

(No Model.)

A. ROBBINS.  
AXLE BOX.

No. 420,357.

Patented Jan. 28, 1890.

Fig 2

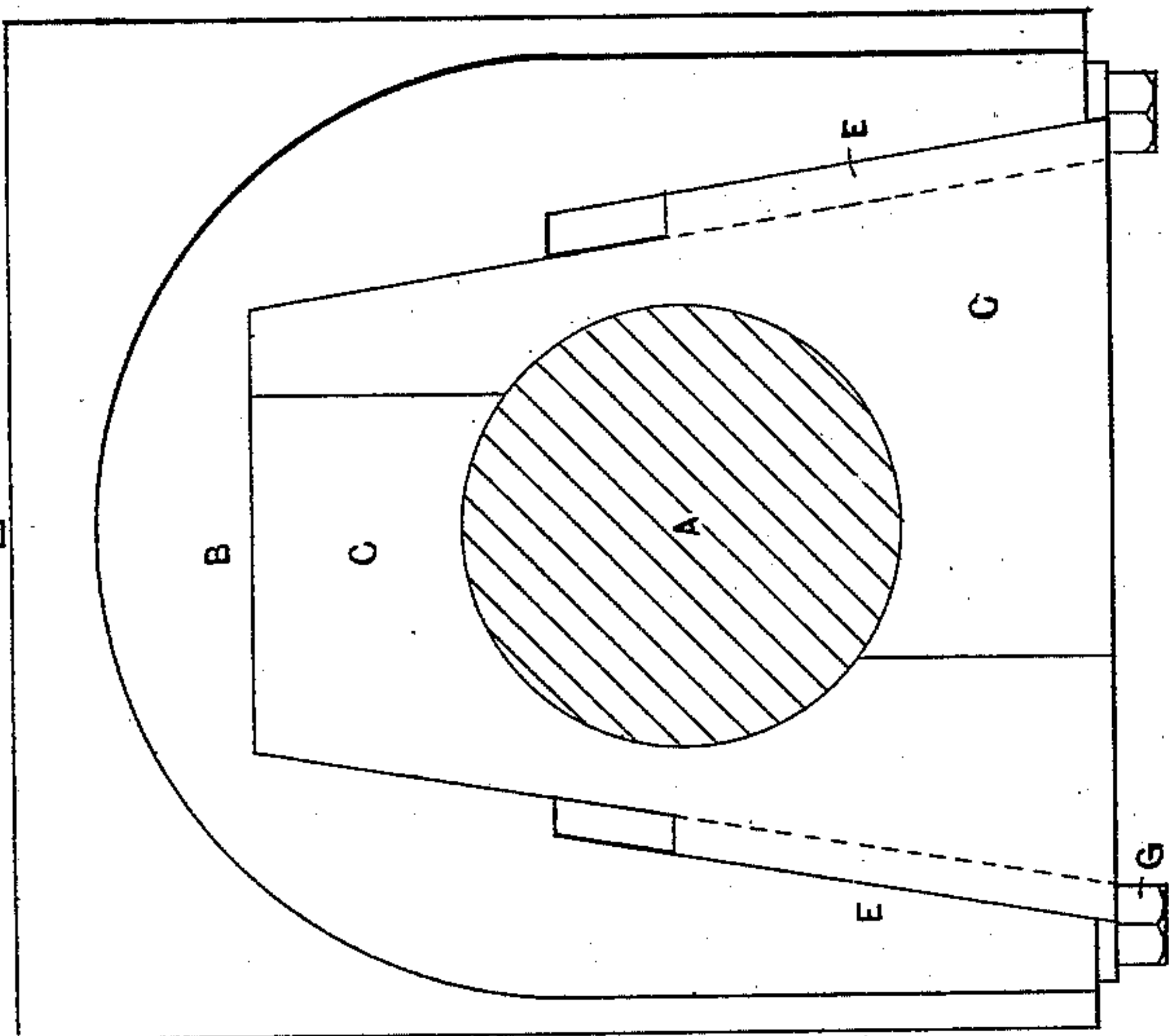


Fig 4

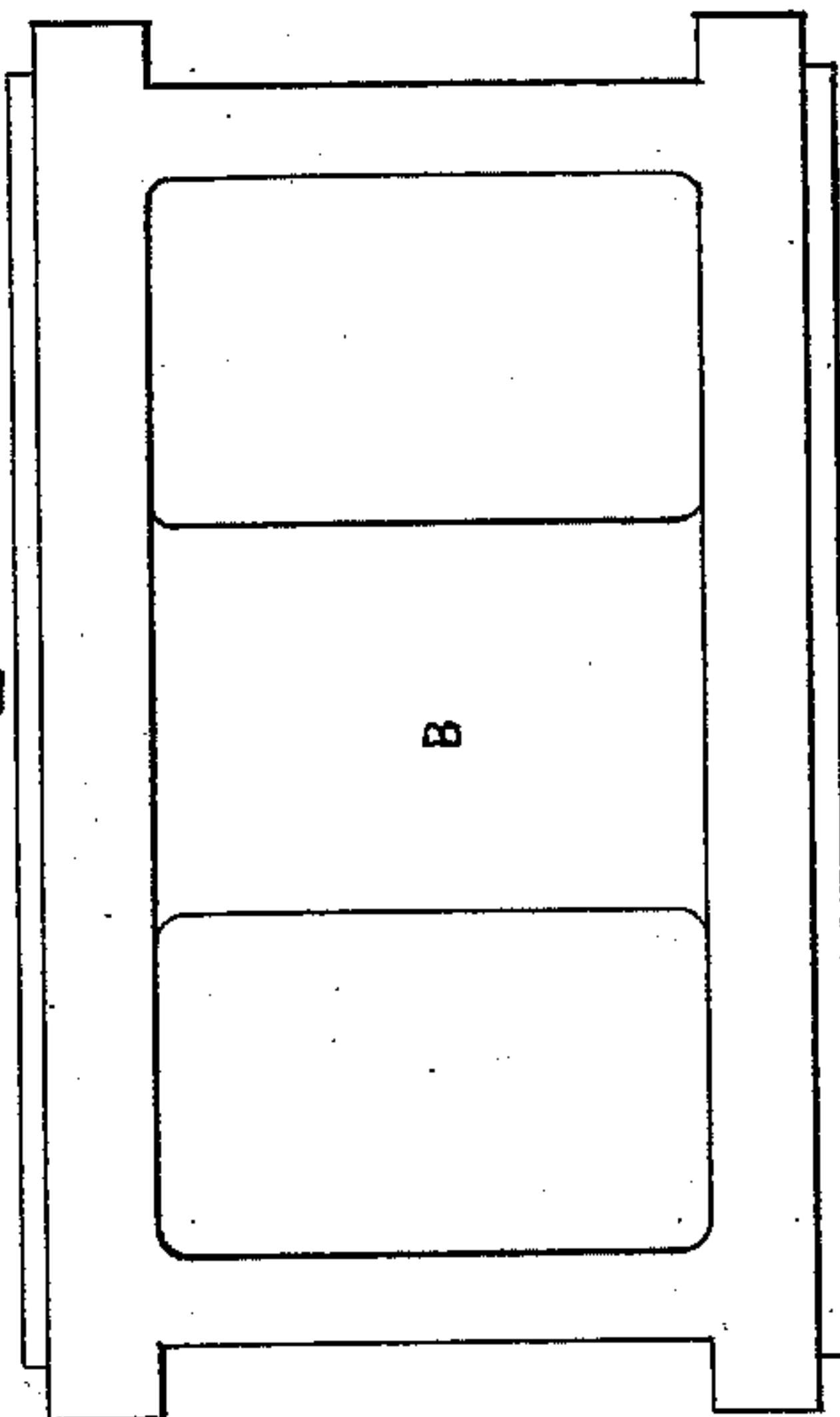


