Nov. 27, 1923. 1,475,286

S. A. CRONE

RAILWAY CAR BRAKE

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Fig. 2

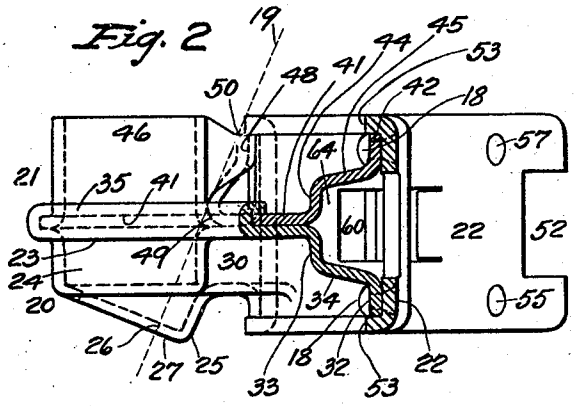


Fig. 3

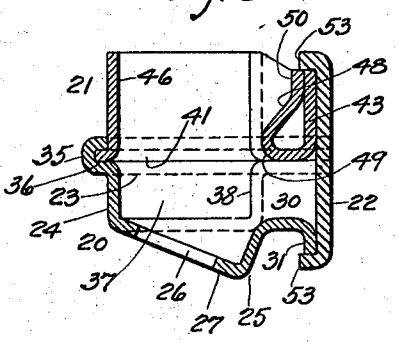


Fig. 1

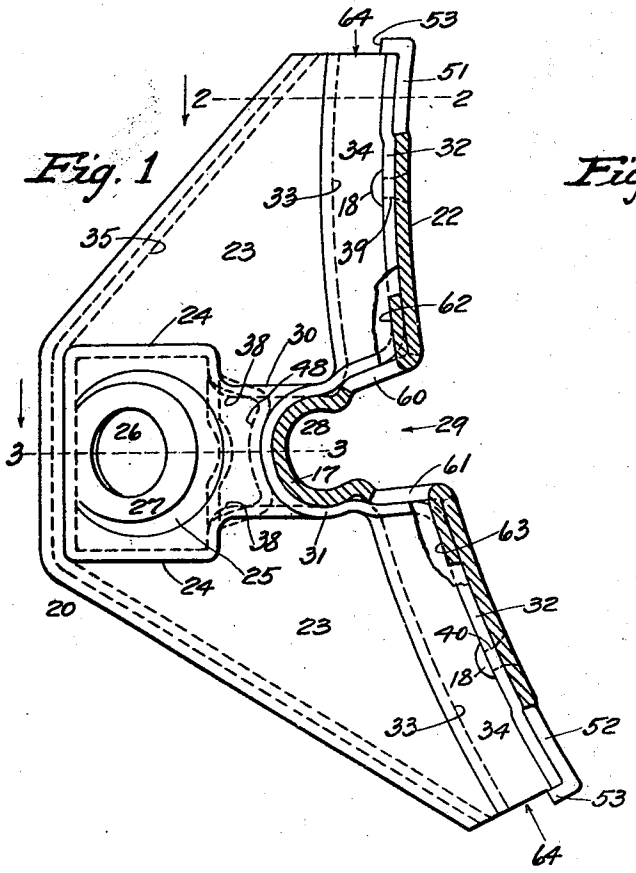
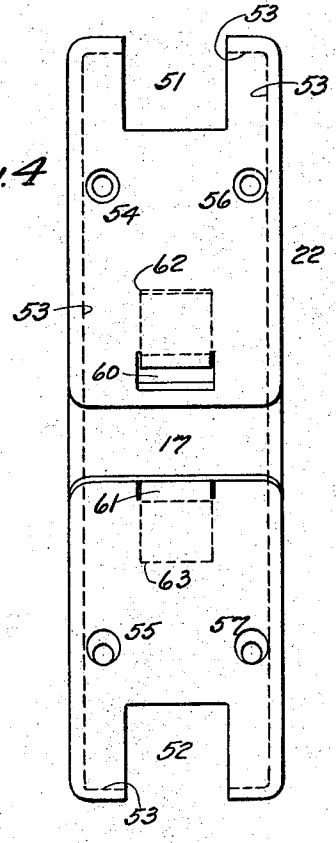


