

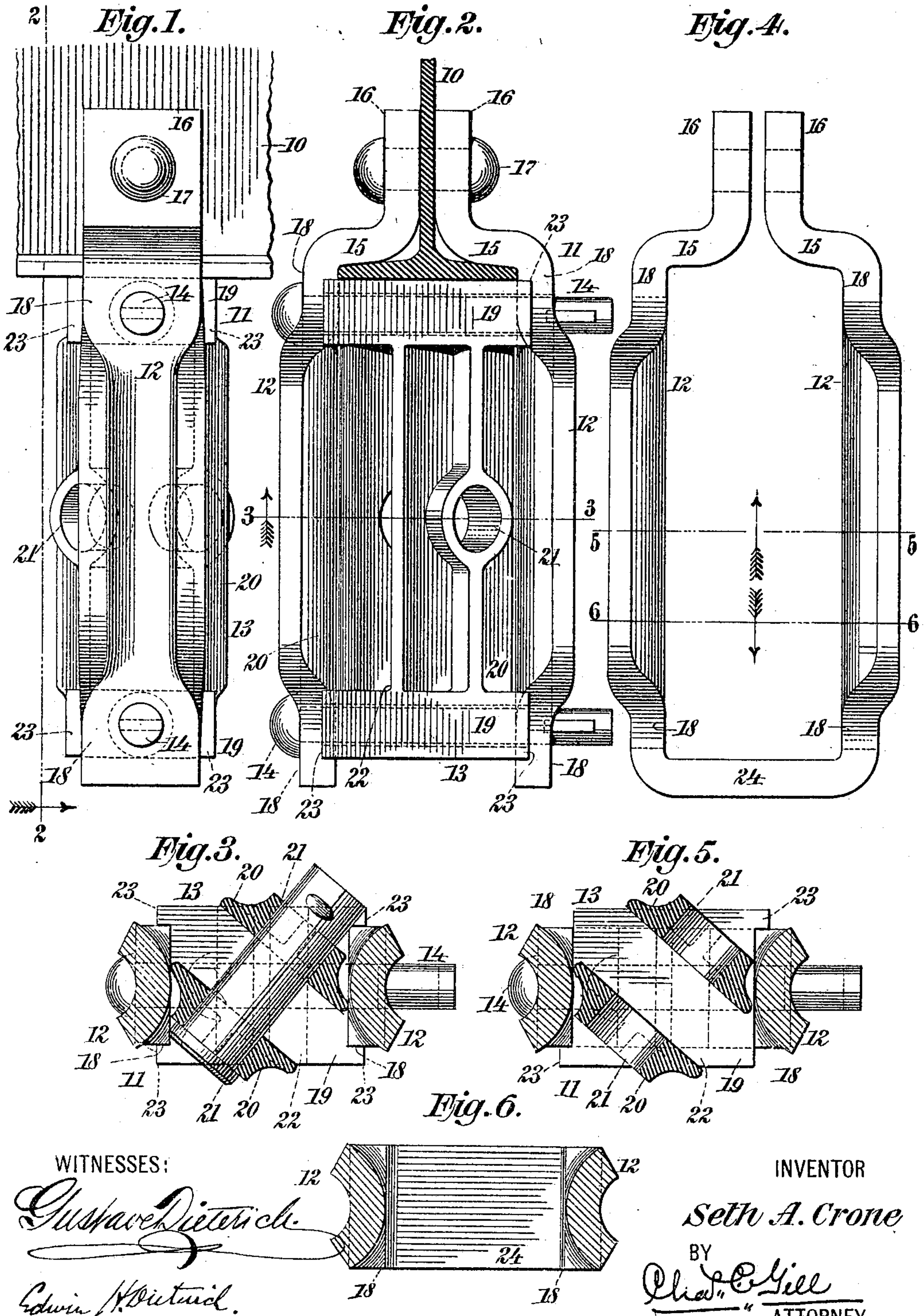
No. 819,734.

PATENTED MAY 8, 1906.

S. A. CRONE.
BRAKE BEAM FOR RAILWAY CARS.

APPLICATION FILED NOV. 15, 1904.