Fig 1

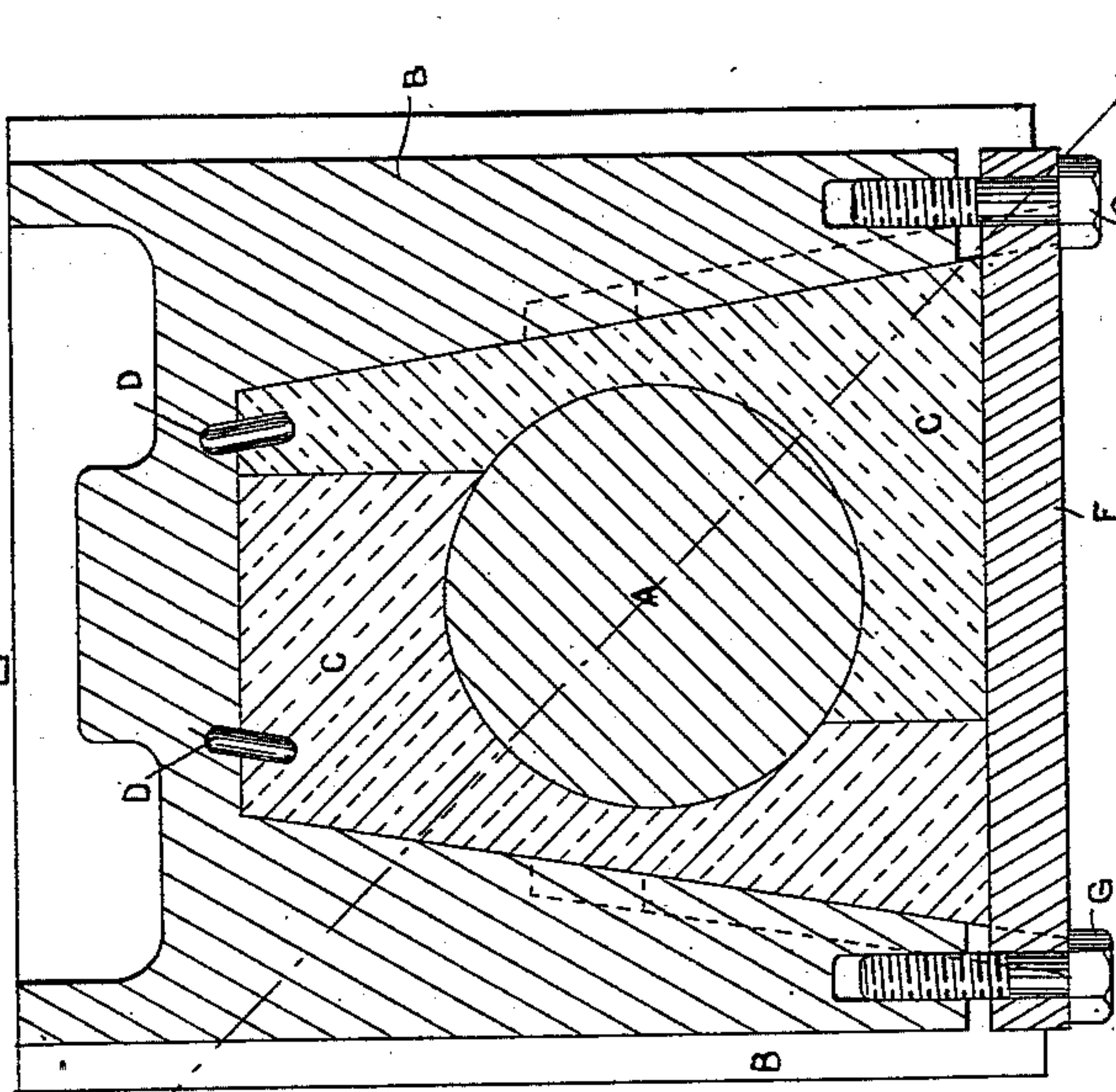
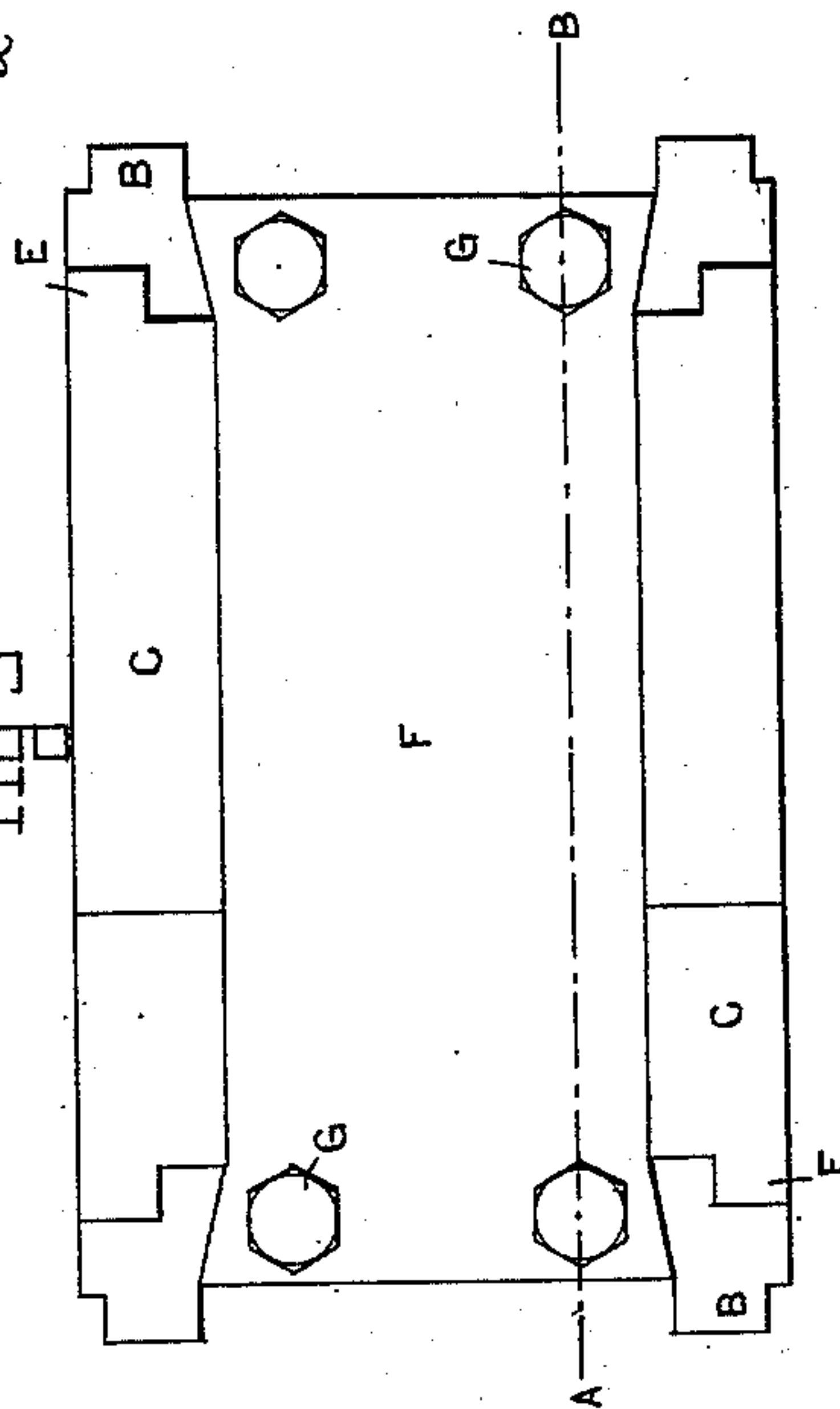