Fig. 4



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Fig. 6

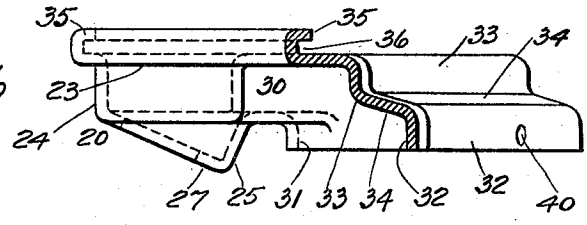


Fig. 5

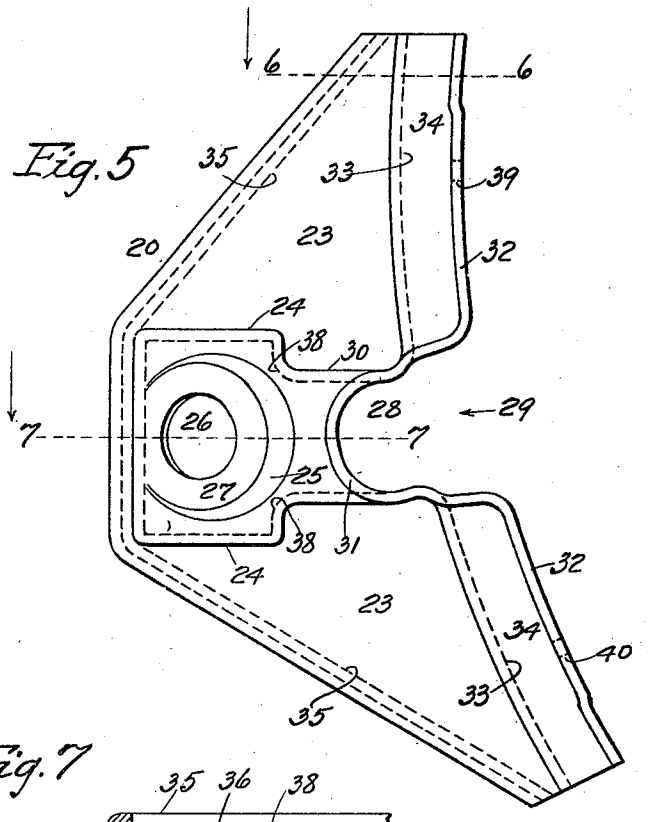
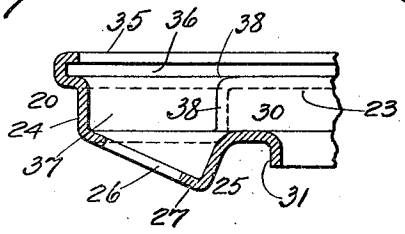


Fig. 7



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RAILWAY CAR BRAKE

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Fig. 9

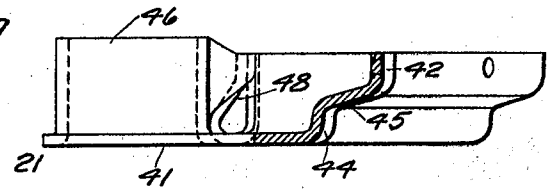


Fig. 8

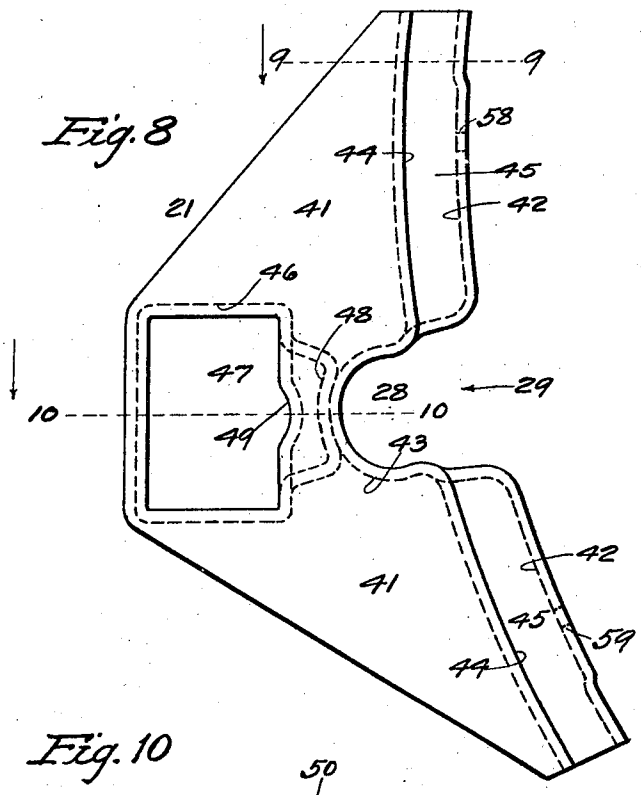
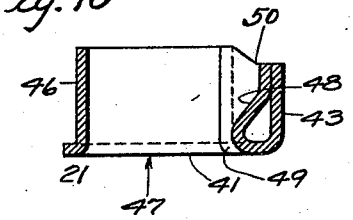