2 SHEETS—SHEET 1.



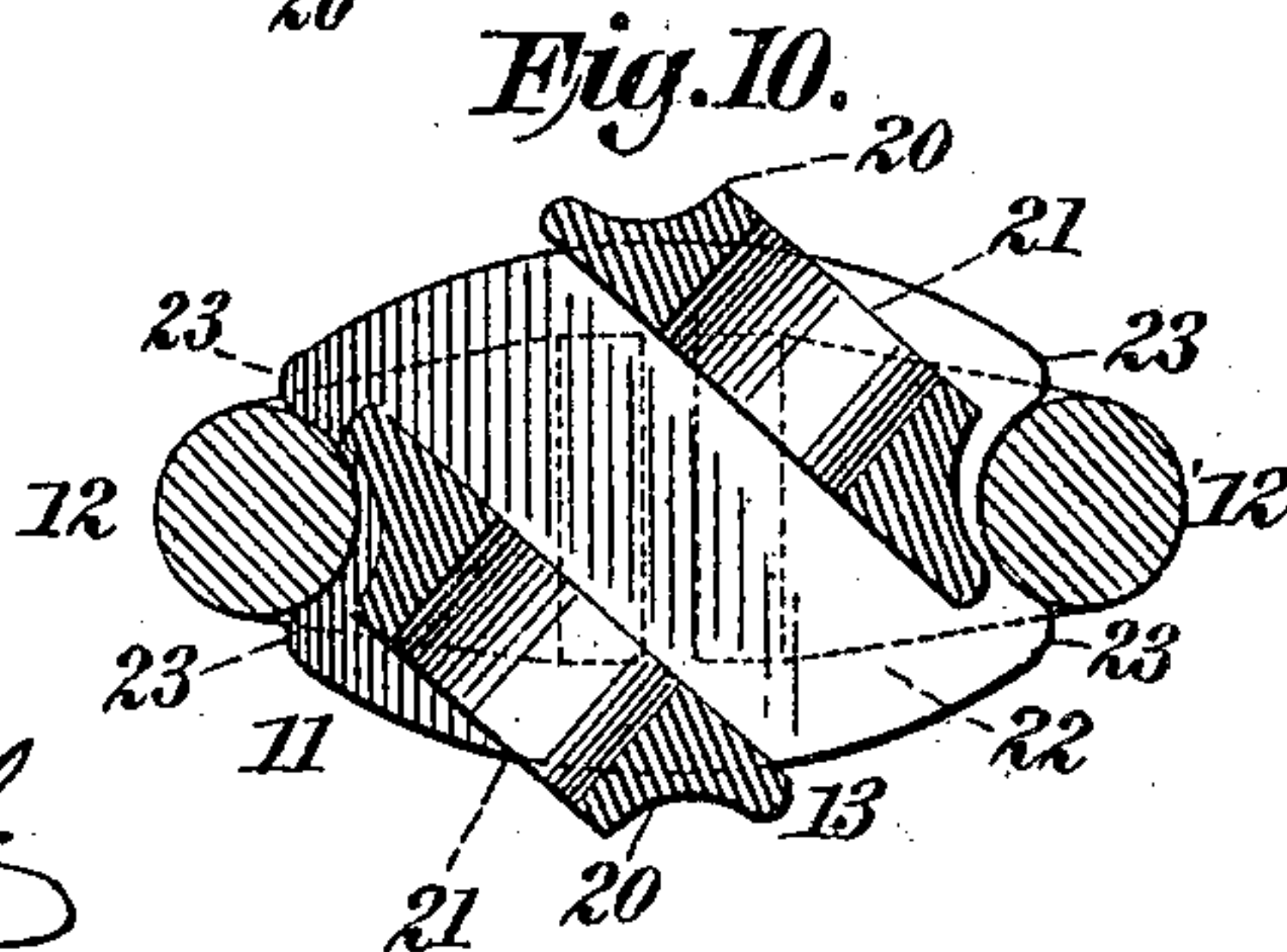
