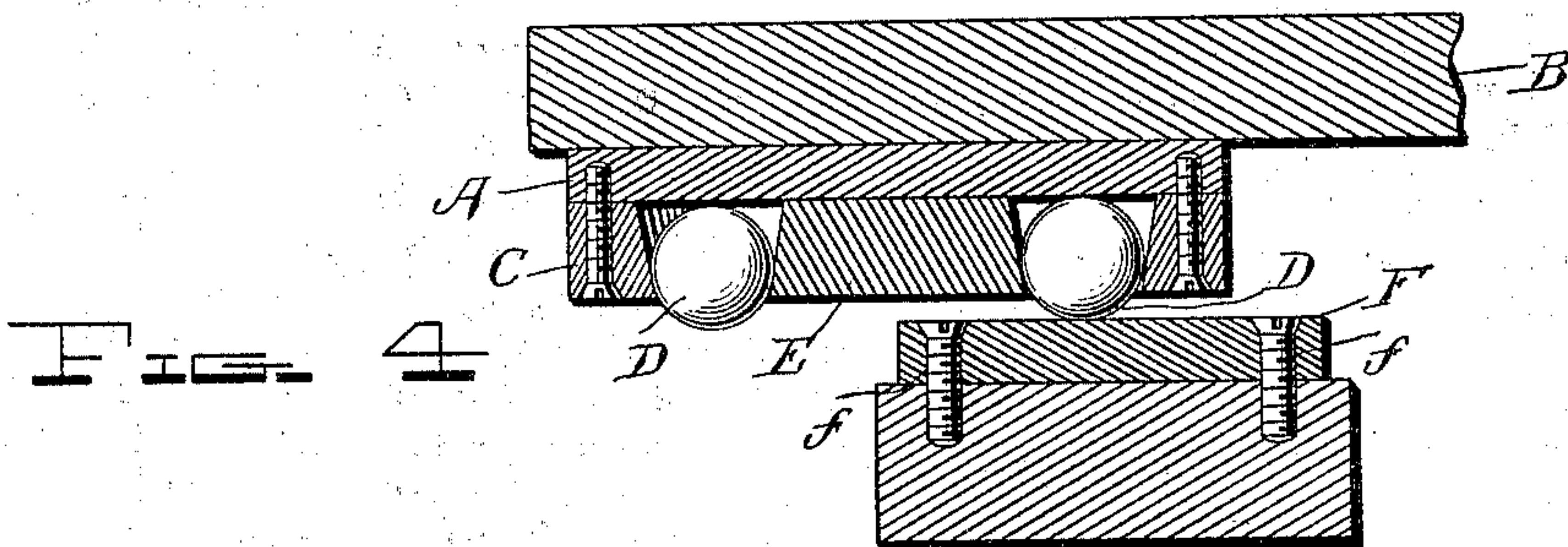