Fig. 10



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Fig. 14

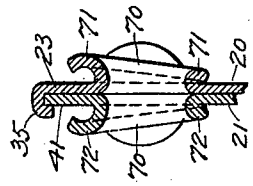


Fig. 13

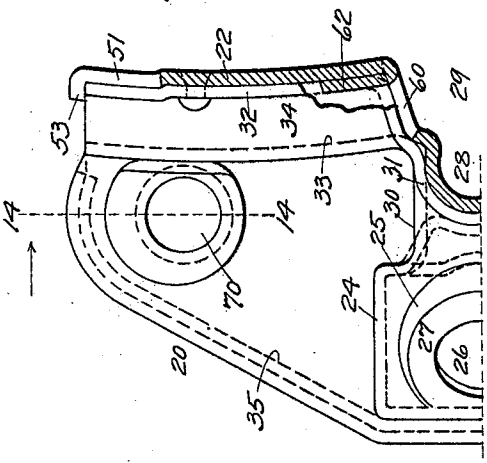


Fig. 12

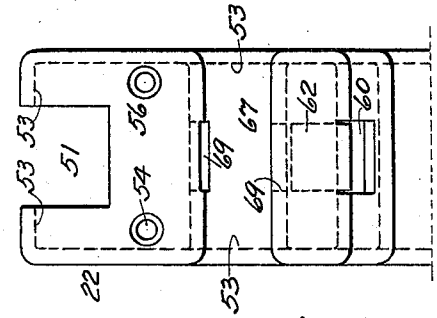
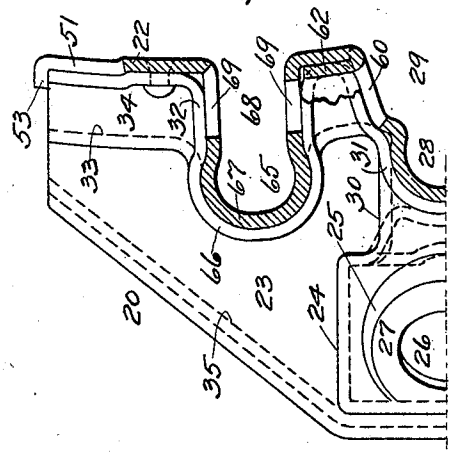


Fig. 11



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Patented Nov. 27, 1923. 1,475,286

UNITED STATES PATENT OFFICE.

SETH A. CRONE, OF EAST ORANGE, NEW JERSEY.

RAILWAY-CAR BRAKE.

Application filed October 20, 1922. Serial No. 595,744.

To all whom it may concern:

Be it known that I, SETH A. CRONE, a citizen of the United States, and resident of East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Railway-Car Brakes, of which the following is a specification.

One object of the invention is to provide novel brake-shoe heads for use on the ends of the compression and tension members of trussed brake-beams for railway cars, said heads being adapted to receive the brake-shoes and their securing keys, as usual.

A more specific purpose of the invention is to provide a novel brake-shoe head of forged metal and of a construction enabling the head to withstand very great pressure, the head of my invention being capable of withstanding, when resting on its toes, a pressure applied to its back in excess of nine thousand pounds with a deflection not exceeding one thirty-second of an inch and with no permanent set.

A further purpose of the invention is to provide a forged brake-shoe head of very great efficiency and at the same time one capable of convenient manufacture with the use of dies and whose parts may be quickly and accurately assembled.

The brake-shoe head of my invention comprises, in its preferred form, two vertical matching members and a face-plate, said vertical members constituting the body of the head and receiving said face-plate and having parts adapted to receive the adjacent ends of the compression and tension members of the brake-beam. Between the front edge portions of said vertical members and the back of said face-plate is formed a key-way for the usual key required for detachably securing a brake-shoe against said face-plate.

One distinguishing feature of my brake-shoe head is that it is of forged metal and devoid of transverse joints, the upper and lower portions of the head being integral with each other both at the front and at the back of the compression and tension members of the brake-beam and the outer and inner faces of the head presenting adequate plate sections to take, on edge, the thrusts that may be exerted against the head.

In the present construction of the head, the outer and inner vertical members thereof have an interengaging connection along their back edges, from the upper end to the lower end of the head, and said members are held together at their front edges by being embraced between flanges on the face-plate, and finally the three parts of the head are firmly secured together by a few rivets, four rivets being sufficient, extending through said face-plate and forward flanges formed on said vertical members.

The face-plate of the head is of such construction and arrangement that if worn, as by engagement with a car-wheel after a shoe has been worn through or lost from the head, it may be removed from the body portion of the head and replaced by a new face-plate. Any part of my new brake-shoe head is renewable.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Fig. 1 is a side elevation, partly in section, of a brake-shoe head constructed in accordance with and embodying my invention;

Fig. 2 is a transverse section through the same, taken on the dotted line 2—2 of Fig. 1;

Fig. 3 is a transverse section through the central portion of the same, taken on the dotted line 3—3 of Fig. 1;

Fig. 4 is an outer face view of the face-plate applied to the main body of the brake-head and against which the brake-shoe is to be applied;

Fig. 5 is a side elevation of the outer vertical member of the brake-shoe head and shows the outer face of said member;

Fig. 6. is a transverse section through the same, taken on the dotted line 6—6 of Fig. 5;