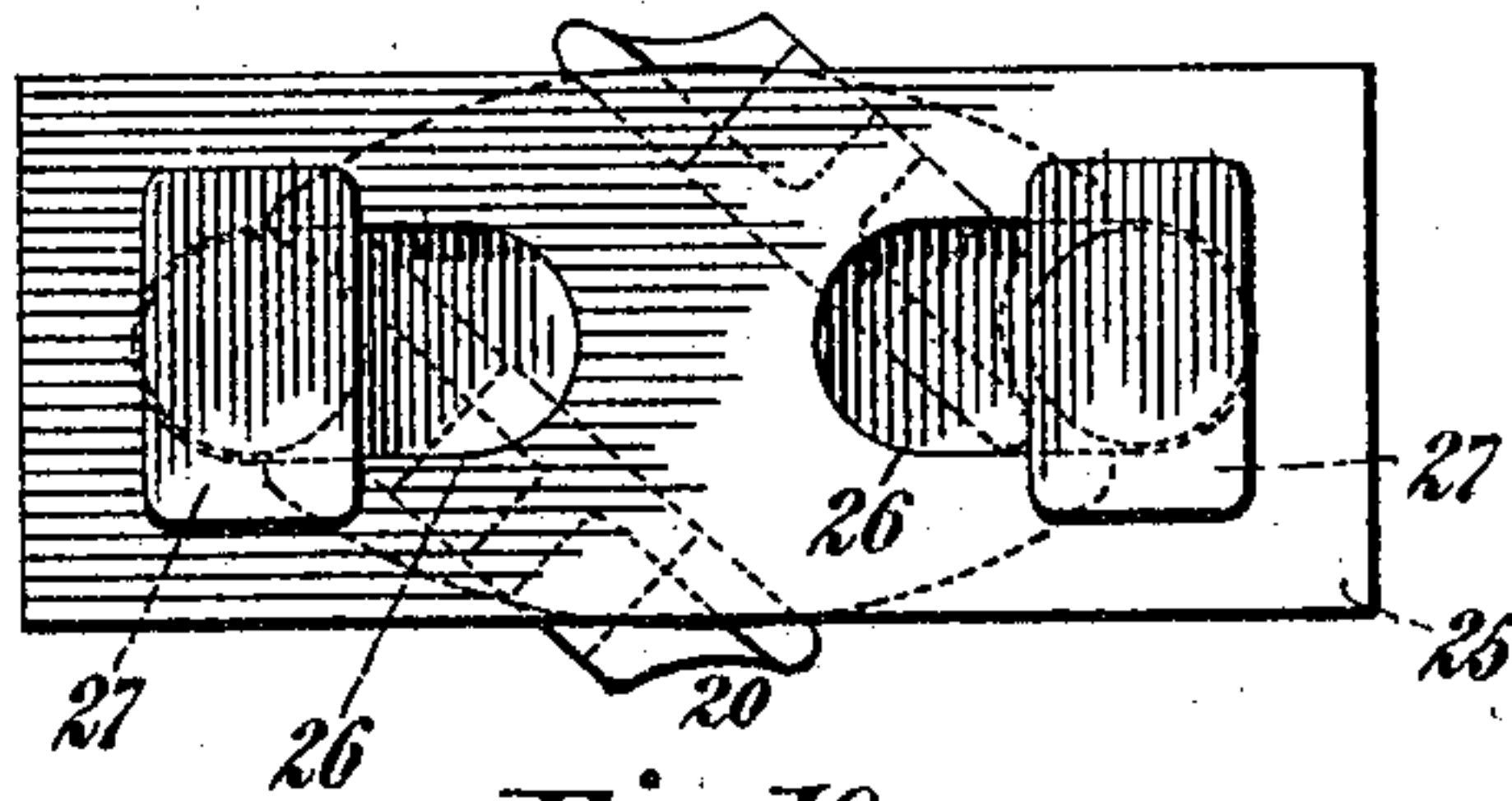
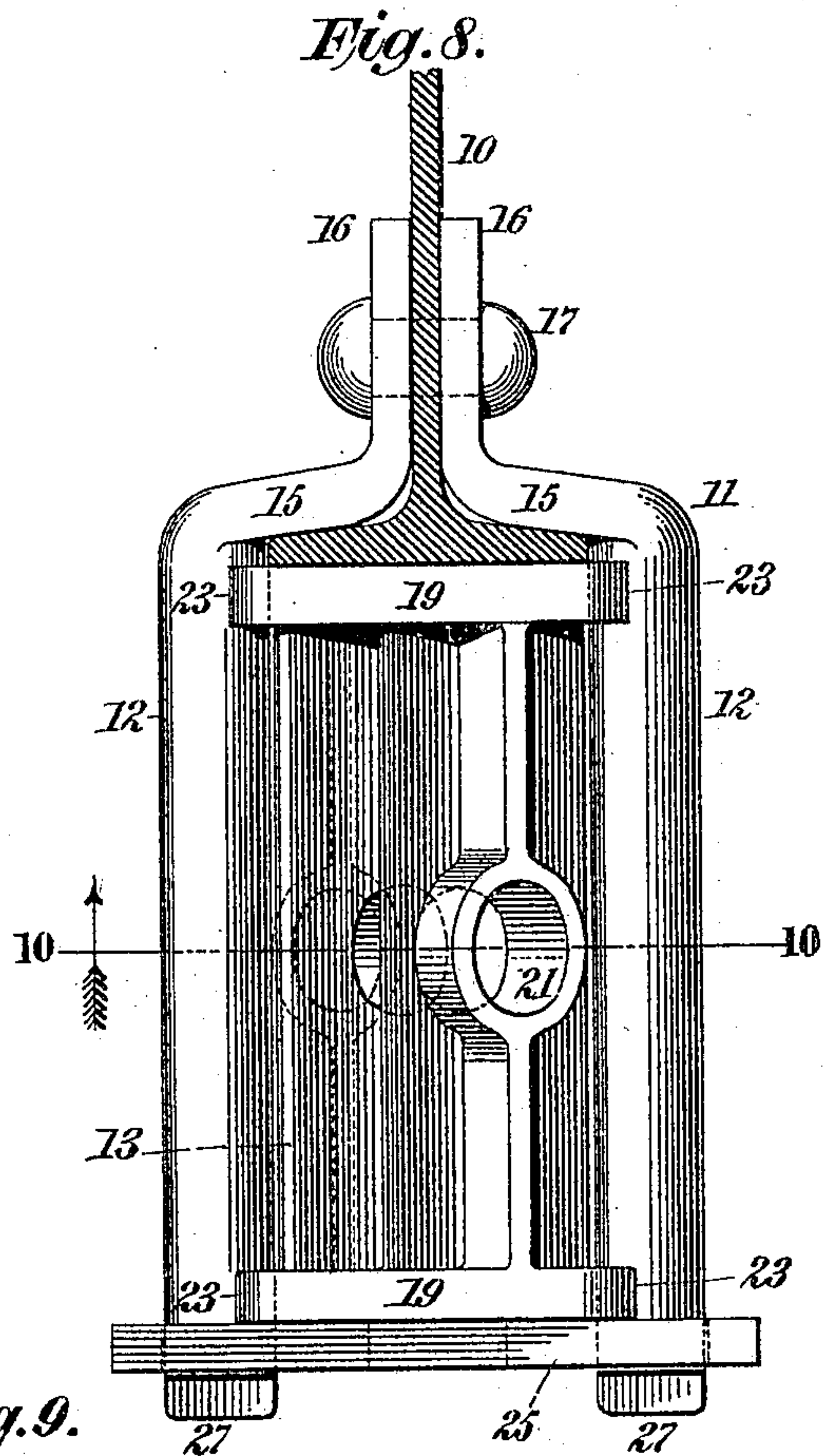
