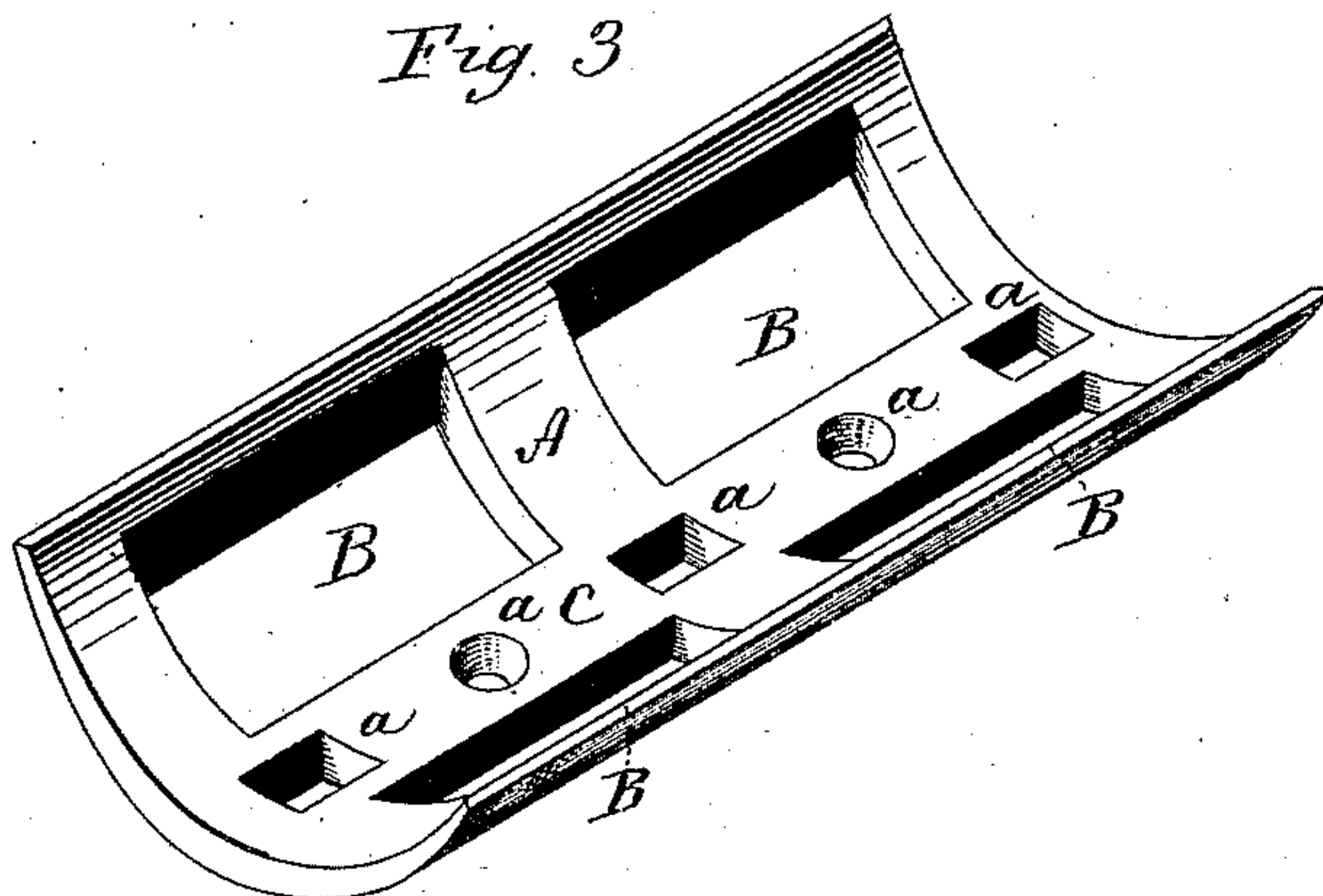


Fig. 3



Witnesses.
J. H. Shumway
L. C. Carle

James Graham
By Atty. Inventor
O. M. Paul

UNITED STATES PATENT OFFICE.

JAMES GRAHAM, OF ORANGE, CONNECTICUT.

JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 309,386, dated December 16, 1884.

Application filed October 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES GRAHAM, of Orange, in the county of New Haven and State of Connecticut, have invented a new Improvement in Journal-Bearings; and I do hereby declare the following, when taken in connection with 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 face view of the bearing; Fig. 2, a longitudinal section of the same; Fig. 3, a perspective view of the hard-metal plate detached.

This invention relates to an improvement in the construction of bearings for the journals of railway-car axles, the object being to construct the bearings so as to present a hard wearing-surface for the journal, and one which may contain a lubricant in itself; and the invention consists in a plate having its face conforming, substantially, to the shape of that portion of the journal upon which it is to bear, with apertures through it, the said plate having the body of the bearing cast upon it, and so as to become permanently united therewith, the said body having recesses corresponding to the apertures through the plate, but of greater area, as more fully hereinafter described.

A represents the plate which is to form the bearing-surface. This plate in length corresponds substantially to the length of the journal, and in width and curvature upon its face corresponds to that part of the journal upon which the bearing is desired. Through this plate apertures B are formed, here represented as four, two each side the center, leaving a longitudinal bar, C, through the center. In this bar or central portion, C, several small apertures, *a*, are formed, more or less in number. Preferably the plate is made thicker at the center, gradually diminishing in thickness around to the edges. This plate is made complete, preferably from the metal known as "nickel-bronze," or may be any other hard durable metal.

D represents the body of the box. This is made of any suitable cast metal.

In molding the bearing for casting, the mold is made substantially like the box complete, with the plate therein, and so as to form cores for recesses E upon the back of the apertures B.

The pattern removed from the mold, the plate A is introduced into the mold, and then the metal poured in to form the body D upon the plate A, and as seen in Figs. 1 and 2.

In casting the body of the box, studs *d* are formed, extending through the apertures *a* in the central bar, and after the casting is removed from the mold the studs are riveted down into the apertures *a*, as seen in Fig. 2, which serves to firmly unite the body with the central bar.

At the edges of the plate A the casting of the body overlaps, as at *e*, so that the edges are firmly held by the casting. The recesses *e* are larger in area than the apertures B through the plate A.

After the casting is complete, the apertures B are filled, as indicated in solid black, Fig. 2. This filling may be a lubricant, such as plumbago; or it may be a fibrous material which will absorb the lubricant; or it may be babbitt. The babbitt may flow out to fill in upon the surface of the hard-metal plate A to make a self-fitting bearing. The plate A thus formed as practically an integral part of the box produces a durable or elastic surface, and the apertures or spaces through it afford desirable means for applying the lubricant to the journal.

I claim—

1. A journal-box having the plate A, of hard metal, in shape corresponding to the bearing-surface upon the journal, constructed with apertures B, the body D, cast upon the plate A, and with recesses between the plate and body of greater area than the apertures in the plate, the said plate also constructed with apertures *a*, and the body provided with corresponding studs, *d*, riveted into said apertures *a*, substantially as described.

2. A journal-box having the plate A, of

hard metal, in shape corresponding to the bearing-surface upon the journal, constructed with a longitudinal central bar, C, apertures B B each side of said bar, with apertures *a* 5 on said bar, combined with the body D, united to said plate in the process of casting, and so as to form recesses E between said body and the plate of larger area than the

apertures in the plate, said body also provided with studs *d*, corresponding to the ap- 10 ertures *a* in the central bar, and riveted therein, substantially as described.

JAMES GRAHAM.

Witnesses:

JOHN E. EARLE,

JOS. C. EARLE.