Fig. 7 is a like section, through the central portion of the same, partly broken away, taken on the dotted line 7—7 of Fig. 5;

Fig. 8 is an interior face view of the vertical inner body member of the brake-shoe head;

Fig. 9 is a transverse section through the same, taken on the dotted line 9—9 of Fig. 8;

Fig. 10 is a transverse section, through the middle portion of the same, taken on the dotted line 10—10 of Fig. 8;

Fig. 11 is a side view of the upper half of my brake-shoe head, illustrating in said portion a fashioning of the body members

of the head and the face plate to provide an upper recess or opening for a brake-shoe hanger, the head shown in Fig. 11 being in all other respects the same as that shown in Fig. 1;

Fig. 12 is a face view of the upper half of the face plate shown applied to position in Fig. 11, this face-plate, except for the provision of the upper hanger-opening, being the same as the face plate shown in Fig. 4;

Fig. 13 is an outer face view of the upper half of a brake-shoe head embodying my invention and which is identical with the brake-shoe head shown in Fig. 1 with the exception that in the upper portion thereof I provide an opening for a brake-shoe hanger, and

Fig. 14 is a vertical section through a portion of the same, at the upper hanger-opening, taken on the dotted line 14—14 of Fig. 13.

The brake-shoe head of my invention is of forged plate metal and composed of three members properly secured together to form a complete brake-shoe head, said members being an outer vertical member 20 shown separately in Figs. 5, 6 and 7, an inner vertical member 21 shown separately in Figs. 8, 9 and 10 and a face-plate 22 shown in Fig. 4 and also in Figs. 1, 2 and 3.

The vertical members 20, 21 constitute the main body of the head and are substantially two equal parts each formed from a sheet of metal pressed into shape by means of dies. The face-plate 22 is in one integral piece of forged plate metal cut and pressed into shape by means of dies and riveted to forward portions of the outer and inner members 20, 21.

The members 20, 21 are fashioned to be matched together and to receive the end of the brake-beam and also the end of the truss-rod, and to this end the outer member 20 has projected laterally from its flat vertical face portion 23 a hollow rectangular section 24 adapted to receive the end of a channel beam (not shown), and on said box-like section 24 is an angular outwardly projecting section 25 which contains a central opening 26 through which the end of the truss-rod may be inserted and around which is formed an integral seat 27 for the usual nut or other securing device by which the truss-rod is connected with the brake-shoe head. The box-like section 24 is at the back-portion of the member 20, as shown in Fig. 5, and in line with a front recess or opening 28 which is arranged for a brake-beam hanger and located at the back of a wider opening 29 provided for the usual center lug on a standard brake-shoe. The box-like section 24 is continued forwardly by a section 30 of reduced width which extends to an outwardly projecting lateral flange section 31 which defines the rear portion of the opening 28 and is in one part with a flange 32 extending from one end to the other of the forward edge of the member 20, said flange 32 being provided for strengthening the head and also for receiving one longitudinal side portion of the face plate 22 as well as for other purposes. Back of the flange 32 of the member 20 said member is bent outwardly from its main plate portion 23, as at 33, and then forwardly on an outwardly inclined line, as at 34, whence the metal is bent laterally to form the said flange 32, this formation affording great strength to the member 20, positioning the flange 32 to properly receive the face plate 22 and forming a section of the key-way to receive the usual key for the brake-shoe.

At its back edge the member 20 is flanged or U-ed over, from the upper to the lower end of the member, as at 35, to form a receiving recess 36 for the back edges of the inner member 21, as hereinafter explained.

The outer member 20 constitutes substantially one vertical half of the body portion of the brake-shoe head and said member is in one integral piece of plate metal cut and pressed to the outline shown, the member 20 in general outline being that of a conventional brake-shoe head and consisting of the flat plate portion 23 having along its back edge the flange 35, along its front portions the laterally bent and extended sections 33, 34, 32 and at its central rear outer face portion the box section 24, forming a chamber 37 for the end of a compression member, not shown, and thereon the angular projection 25 having the opening 26 for a truss-rod and seat 27 for the nut usually on the outer end of a truss-rod, the metal at the forward portion of said box-like section 24 being continued forwardly, as at 30, to constitute an extension or neck of said section 24 and merging into the portion 31 of the forward continuous flange 32. At the adjoining portions of the box-like section 24 and extension or neck 30 thereof are upper and lower shoulders 38 which are continuations of the upper and lower sides of said box-like section and its extension 30 and between which is formed a space for the passage of the outer end portion of the truss-rod.

The flange 32 contains a rivet hole 39 in its upper transverse half and a rivet hole 40 in its lower transverse half.