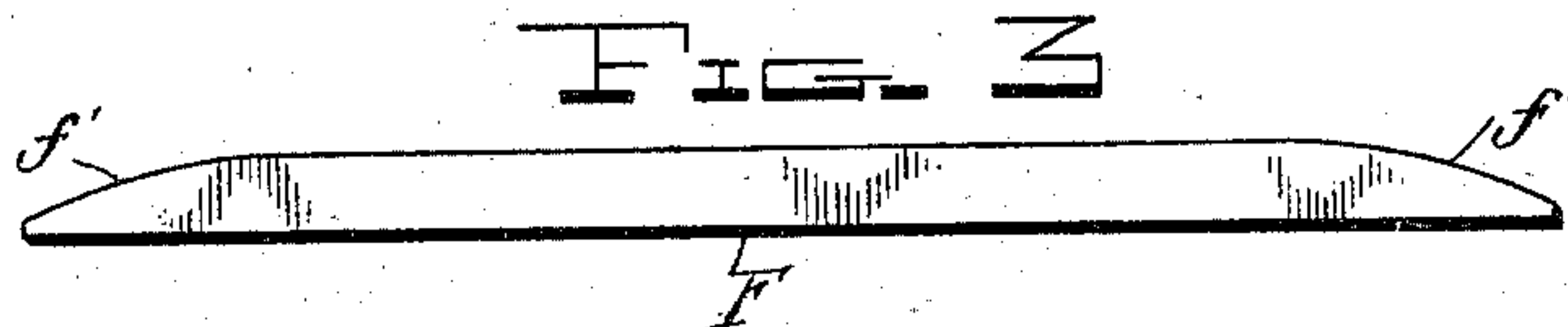
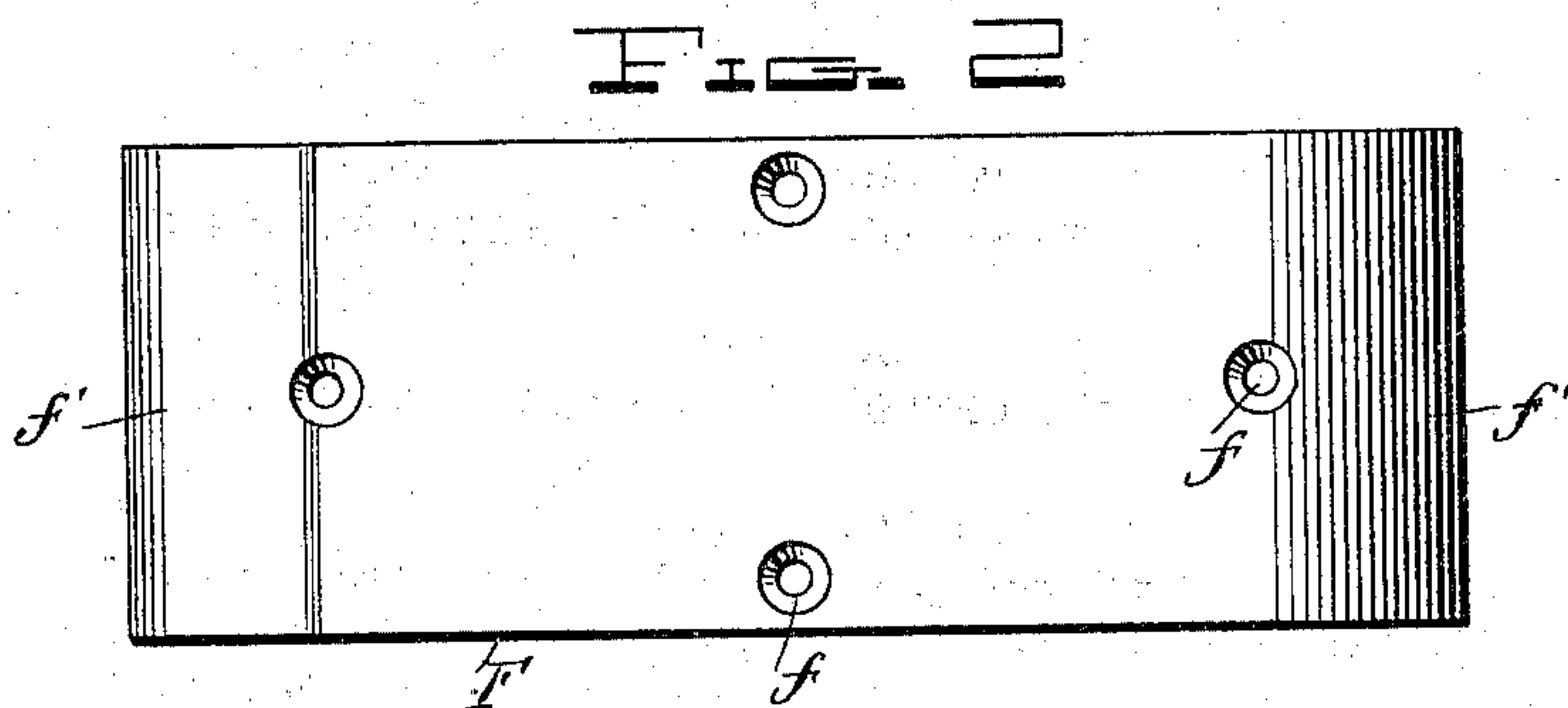