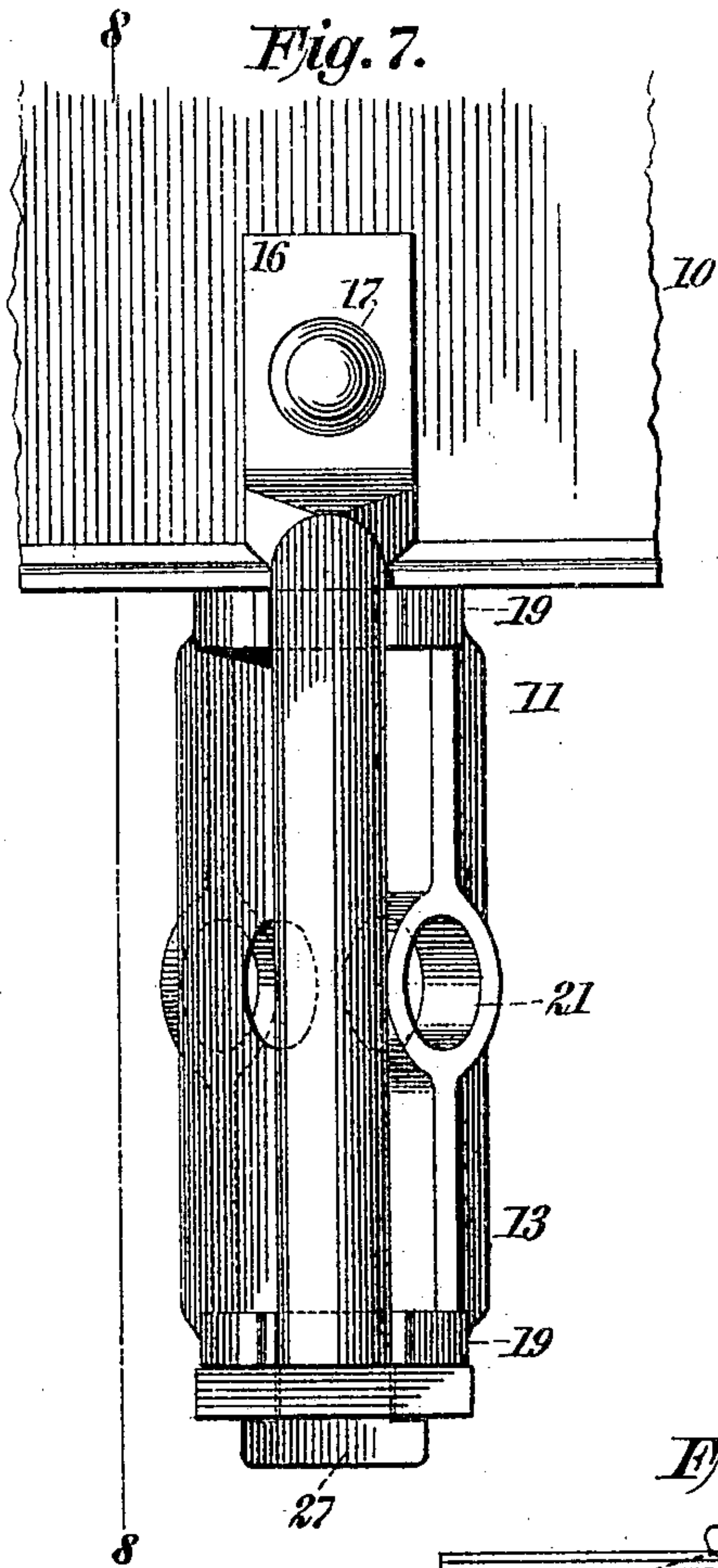
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BRAKE-BEAM FOR RAILWAY-CARS.