The inner vertical member 21 of the body of the brake-head has a plain flat face portion 41 corresponding with the outline of the body member 20, and this face portion 41 has flanged outwardly therefrom and toward the middle or inner portion of the brake-beam, a continuous forward edge flange 42 corresponding with the flange 32 of the member 20 and having an inset sec-

tion 43 matching the portion 31 of the flange 32 and providing for the hanger opening 28 and opening 29 for the brake-shoe lug. The plate 41 of the member 21 is also bent laterally, as at 44, and forwardly on an inclined line 45 to meet the laterally bent flange 42, as shown in Fig. 9, these parts corresponding with the sections 33, 34, 32 of Fig. 6, but extending in an opposite direction therefrom, said sections 33, 34, 32 extending outwardly laterally from the outer face of the outer member 20, while the sections 44, 45, 42 of Fig. 9 extend outwardly from the exterior face of the inner member 21 and oppositely to the direction of the bending of the sections 33, 34, 32, whereby the inner portions of the plates 23, 41 of the members 20, 21 are correspondingly deflected in a direction from each other to afford an adequate bearing for the face-plate 22 and provide by the angularity of said bent portions great resisting power in the body portion of the head.

At the back portion of the plate 41 of the member 21, an interior portion of the metal is bent outwardly to form a transverse box-member 46, as shown in Figs. 9 and 10, and this box-member 46 matches at its interior the chamber 37 formed in the box-like section 24 of the member 20, and constitutes a portion of the receiving socket for the outer end of the compression member of the brake-beam. A part of the metal at the forward edge of the opening 47 created by the formation of the box-like section 46 and which metal was displaced in forming said opening, is folded inwardly and forwardly, as at 48, upon that portion 43 of the flange 42, which is at the back of the hanger opening 28, as shown in Figs. 1, 3, 8 and 9, the metal portion 48 not only being bent inwardly along the forward edge of the opening 47 in the member 21, but between its upper and lower edge portions being bent forwardly to engage said portion 43 of the flange 42 and therewith form a double-wall around the back edge of the hanger opening 28, as shown by dotted lines in Fig. 8 and solid lines in Fig. 3. The infolded section 48 at the opening 47 is also, at the forward edge of said opening 47, concaved, as at 49, to form a seat for the truss-rod, the truss-rod having a bearing at the forward edge of the opening 26 therefor in the member 20 and against the seat 49 formed by the folded metal section 48 and also at the edge 50 of the folded section 48, as I indicate by a dotted line 19 in Fig. 2, said dotted line defining the forward edge line of a truss-rod.

The inner member 21 of the body of the brake-head is plain and flat along its entire back edge extending from the upper end of said member 21 to the lower end thereof and this plain edge portion of the member 21 is snugly fitted within the recess 36 which extends along the corresponding edge portions of the outer member 20, whereby the members 20, 21 become matched and interengaged, as illustrated in Figs. 2 and 3. The recess 36 completely encloses the back edge portions of the inner member 21 and prevents any lateral separation of said members. It will be noticed how readily the members 20, 21 may be assembled when it is considered that each member is formed complete in itself and that the assembly consists merely in sliding the back edge portions of the member 21 into the recess 36 of the member 20. After the parts 20, 21 have been brought together the flange 35 may be tightened against the member 20 to firmly bind the members 20, 21 in rigid relation to each other.

The face plate 22 is an elongated plate having openings 51, 52 in its upper and lower end portions for the usual brake-shoe parts and, except at said openings, flanges 53 extending along the ends and sides of said plate, as indicated by dotted lines in Fig. 4 and full lines in Figs. 1, 2 and 3. The flanges 53 are bent in a direction toward the body portion of the head and closely receive and embrace the flanges 32, 42 of the members 20, 21 of said body portion, as shown in Figs. 1, 2 and 3. The flanges 53 are at both the ends and sides of the face plate 22, and hence the face plate become accurately centered upon the flanges 32, 42 of the matched and interlocked members 20, 21 of the body portion of the head. After the members 20, 21 have been brought together, with the edge of the member 21 within the recess 36 of the member 20, and the face plate 22 has been applied against the flanges 32, 42 of said members, the assembly of the head is complete with the exception of riveting the face-plate 22 in place, and to this end I form the face-plate with rivet holes 54, 55 to match the rivet holes 39, 40 in the flange 32 and with rivet openings 56, 57 to match corresponding rivet holes 58, 59 in the flange 42, and secure the several parts together by rivets 18 entered in said matched holes.

The face-plate 22 at its transverse middle portion bends inwardly closely along the recesses 29, 28 provided in the body members 20, 21 for the brake-hanger and for the middle lug on the brake-shoe, as shown in Fig. 1, and at the upper and lower sides of the opening 29 the metal of the face-plate 22 is slit on three sides and bent over to form openings 60, 61 for the brake-shoe key, not shown, the metal removed at the upper side of the lug recess 29 being folded upwardly against the inner face of the face-plate 22, as at 62, and the metal removed from the lower opening 61 being folded downwardly against the inner face of said

face-pate, as at 63, whereby adjacent to said openings the face plate becomes of double thickness and said folded metal sections 62, 63, afford bearings for the middle portion of the brake-shoe key. The folds of the metal at the upper and lower edges of the lug recess 29 also impart considerable strength to the plate at the points at which the shoe lug will contact therewith.