Fig 3

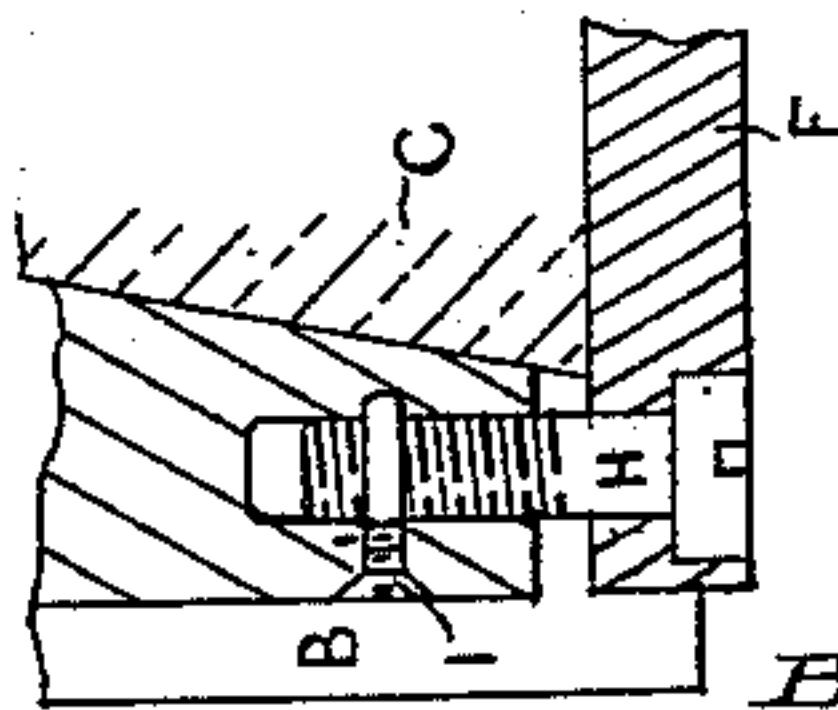


Witnesses

*H. F. Lamb*

*Chas. S. Sturtevant*

Fig 5



By his Attorney

*Frankland J. Smith*

Inventor

*Alfred Robbins*



# UNITED STATES PATENT OFFICE.

ALFRED ROBBINS, OF ANDOVERSFORD, COUNTY OF GLOUCESTER, ENGLAND.

