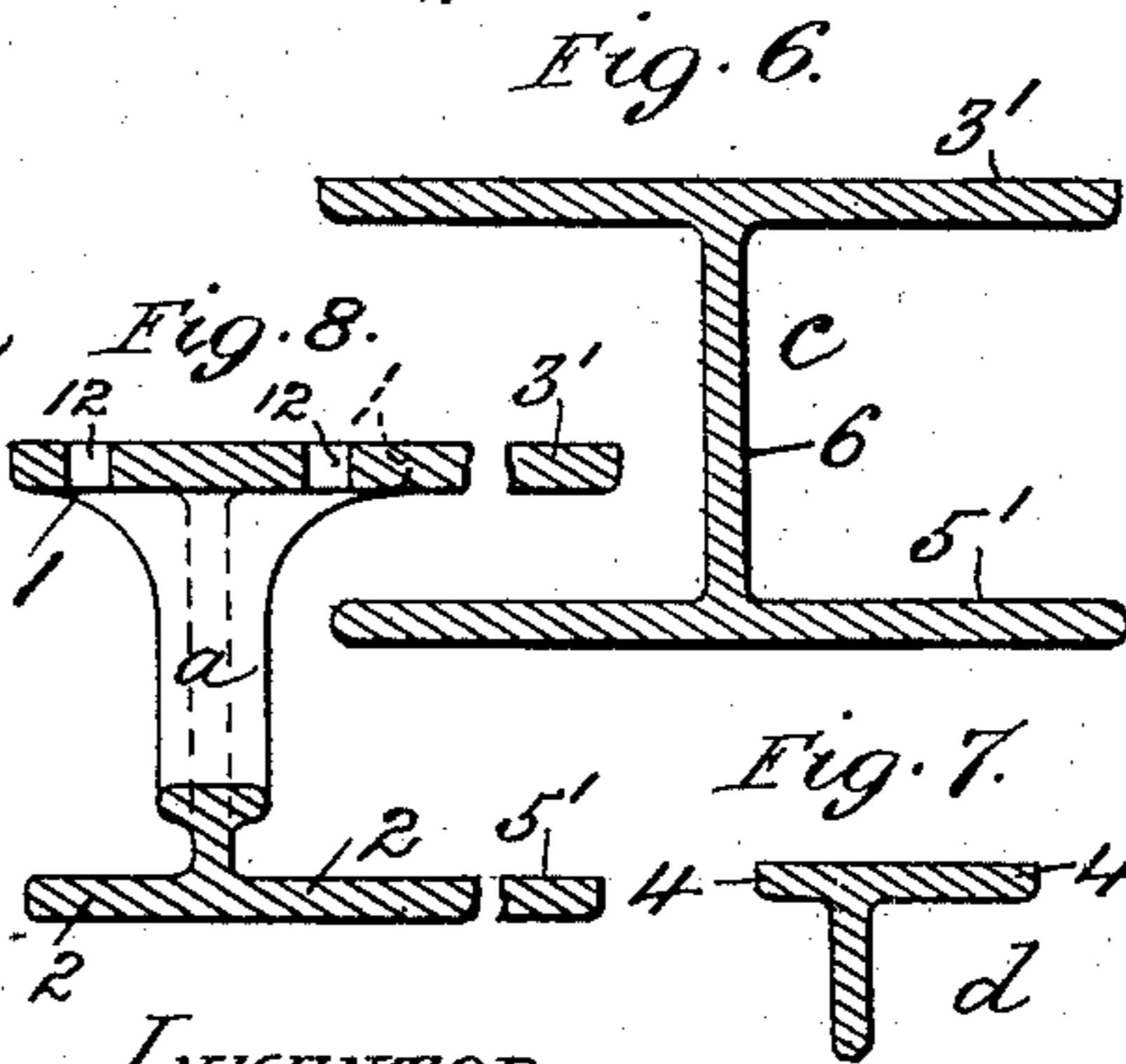
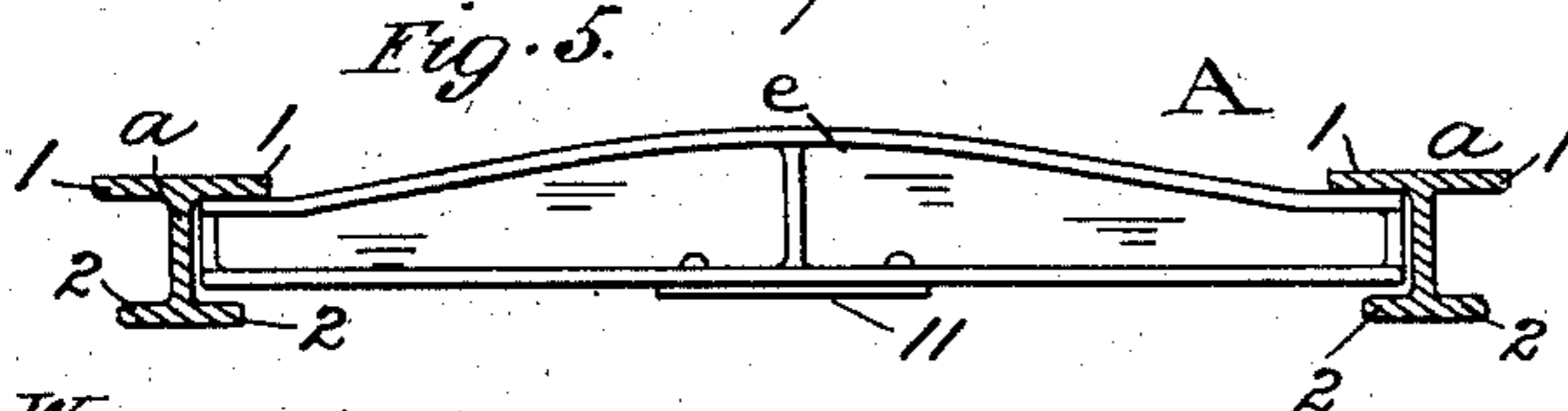