The lateral bends in opposite directions of the members 20, 21 to form the sections 33, 44 and the forward sections 34, 45 of said members afford, when the members 20, 21, are assembled, an adequate key-way 64, as shown in Fig. 2, to receive the usual brake-shoe key, this key-way 64 being in line with the openings 60, 61 in the face plate 22 and at the back of the vertical central portion of said face plate. The face-plate 22 extends continuously along the forward face portions or flanges 32, 42 of the members 20, 21 and lines the recesses 29, 28 formed in said members 20, 21, as shown in Fig. 1. The side portions of the flanges 53 on the face plate 22 serve to resist lateral thrust against said face plate and aid in tying the members 20, 21 of the head together, and the end portions of the flanges 53, which engage the upper and lower edges of the body members 20, 21, are important in resisting strains exerted upwardly or downwardly against said face plate, the flange at the upper end of the plate 22 resisting any force tending to pull the face plate downwardly from the head and the flange at the lower edge of the face plate 22 resisting any force exerted in an upwardly direction on said face plate. The inwardly looped portion 17 on the face-plate lining the recesses or openings 29, 28 and thereat directly engaging the seat flanges 32, 42, also materially aids in enabling the face-plate to resist vertical strains.

The entire brake-head is thus formed of three vertical parts matched and flanged together and secured in their assembled relation by the flanges and the presence of four rivets securing the face-plate of the head to the body members thereof, and the head thus produced is devoid of transverse joints and of great efficiency in that it is capable of withstanding all the strains to which brake shoe heads are subjected in modern railway practice and equipment.

The brake-shoe head shown in Fig. 11 is identical with the brake-shoe head illustrated in Figs. 1 to 10 inclusive with the exception that I provide in the head shown in Fig. 11 an additional hanger-recess 65 for use in equipments in which the wheel-base dimensions render the upper recess 65 necessary or desirable. In forming the recess 65, portions of the flanges 32, 42 of the body members 20, 21 are carried inwardly, as at 66, to outline the recess 65 and the face plate 22 is correspondingly carried inwardly in its upper half, as at 67, to wall said recess 65 and engage the inset portions 66 of said flanges. The face-plate 22 at the upper and lower sides of the forward portion 68 of the recess 65 are formed with openings 69 for the passage of the brake-shoe key. The head shown in Fig. 11 will have both the hanger opening 28 and the hanger opening 65 so that the head may be used interchangeably in equipments requiring the hanger opening 28 and those requiring the upper hanger opening 65. The head shown in Figs. 1 to 10 having been so fully described, it is believed further detailed description of the head shown in Fig. 11 is not required, since both heads are alike in all details with the exception hereinbefore noted. I will however apply to Fig. 11 a few of the reference numerals from Fig. 1 applicable thereto.

The face plate of Figs. 11 and 12 is the same as the face-plate 22 shown in Figs. 1 and 4, with the exception that it has the inset portion 67 and key-openings 69 incident to providing the upper hanger-opening or recess 65.

In Figs. 13, 14, I illustrate the head of Fig. 1 equipped with an upper hanger opening 70 extending transversely through the side plates 23, 41 of the head. In forming the opening 70, I force the metal in the plates 23, 41 in the zone of the opening outwardly in opposie directions and curl the flanges thus formed to surround the opening, as indicated at 71, 72 in Fig. 14, whereby the opening becomes formed and its edges are broadened, rounded and reinforced. Since the head shown in Figs. 13 and 14 differs from the head shown in Figs. 1 to 10 inclusive only in respect to the additional hanger opening 70, it is believed that further description with respect to Figs. 13 and 14 is unnecessary. I will, however, identify some of the features of Figs. 13 and 14 with the reference numerals applicable thereto from the head shown in Figs. 1 and 2.

In the several forms of my invention shown there is no departure from the main principle of my invention, each head shown being of forged metal and having the two vertical substantially equal body members 20, 21 and face plate 22 and each head being devoid of transverse joints and constructed with the view of fully withstanding the great strains to which in modern railway equipment brake-shoe heads are subjected.

I do not limit the invention to all of the details of form and arrangement hereinbefore described, since these will vary with special requirements, as, for illustration, the socket formed in the head for the end of the compression member must have a shape to closely receive the end of the compression member made use of whether that member

defines a square in cross section or has a rounded back surface or otherwise varies in cross-section.

I have also referred to rivets 18 for securing the face-plate to the body-portion of the head, and in lieu of rivets spot-welding may be used as a substitute therefor.

I prefer to secure the members 20, 21 together along their back edges by means of the turned-over and closed flange 35, but I am aware that said members may be secured together, with probably less convenience and advantage, by means other than a folded-over flange.