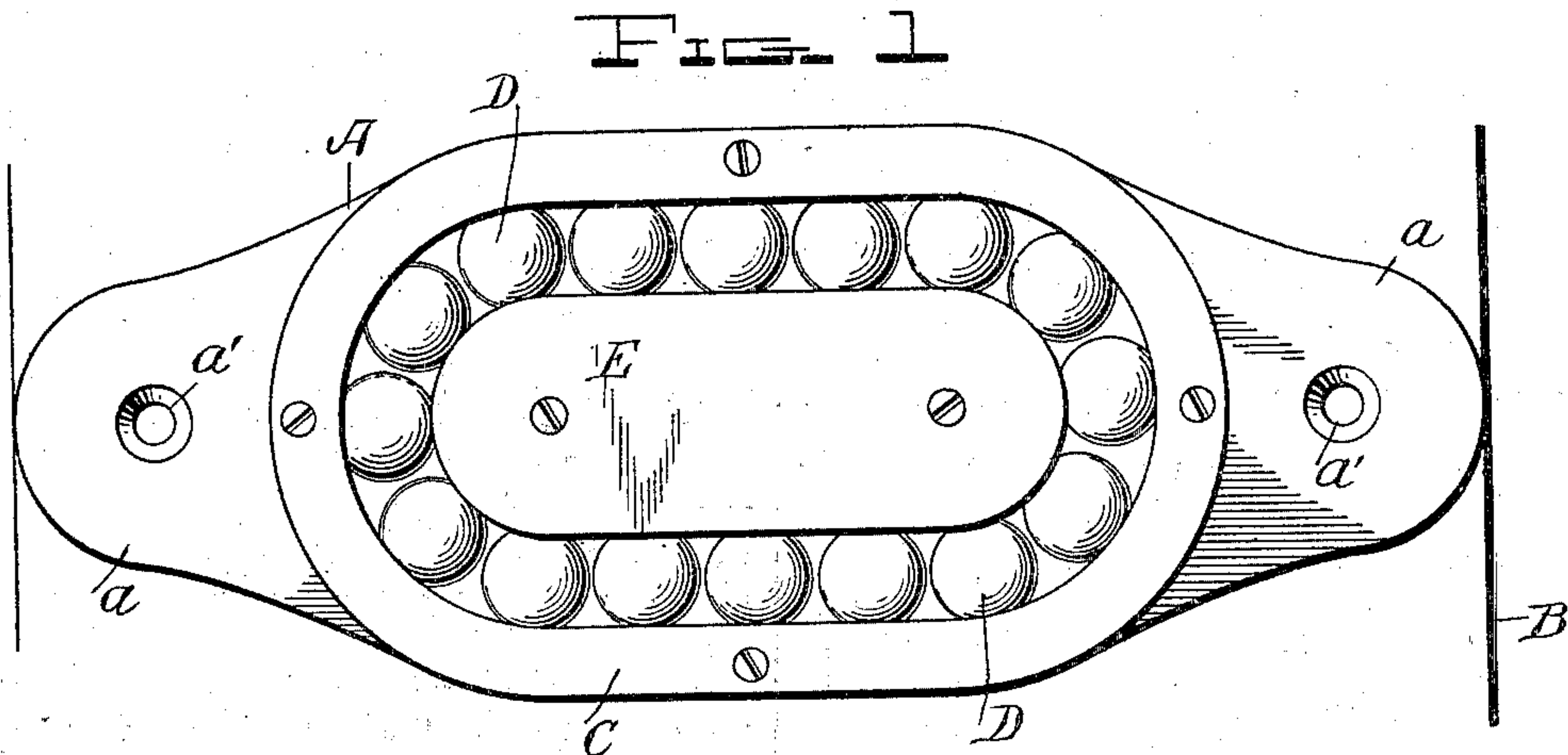