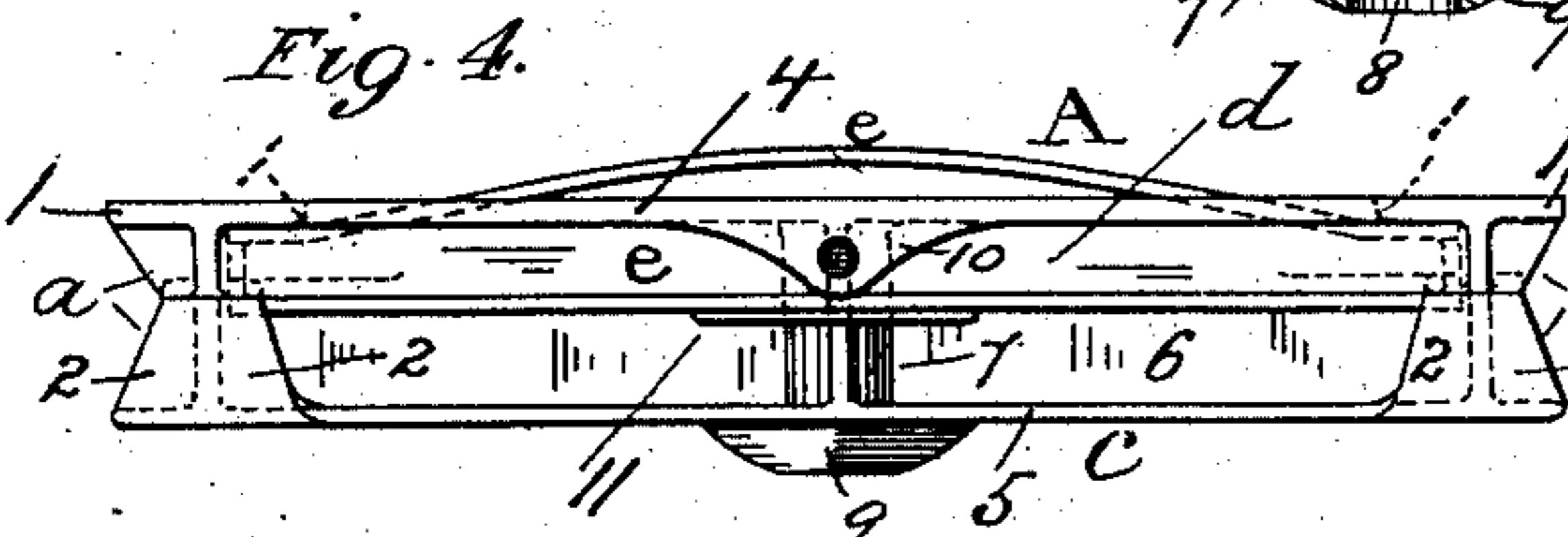
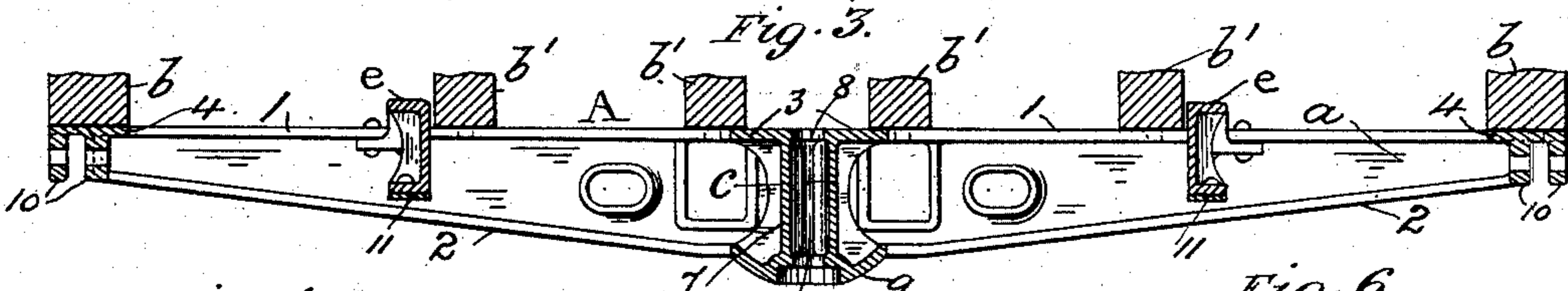