## AXLE-BOX.

SPECIFICATION forming part of Letters Patent No. 420,357, dated January 28, 1890.

Application filed July 29, 1889. Serial No. 319,053. (No model.) Patented in England November 2, 1888, No. 15,847.

*To all whom it may concern:*

Be it known that I, ALFRED ROBBINS, engineer, of Andoversford, in the county of Gloucester, in the Kingdom of England, have invented certain new and useful Improvements in Axle-Boxes, (for which I have received provisional protection in England, dated November 2, 1888, No. 15,847,) of which the following is a specification.

10 The invention has for its object an axle-box for locomotives or other railway rolling-stock, in which the bearings are adapted to receive more effectively than in axle-boxes hitherto constructed the vertical pressure due  
15 to the weight of the locomotive, and the thrust or pull due to the reciprocating motion of the piston. The bearings of all axle-boxes are of course subject to wear in course of time, and I provide ready means for adjustment.

20 The invention is best described by aid of the accompanying drawings, in which an axle-box is shown adapted for locomotives.

Figure 1 is a sectional elevation on line A B, Fig. 3; Fig. 2, a front elevation; Fig. 3, a plan  
25 of the axle-box inverted; Fig. 4, a plan of the axle-box in its normal position, and Fig. 5 a detail view showing a device for preventing the adjusting-pin from becoming accidentally unscrewed through vibration.

30 A is the journal of an axle, and B the casting or body of the axle-box having a recess or cavity, the sides of which are preferably made sloping, but which may be of other suitable shape, if desired. Into this recess the brasses  
35 C C, having sides of corresponding inclination or shape, are placed, and they are prevented from shaking loose by dowels or studs D. The brasses C C have flanges E, extending the whole or part of their length, for keep-  
40 ing them in place in the body B.

The division between the two brasses C C is preferably placed vertically, not along the vertical center line of the axle A, but in different planes equidistant on either side of  
45 the said center line, and preferably at a distance therefrom equal to about half the radius of the journal. By making the division in this way a fair and unbroken surface is provided both for the vertical pressure due  
50 to the weight of the locomotive and for the thrust or pull due to the reciprocating mo-

tion of the piston. In some cases the dividing-line may be perpendicular to the resultant directions of the two pressures—that is, on or about the line *xx* or a line at right angles  
55 thereto, or in other suitable position.

In the drawings the opposing faces of the brasses are shown abutting against each other; but, if desired, insertion or packing pieces may be inserted between them and the top  
60 faces of the brasses C and the body A.

F is a keeper or cap, and G are adjusting-screws adapted to keep the brasses in position or press them closer together when the journal or brasses have become worn. In  
65 the alternative arrangement illustrated in Fig. 5 a cheese-headed screw H is employed, having its head flush with the surface of the keeper F, and prevented from becoming accidentally unscrewed through vibration by a  
70 small countersunk retaining-screw I.

Other securing devices may be employed instead of the screws G, such as bolts and nuts, or studs and cotters, &c.

To take up wear due to the rotation of the  
75 journal A and the pressures hereinbefore referred to, the brasses C are removed from the box and some metal is taken off one or both of their abutting-faces, and also from their top sides. The brasses are then replaced and  
80 adjusted by the keeper F and the screws G. If packing or insertion pieces are employed, the brasses need not be removed, but the insertion-strips are taken out, thinner ones inserted, and the keeper F screwed up.  
85

I declare that what I claim is—

1. In an axle-box for locomotives, a pair of bearing-brasses surrounding the axle, having their faces abutting above and below the same upon opposite sides of the vertical cen-  
90 tral plane of the axle and in planes approximately parallel thereto, substantially as described.

2. In an axle-box, a pair of bearing-brasses having their abutting faces located on each  
95 side of and at a suitable distance from the vertical central plane of the axle in planes approximately parallel to the said vertical plane, and having also their exterior sides inclined, as described, for the purpose of adjustment  
100 within a correspondingly-inclined recess in the axle-box.

3. In combination, the body B, having a recess provided with sloping sides, the axle A, bearing-brasses surrounding the axle and having sloping sides provided with flanges E to  
5 fit the recess in the body B, a cap, as F, and adjusting-screws for said cap, whereby the wear on the axle and bearing-brasses may be taken up.

In testimony whereof I have signed my name to this specification in the presence of 10 two subscribing witnesses.

ALFRED ROBBINS.

Witnesses:

GEO. C. DYMOND,  
H. P. SHOBRIDGE.