No. 819,734.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed November 15, 1904. Serial No. 232,788.

To all whom it may concern:

Be it known that I, SETH A. CRONE, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Brake-Beams for Railway-Cars, of which the following is a specification.

The invention relates to improvements in brake-beams for railway-cars; and it consists in the novel features of construction and combinations of parts hereinafter described, and particularly pointed out in the claims.

Brake-beams of the class to which my invention pertains comprise a rolled body-beam of suitable length, brake-heads of standard construction on the ends thereof, and a centrally-disposed fulcrum for the brake-lever; and my invention has for its object to produce a novel fulcrum for use in such beams, said fulcrum being efficient and capable of being firmly and quickly applied to the beam. The fulcrum of my invention comprises, preferably, a wrought or forged metal frame and a cast-metal block held by said frame and adapted to receive the brake-lever pin, the said block being slotted to admit of the brake-lever between its side portions. The forged-metal frame comprises two main side portions or arms which are directly opposite to each other and riveted to the body-beam, and the said block extends transversely of said beam and is reversible end for end between said arms, this construction being desirable, since by reason thereof and the fact that said arms are opposite each other the fulcrum is rendered adaptable for either right-hand or left-hand brake-levers.

The invention and satisfactory means for carrying the same into effect will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a top elevation, partly broken away, of a brake-beam equipped with a fulcrum embracing my invention. Fig. 2 is an edge view of the fulcrum with the body-beam shown in section on the dotted line 2 2 of Fig. 1. Fig. 3 is a transverse section of same on the dotted line 3 3 of Fig. 2. Fig. 4 is a detached edge view of a modified form of exterior frame for the fulcrum-block, this frame

being in one integral piece instead of in the two pieces shown in Figs. 1 and 2. Fig. 5 is a transverse section of same on the dotted line 5 5 of Fig. 4 with the fulcrum-block in position. Fig. 6 is a like section of same on the dotted line 6 6 of Fig. 4 with the fulcrum-block omitted. Fig. 7 is a top elevation, partly broken away, of a brake-beam equipped with a modified form of fulcrum embracing a part of my invention. Fig. 8 is an edge view of same, the body-beam being in section on the dotted line 8 8 of Fig. 7. Fig. 9 is an outer end elevation of same, and Fig. 10 is a transverse section of same on the dotted line 10 10 of Fig. 8.

In the drawings, 10 designates a portion of the usual body-beam, and 11 the novel fulcrum of my invention, which is applied centrally on one edge of the beam 10, the latter preferably being of commercial I shape.

Referring to Figs. 1, 2, and 3, the fulcrum there shown consists of a frame comprising the arms 12 12, preferably of wrought or forged metal, and the cast fulcrum-block 13, which is held in place between said arms by means of bolts 14. The arms 12 12 correspond with and are directly opposite to each other, and each of said arms is formed with flanges 15 16 to respectively engage the flange and web of the beam 10. The arms 12 are both secured to the beam 10 by a single rivet 17, passing through the flanges 16 and the web of said beam. The arms 12 are formed near the flange of the beam 10 and adjacent to their outer ends with the straight plain sections 18, while intermediate the sections the inner surfaces of said arms are convex in cross-section, as shown more clearly in Fig. 3. The fulcrum-block 13 is in one integral piece and comprises the corresponding heads or ends 19 and diagonally-disposed corresponding sides 20, in which are the centrally-disposed apertures or holes 21 for the brake-lever pin and between which is formed the slot 22 for the brake-lever. The heads 19 extend transversely of the flange of the beam 10 and lie between the inner and outer sections 18 of the arms 12, where they are secured by means of the bolts 14, which pass through said sections and also through said heads. Preferably the heads 19 will have gibs 23 at their end edges to engage the oppo-

site edges of the arm-sections 18 and aid the block 13 in resisting any force tending to twist or turn it axially.

The block 13 may be withdrawn from the arms 12 upon the removal of the bolts 14, and said block may be reversed end for end between said arms and the direction of the brake-lever slot 22 thus varied to adapt the block for either a right or left hand fulcrum without disturbing the arms 12, which is a feature of advantage. It is also a feature of advantage to be able to remove the block 13 and replace it with a new block whenever occasion requires without disturbing the arms 12. The forged-metal arms 12 are of very durable character and efficiently support and maintain the block 13, and the said arms are made convex along their facing sides intermediate the sections 18, so as to lie opposite to each other and close to the diagonal sides 20 of the block 13 without interfering with the movement of the brake-lever (not shown) in the slot 22. The arrangement of the parts of the fulcrum is also of advantage, in that when the arms 12 are directly opposite to each other and the heads of the block 13 extend transversely of the body-beam 10 a very simple, compact, easily-attached, and durable fulcrum is produced. The arms 12 by being of wrought metal add great resisting strength to the fulcrum and protect the cast-metal block 13 and afford all of the strength possessed by forged-metal fulcrums not employing the reversible end-for-end block 13 and not possessing the advantages of said block. A further feature tending to the durability and efficiency of the fulcrum is the fact that the arms 12 are directly opposite to each other, or substantially so, since by reason thereof the said arms extend directly from the flange of the beam 10 without turning under said flange, and therefore afford the maximum strength and efficiency in resisting the outward strains placed upon them by the brake-lever when in use, such strains in the present instance being directly in line with the length of said arms 12, which are straight.