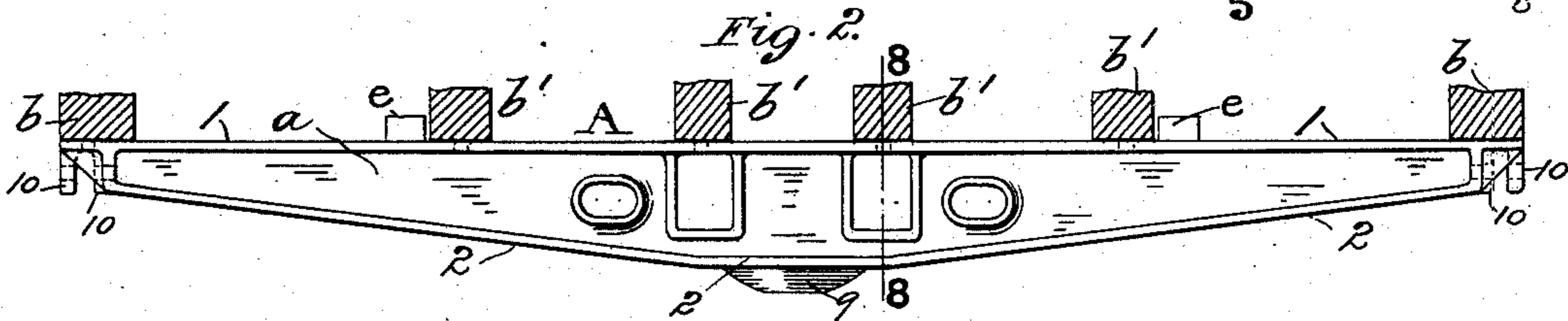
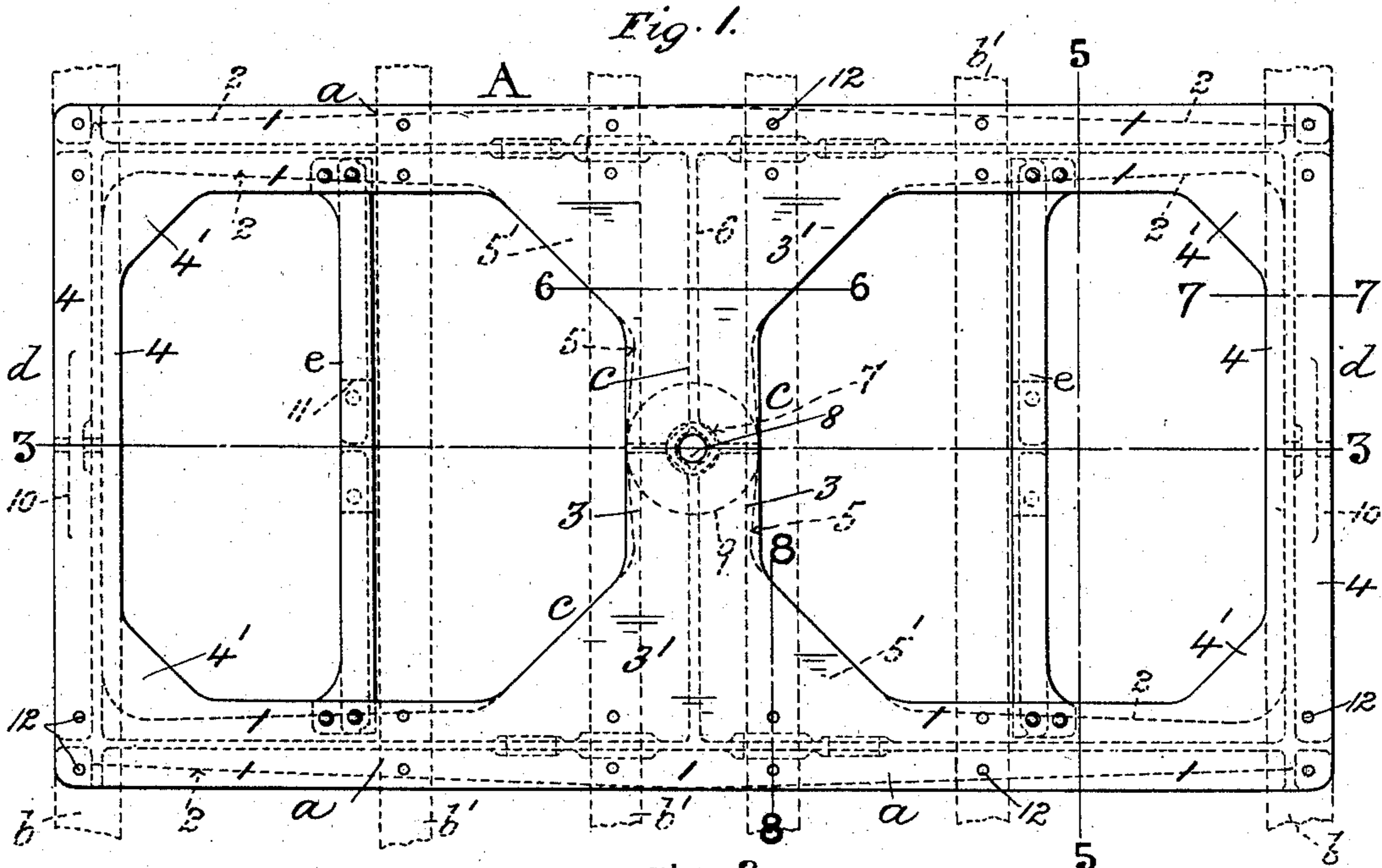