No. 696,388.

Patented Mar. 25, 1902.

D. P. BOSWORTH.  
SIDE BEARING FOR RAILWAY CARS.  
(Application filed Dec. 27, 1901.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

DANIEL P. BOSWORTH, OF MARIETTA, OHIO, ASSIGNOR OF ONE-HALF TO  
FREDERICK J. STUCK AND WILLIAM FREISE, JR., OF MARIETTA, OHIO.

## SIDE BEARING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 696,388, dated March 25, 1902.

Application filed December 27, 1901. Serial No. 87,431. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL P. BOSWORTH, a citizen of the United States, residing at Marietta, in the county of Washington and State of Ohio, have invented certain new and useful Improvements in Side Bearings for Railway-Cars; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to side bearings for railway-cars, and has for its object the production of a side support for the bodies of cars upon the trucks beneath them which shall be as free from friction as practicable and permit the trucks to swivel easily and shall maintain itself clear of dust or dirt by throwing the same down during its operation.

My invention belongs particularly to that class of side bearings for railway-cars in which are employed balls or rollers in line or continuous returning series for the purpose of reducing the friction when the side portions of the car bear upon the trucks during the passage over curved divisions of the roadway.

Each constituent element of my invention is described in detail and its individual office, together with the mode of operation of the whole, fully explained hereinbelow.

Of the accompanying drawings, throughout which like letters designate like parts, Figure 1 represents a bottom plan view of the top plate. Fig. 2 shows a plan view of the lower plate. Fig. 3 shows an edge view of the lower plate, and Fig. 4 shows a cross-section of the top and lower plates attached to supporting-beams of the car-body and truck-frame above and below them.

Considering the drawings, letter A marks the top plate, having the ears *a a* at its ends. These ears are pierced by bolt-holes *a' a'*, enabling the plate to be bolted securely to a beam B. (See Fig. 1 and Fig. 4.) The plate is bolted transversely of the beam, and the main reason for providing the ears or extension is to give the plate such a firm seat against the beam that it will not be forced to rock and

work loose from the one-sided upward pressure of the lower plate, as explained hereinafter.

Secured to the plate A is an elliptical or oblong flange C, with circular ends, and this flange is also a ball-retainer, constituting one wall of a retaining-raceway for the balls D, the remaining wall being a part of the block E, formed integrally with or secured to the middle point of the plate A and corresponding in form to the flange C. It will now be understood that if the flange and block be placed in position with the balls in the raceway the balls are retained in the continuous returning series. (Shown in Fig. 1.)

The lower plate is a flat parallelogram F, (see Fig. 2,) as usually formed, with any desired number of bolt-holes *f f* to enable it to be attached to the beam G, that supports it upon the truck. (See Fig. 4.) In Fig. 3 it will be noted that the end portions of the lower plate (marked *f' f'*) are beveled or inclined, and this feature of the construction permits the balls to rise gradually and easily into their seats and to come under the full pressure and take up each its share of the load without jar or shock as the truck swivels. In Fig. 4 it is shown that the lower plate extends but one-half the way across the under surface of the upper plate. The reason for thus arranging the lower with respect to the upper plate is to allow one line of balls, usually those in the outer side of the raceway, to move without resistance in a direction contrary to the movement of the balls sustaining the weight. Were the lower plate extended entirely beneath the top plate all the balls on both sides of the raceway being then under pressure would tend to roll in the same direction, with resulting jam and resistance. As shown, the balls move easily contrariwise in the uncovered portion of the raceway and passing around rise up on the inclined ends *f' f'* of the lower plate and take up the load in their turns.

The top and lower plates are not fastened to each other, and the body of the car is free to tilt slightly with respect to the trucks during their progress, as usual. When a curve is reached, however, one rail of the track being elevated, the top and lower plates are



brought together on one side of the car, and the turning of the truck beneath the body carries out the operation as just explained.

An important feature of my invention is  
5 the capacity of the top plate to maintain itself free from dust and dirt. As the balls roll out of the covered into the uncovered portion of the raceway they are continually turning and advancing. The repeated movement and  
10 contact one ball with another and with the walls of the uncovered raceway, which opens downwardly, causes all accumulations of dust and dirt to fall out, and the bearing being continually cleaned in its uncovered portion  
15 prevents the covered portion from collecting dirt. Indeed, as the balls are constantly advancing one way or the other throughout the raceway they act as cleaners of their own track, covered or uncovered.

20 Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a side bearing for railway-cars, the combination of the top plate having the ball-retaining raceway upon its under side opening downwardly, the balls occupying the said raceway, and a lower plate arranged to cover one-half of said raceway from below, substantially as described. 25

2. In a side bearing for railway-cars, the combination of the top plate having the ball-retaining raceway upon its under side opening downwardly, the balls occupying the said raceway, and a lower plate arranged to cover one-half of said raceway from below, the bearing-surface of the said lower plate having inclined or beveled ends, substantially as described. 30 35

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL P. BOSWORTH.

Witnesses:

FRED. J. STUCK,

WILLIAM FREISE, Jr.