I do not limit my invention in every instance to the placing of the arms 12 directly opposite to each other in a technical sense, though it is obvious that very great advantages are derived when said arms, whether of forged metal or castings, are directly opposite to each other, with the fulcrum-block 13 extending directly transversely of the body-beam 10, as shown in the drawings.

In Figs. 1, 2, and 3 I illustrate the exterior frame of the fulcrum as comprising the two independent forged-metal arms 12, and this is a desirable construction and the one preferred by me; but I do not wish to limit the invention in every part to the employment of the two independent arms, since, as I illustrate in Fig. 4, these two arms may be in

one integral piece folded at its middle portion, the section 24 connecting said arms at their outer ends. The fact that the arms 12 of Fig. 4 are connected by the section 24 does not interfere with the removal of the fulcrum-block 13 without disturbing the arms or detaching them from the beam 10, and in the construction shown in Fig. 4 I will employ the identical fulcrum-block shown in Figs. 1, 2, and 3, with the exception that I will omit the gibs 23 from two diagonally opposite corners of the heads or ends 19 of said block, as shown in Fig. 5, in which it will be seen that the upper right-hand and lower left-hand corners of the head 19 are provided with gibs 23, while the lower right-hand and upper left-hand corners of said head are not provided with gibs 23. In applying the block 13 to the integral frame shown in Fig. 4 the said block will be introduced between the sides 12 by a twisting or turning action, the upper right-hand corner of the block being first inserted between said arms and the lower left-hand corner of the block then worked around to the position shown in Fig. 5, whereupon the removable bolts or pins 14 will be applied and the block 13 thus detachably secured in position.

In Figs. 7, 8, 9, and 10 I illustrate a modified form of the invention in which the arms 12 are formed from round rods flattened at their inner ends to constitute the flanges 15 16 for engaging the beam 10, and in the construction presented in Figs. 7 to 10, inclusive, I secure the fulcrum-block 13 by means of a base-plate 25, which is formed with elongated openings 26 to receive the lower ends of the rods 12 and permit the passage through the said plate 25 of the heads 27, formed on the lower ends of said rods. The fulcrum-block shown in Figs. 7 to 10, inclusive, is formed with the heads 19, having gibs 23 to engage the adjoining sides of the rods 12, and the fulcrum-block 13 may be applied between the arms 12 and said arms then secured to the beam 10. The fulcrum-block shown in Fig. 8, not possessing the removable bolts or pins 14, is not detachable in the construction shown without disturbing the arms 12, and hence should it be desired to remove the said fulcrum-block the rivet 17 will be cut and the arms 12, or one of them, removed from the beam 10. The openings 26 in the base-plate are of elongated form, so that the heads 27 on the ends of the arms 12 may be passed through them when said heads are in line with said openings. For illustration, the right-hand arm 12 may be turned so that its head 27 may be passed through the right-hand opening 26, and thereupon said arm will be turned to carry its head across said opening, as shown in Fig. 9, after which the left-hand arm 12 may be applied to the left-hand end of the base-plate 25 in like manner, and

thereupon the fulcrum-block 13 may be applied to position between the arms 12 and the latter then brought together and around the flange of the beam 10 into the position shown in Fig. 8, said arms then being secured at their inner ends to the said beam. The construction shown in Figs. 7 to 10, inclusive, is an exceedingly durable one, and in this construction the arms 12 are directly opposite to each other, and the fulcrum-block extends directly transversely of the body-beam and is held between the facing sides of said arms.