J. V. McADAM.  
CAR BODY BOLSTER.

(Application filed June 9, 1902.)

(No Model.)



WITNESSES  
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# UNITED STATES PATENT OFFICE.

JOHN V. McADAM, OF ST. LOUIS, MISSOURI, ASSIGNOR TO AMERICAN STEEL-BODY DOUBLE-BOLSTER CO., OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

## CAR BODY-BOLSTER.

SPECIFICATION forming part of Letters Patent No. 706,680, dated August 12, 1902.

Application filed June 9, 1902. Serial No. 110,894. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN V. McADAM, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Car Body-Bolsters, of which the following is a specification.

My invention relates to a double body-bolster for railroad-cars.

An ordinary double body-bolster usually comprises two single body-bolsters having top and bottom plates or arch-bars, respectively, with their thimbles and connecting-bolts, a longitudinal truss connecting the two body-bolsters together and having the body center bearing and center-plate castings secured thereto, all of said parts being separate pieces built up and connected together by bolts or other fastenings, thereby rendering the structure as a whole complicated and cumbersome. Moreover, by the continual jar to which the parts are subjected the fastenings are liable to work loose, which destroys the rigidity of the bolster and necessitates constant inspection and frequent repairs.

My invention has for its object to combine these separate parts in a single piece, preferably of cast-steel, having its component members so arranged and the metal distributed therethrough as to produce a compact, rigid, and durable double body-bolster specially adapted to withstand the varying strains to which it is subjected and at the same time insure the maximum of strength with a minimum weight of material.

The invention consists in features of novelty, as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification, whereon—

Figure 1 is a top plan of my improved double body-bolster for railroad-cars; Fig. 2, a side elevation thereof, showing the sills of the car in transverse section broken away; Fig. 3, a longitudinal vertical section through the bolster on line 3 3 in Fig. 1; Fig. 4, an end view of the bolster; Fig. 5, a cross-section through the same on line 5 5 in Fig. 1, showing one of the side bearings attached thereto; and Figs. 6, 7, and 8, detail cross-sections to enlarged scale, through the bolster on lines 6 6, 7 7, and 8 8, respectively, in Fig. 1, like

letters and numerals of reference denoting like parts in all the figures.