Where in the claims I refer to a tension member nut or a nut-seat, I do not limit the claims to the presence of a nut on the tension member but only to a seat adapted to receive a tension member or truss-rod nut or such means as may be provided for securing the rod in place, as, for instance, by heading its end instead of using a nut. I may add also that I do not limit my invention to an inclined nut-seat, since in some brake-beams the ends of the truss rod lie parallel with the ends of the beam member and in such beams the nut-seats are flat and parallel with the outer faces of the heads.

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

1. A brake-shoe head having a forged metal body portion and a face-plate secured thereto, said body portion comprising an integral vertical plate outer member and an integral vertical plate inner member, said members being matched together and bent laterally from each other and then forwardly and then laterally flanged at their forward portions to form a key-way and a seat, at said flanges, for the face-plate, and said members being recessed inwardly in their forward portions to provide a hanger opening and a shoe lug opening, said seat and said face-plate conforming to and following the outline of said recess and said face-plate being formed above and below the lug-opening with openings to permit the passage of the shoe securing key.

2. A brake-shoe head as defined in claim 1, in which the metal portions displaced by forming the openings in the face plate above and below the said lug-opening are integral at their forward edges with the face plate and folded upwardly and downwardly, respectively, against the inner face of said plate to form seats for the shoe-key and strengthen the face plate at the upper and lower outer edges of the lug opening.

3. A brake-shoe head as defined in claim 1, in which the face-plate is riveted at opposite side portions to the seat afforded by said vertical members and has at its upper and lower ends flanges which embrace the upper and lower ends of said body portion.

4. A brake-shoe head as defined in claim 1, in which the face-plate has side flanges which embrace the side edges of the seat afforded by said vertical members.

5. A brake-shoe head as defined in claim 1, in which the face-plate is riveted to said body portion and has flanges at its upper and lower ends and along its sides to closely receive and enclose the upper, lower and side edges of the seat for said plate afforded by said vertical members.

6. A brake-shoe head having a forged metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate and at their back portions being formed with a socket to receive the end of a compression member.

7. A brake-shoe head having a forged metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate and at their back portions being formed with a socket to receive the end of a compression member and the end of a tension member and with an opening for the end of said tension member and an inclined seat at said opening for a securing nut on the tension member.

8. A brake-shoe head having a forged metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate, one of said plate members at its back edges being flanged over and embracing the back edges of the other plate member.

9. A brake-shoe head having a forged metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate and at their back portions being transversely boxed outwardly in opposite directions to form a socket to receive the end of a compression member.

10. A brake-shoe head having a forged metal body portion and a forged metal face-

plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate and at their back portions being transversely boxed outwardly in opposite directions to receive the adjoining ends of a compression member and a tension member, the box portion on the outer body member having an opening for the tension member and an angular nut-seat about said opening.

11. A brake-shoe head having a forged metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate and at their back portions being adapted to receive the end of a compression member.

12. A brake-shoe head having a forged metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate and at their back portions being adapted to receive the end of a compression member and the end of a tension member and having a seat for the tension member nut.

13. A brake-shoe head having a forged metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate and at their forward edges being flanged outwardly in opposite directions to provide a seat for said face-plate and to which the plate is riveted, and one of said plate members at its back edges being flanged over and embracing the back edges of the other plate member.

14. A brake-shoe head having a forged metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being notched together and forming a key-way beween their forward portions back of said face-plate and said members being flanged laterally in opposite directions at their forward edges to form a seat for said face-plate and recessed inwardly to provide a hanger opening and to receive a shoe-lug, the flanges and face-plate conforming to said recess, said outer side member having a laterally projecting box formation at the rear portion of its outer face, and said inner plate member having a matching box formation projecting in an opposite direction from its exterior face, and said box formations providing a socket to receive the end of a compression member.

15. A brake-shoe head having a forged metal body portion and a forged metal face plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being substantially coequal in height and transverse dimensions and forming a body portion which is integral except for the vertical joint between said members, said members at their forward portions forming a key-way and in their back portions having a socket formed therein for the end of a compression member.

16. A brake-shoe head having a forged metal body portion and a forged metal face plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being substantially coequal in height and transverse dimensions and forming a body portion which is integral except for the vertical joint between said members, said members at their forward portions forming a key-way and in their back portions having a socket formed therein for the end of a compression member and the end of a truss-rod, said socket being formed by a laterally extending hollow open box-like member integral with said inner side member and projecting laterally from the exterior face thereof and by a matching hollow box member integral with said outer side member and projecting laterally from the outer face thereof and having an angularly deflected outer end formed with an opening for the truss-rod and a seat for the truss-rod nut.

17. A brake-shoe head as defined in claim 16, in which an integral portion of the metal used for the inner plate member is folded in at the inner forward edge of the box of said member and forms a seat for the truss rod.