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

1. A brake-beam comprising the flanged body-beam, and a fulcrum therefor consisting of the upper and lower side arms secured to the upper and lower faces of said beam and being opposite to each other, a fulcrum-block extending transversely of the beam and confined throughout its length between said arms, and detachable means for removably securing said block in position, whereby said block may be applied or removed without disturbing said arms, said block having the diagonally disposed slot and pin-holes; substantially as set forth.

2. A brake-beam comprising the flanged body-beam, and a fulcrum therefor consisting of the forged-metal upper and lower side arms secured to the upper and lower faces of said beam and being opposite to each other transversely of the beam, a fulcrum-block extending transversely of the beam and confined throughout its length between said arms, and means for securing said block at its opposite ends between and to said arms, said block having the diagonally disposed brake-lever slot and pin-holes; substantially as set forth.

3. A brake-beam comprising the flanged body-beam, and a fulcrum therefor consisting of the upper and lower side arms secured to the upper and lower faces of the beam and being opposite to each other transversely of same, and a fulcrum-block extending transversely of the beam between said side arms and having corresponding ends and centrally-disposed diagonal pin-holes, whereby said block may be reversed end for end and used for either a right or left hand fulcrum; substantially as set forth.

4. A brake-beam and a fulcrum therefor consisting of a frame comprising side arms opposite each other and having along their middle portions convex inner surfaces, and a fulcrum-block extending transversely of the beam between said sides and having the pin-holes and brake-lever slot; substantially as set forth.

5. A brake-beam and a fulcrum therefor consisting of a frame comprising side arms opposite each other, a fulcrum-block extend-

ing transversely of the beam between said arms and having gibs to engage said arms; substantially as set forth.

6. A brake-beam and a fulcrum therefor consisting of a frame comprising forged-metal upper and lower side arms secured to the upper and lower faces of the beam and being opposite to each other transversely of the beam, and a fulcrum-block extending transversely of the beam and confined throughout its length between said arms and having corresponding ends and the centrally-disposed brake-lever slot and pin-holes, whereby said block may be adapted, on reversing it end for end, for either a right or a left hand fulcrum; substantially as set forth.

7. A brake-beam comprising the flanged body-beam, and a fulcrum therefor consisting of the upper and lower side arms secured to the upper and lower faces of the beam and being opposite to each other transversely of same, and a fulcrum-block extending transversely of the beam between said side arms, and bolts extending transversely of the beam and through said arms and the ends of said block; substantially as set forth.

8. A brake-beam and a fulcrum therefor consisting of a frame comprising side arms opposite each other, a fulcrum-block extending transversely of the beam between said arms and having heads on whose edges are gibs to engage said arms, and bolts passing through said arms and heads; substantially as set forth.

9. A brake-beam and a fulcrum therefor consisting of a frame comprising forged-metal arms flanged at their inner ends to engage the beam, and a cast-metal fulcrum-block extending between said arms and secured thereto; substantially as set forth.

10. A brake-beam and a fulcrum therefor consisting of a frame comprising independent forged-metal arms secured at their inner ends to the beam, and a cast-metal fulcrum-block detachably secured between said arms and removable therefrom without detaching said arms; substantially as set forth.

11. A brake-beam and a fulcrum therefor consisting of a frame comprising independent forged-metal arms secured at their inner ends to the beam, and a cast-metal fulcrum-block detachably secured between said arms and removable therefrom without detaching said arms, said block having gibs to engage said arms; substantially as set forth.

12. A brake-beam and a fulcrum therefor consisting of a frame comprising independent forged-metal arms secured at their inner ends to the beam, a cast-metal fulcrum-block extending between said sides, and bolts passing through said arms and the ends of said block; substantially as set forth.

13. A brake-beam and a fulcrum therefor

consisting of a frame comprising independent forged-metal arms secured at their inner ends to the beam, a cast-metal fulcrum-block extending between said sides, and bolts passing through said arms and the ends of said block, said block having gibs to engage said arms; substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 14th day of November, A. D. 1904.

SETH A. CRONE.

Witnesses:

ARTHUR MARION,
CHAS. C. GILL.