A represents my improved double body-bolster, which consists of two side beams *a*, preferably I-beams, arranged opposite and parallel to each other at a suitable distance apart. The top flanges 1 of the beams *a* are straight and adapted to bear against the under sides of the car-sills *b b'*, transversely thereto, while the lower flanges 2 are straight at the middle portion of the beams *a*, and thence inclined toward the top flanges 1.

The side beams *a* are united at their middle portion, or thereabout, to the corresponding ends of an intermediate cross-beam *c* (preferably an I-beam) and at their end portions, respectively, to the corresponding ends of an intermediate cross-beam *d*, (preferably a T-beam,) the top flanges 3 and 4 of the middle beam *c* and end beams *d*, respectively, being flush with the top flanges 1 of the side beams *a*, and the top flanges 4 of the end beams *d* adapted to bear longitudinally against the under sides of the outer car-sills *b*.

The top and bottom flanges 3 and 5, respectively, of the middle beam *c*, where they unite with the top and bottom flanges 1 and 2 of the side beams *a*, are "flared" or spread outward toward the ends of the side beams *a*, or, in other words, the corners resulting from the junction of the flanges 3 and 5 with the flanges 1 and 2 are formed with gusset-fillings 3' and 5', respectively, the gusset-fillings 3' being flush at the top with the flanges 3 and 1 and adapted to bear against the under sides of the car-sills *b'* thereat.

The inner top flanges 4 of the end beams *d*, at their junction with the top flanges 1 of the side beams *a*, are also preferably formed with gusset-filling 4' in a similar manner to the gusset-fillings 3' of the middle beam *c*. By this construction the body-bolster A is prevented from springing transversely under longitudinal strains of the car-body, which is also thereby strengthened and rendered more rigid under varying loads, rounding curves, and other sudden strains to which it is subjected.

In the vertical web 6 of the middle beam *c* is formed a tubular enlargement 7, through which and through the top flanges 3 is formed

the central vertical hole 8 for receiving the king-bolt, (not shown,) and around the enlargement 7 and hole 8 at their lower end is formed the body center-bearing 9 for engaging the center-bearing of the truck-bolster in the usual well-known manner.

On the under sides of the outer top flanges 4 of the end beams *d*, respectively, are formed lugs 10, to which the ends of the truss-rods (not shown) are coupled.

All the parts above described—to wit, the side beams *a*, the middle beam *c*, with its gusset-fillings 3' and 5', and the center bearing 7 and 9, and the end beams *d*, with their gusset-fillings 4', and lugs 10 for the truss-rods—are in one piece throughout and preferably of cast-steel, the dimensions, shape, and distribution of the metal through the entire structure being calculated for obtaining a body-bolster best adapted to its requirements under varying loads and strains.

*ee* represent the side bearings, which in the present case are shown, respectively, as a channel-beam riveted at its ends to the top flanges 1 of the side beams *a* and having a central rubbing-plate 11 riveted to its under side; but, if desired, the side bearings may be of any other suitable shape and integral with the side beams *a*.

Through the top flanges 1 of the side beams *a* are holes 12 for receiving the bolts (not shown) by which the body-bolster A is secured to the car-sills *b b'*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A car body-bolster, consisting of two opposite side beams, and a cross-beam intermediate to the side beams and united thereto, the said beams having lateral gussets at their junctions to each other, and adapted with the said gussets to bear against the car-sills, substantially as described.

2. A car body-bolster, consisting of two opposite side beams, and a cross-beam interme-

diate to the side beams and united thereto, the said beams having lateral gussets at their junctions to each other, all the said parts being integral and adapted to bear against the car-sills, substantially as described.

3. A car body-bolster, consisting of two opposite side beams, and a cross-beam intermediate to the side beams and united thereto, the said cross-beam having the body center-bearing, and the said beams having lateral gussets at their junctions to each other, all the said parts being integral and adapted to bear against the car-sills, substantially as described.

4. A car body-bolster, consisting of two opposite side beams, a cross-beam intermediate to the side beams and united thereto at their middle portion, or thereabout, and a cross-beam intermediate to the side beams and united thereto at their end portions, respectively, the said beams having lateral gussets at their junctions to each other, and adapted with the said gussets to bear against the car-sills, substantially as described.

5. A car body-bolster, consisting of two opposite side beams, a cross-beam intermediate to the side beams and united thereto at their middle portion, or thereabout, a cross-beam intermediate to the side beams and united thereto at their end portions, respectively, the said beams having lateral gussets at their junctions to each other, and the said cross-beams having respectively the body center-bearings and lugs for the truss-rods, all the said parts being integral, substantially as described.

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

JOHN V. MCADAM.

Witnesses:

J. G. ADERTON,  
EDWARD W. FURRELL.