18. A brake-shoe head as defined in claim 16, in which an integral portion of the metal used for the inner plate member is folded into the forward side of the box of said member and concaved and forms a seat for the truss rod.

19. A brake-shoe head having a forged

metal body portion and a forged metal face-plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being matched together and forming a key-way between their forward portions back of said face-plate and said members being flanged laterally in opposite directions at their forward edges to form a seat for said face-plate and recessed inwardly to provide a hanger opening and to receive a shoe-lug, the flanges and face-plate conforming to said recess, said outer side member having a laterally projecting box formation at the rear portion of its outer face and an extension thereof of less width extending to the flanges at the rear edge of said hanger opening, and said inner plate member having a matching box formation projecting in an opposite direction from its exterior face, and said box formations providing a socket to receive the end of a compression member.

20. A brake-shoe head having a forged metal body portion and a forged metal face plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being substantially coequal in height and transverse dimensions and forming a body portion which is integral except for the vertical joint between said members, said members at their forward portions forming a key-way, in their back portions having formed therein a socket for the end of a compression member and in their transverse portions a lower brake-hanger opening and an upper brake-hanger opening.

21. A brake-shoe head having a forged metal body portion and a forged metal face plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being substantially coequal in height and transverse dimensions and forming a body portion which is integral, except for the vertical joint between said members, said members at their forward portions forming a key-way, in their back portions having formed therein a socket for the end of a compression member and in their transverse portions a lower brake-hanger opening and an upper brake-hanger opening, said openings being formed by recesses in the forward edge portions of the said body portion and said face plate conforming to and lining said openings.

22. A brake-shoe head having a body-portion and a forged-metal face-plate rigidly secured thereto and adapted to receive a brake-shoe, said body-portion having a forward seat for said face-plate, a key-way back of said face-plate for a shoe-securing key and an inwardly extending transverse recess to provide a hanger opening and to receive a shoe-lug, and said face-plate extending into and lining said recess, including the said hanger opening and to take the hanger, and having openings in line with said key-way for the passage therethrough of said key.

23. A brake-shoe head having a body-portion and a forged-metal face-plate rigidly secured thereto and adapted to receive a brake-shoe, said body-portion having a forward seat for said face-plate, a key-way back of said face-plate for a shoe-securing key and an inwardly extending transverse recess to provide a hanger opening, and said face-plate extending into and lining said hanger opening and to take the hanger, and having openings in line with said key-way for the passage therethrough of said key.

24. A brake-shoe head having a body-portion and a forged-metal face-plate rigidly secured thereto and adapted to receive a brake-shoe, said body-portion having a forward seat for said face-plate, a key-way back of said face-plate for a shoe-securing key and an inwardly extending transverse recess to provide a hanger opening and to receive a shoe-lug, and said face-plate extending into and lining said recess, including the hanger opening and to take the hanger, and having openings in line with said key-way for the passage therethrough of said key, and said face-plate along its opposite side edges being flanged backwardly to embrace the forward side edges of said body-portion, thereby to resist lateral thrusts, and the extreme upper and lower transverse ends of said face-plate being flanged over backwardly to lap upon the upper and lower ends of said body-portion, thereby to resist lengthwise thrusts.

25. A brake-shoe head having a forged metal body portion and a forged metal face plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being substantially coequal in height and transverse dimensions and secured together in face to face relation, thereby forming a forged metal body portion which is integral except for the vertical joint between said members.

26. A brake-shoe head having a forged metal body portion and a forged metal face plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being substantially coequal in height and transverse dimensions and secured together in face to face relation,

thereby forming a forged metal body portion which is integral except for the vertical joint between said members, and said face-plate being secured to both of said body members and crossing said vertical joint.

27. A brake-shoe head having a forged metal body portion and a forged metal face plate secured thereto and adapted to receive a brake-shoe, said body portion comprising a integral vertical plate outer side member and an integral vertical plate inner side member, said members being substantially coequal in height and transverse dimensions and secured together in face to face relation, thereby forming a forged metal body portion which is integral except for the vertical joint between said members, and said face-plate crossing said vertical joint and being secured to said body members at each side thereof and having end and side flanges receiving the forward end and side edges of said body portion.

28. A brake-shoe head having a forged metal body portion and a forged metal face plate secured thereto and adapted to receive a brake-shoe, said body portion comprising an integral vertical plate outer side member and an integral vertical plate inner side member, said members being substantially coequal in height and transverse dimensions and forming a body portion which is integral except for the vertical joint between said members, said members at their forward portions forming a key-way and in their back portions having a socket formed therein for the end of a compression member and the end of a truss rod and said outer side member having an opening therein for the projection of the end of said rod and a seat at said opening for the means securing said rod.

Signed at New York city, in the county of New York and State of New York, this 18th day of October, A. D. 1922.

SETH A. CRONE.