

P. B. HARRISON.
BRAKE HEAD FOR RAILWAY CARS.
APPLICATION FILED MAY 12, 1911.

1,017,053.

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Fig. 1.

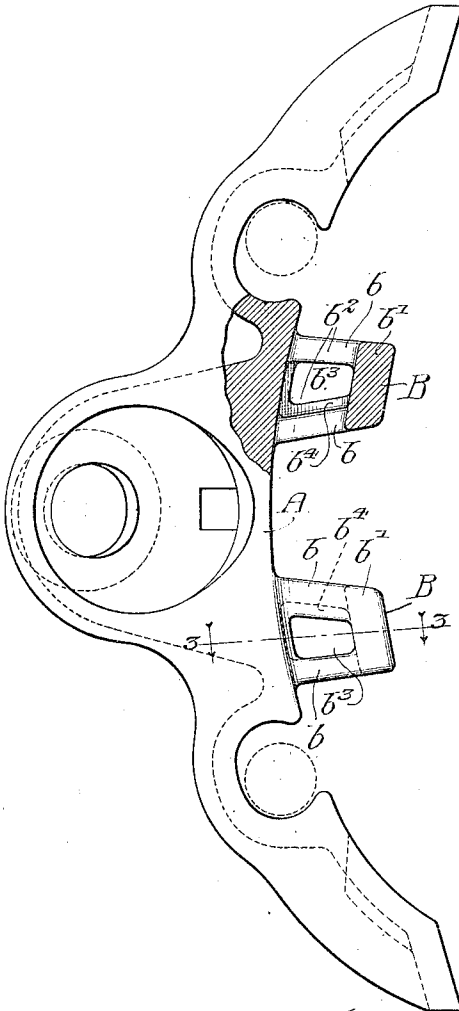


Fig. 2.

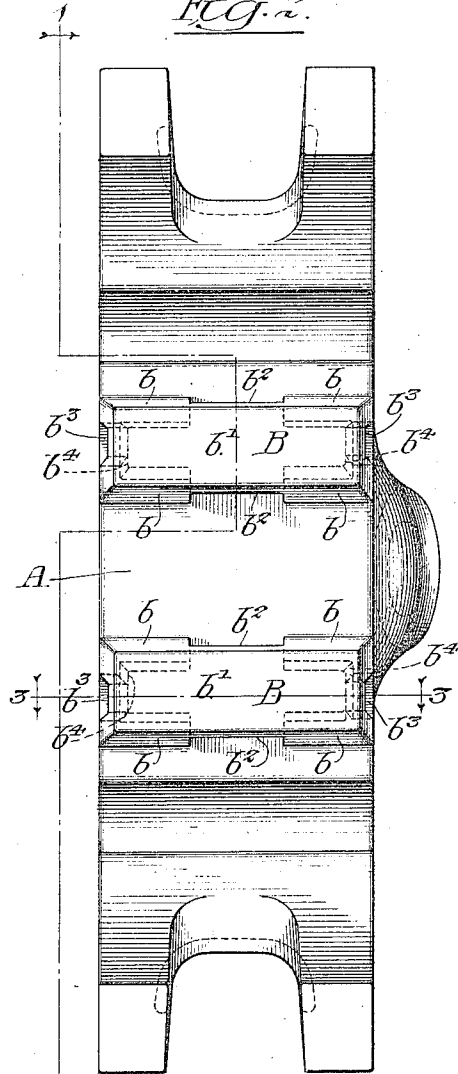
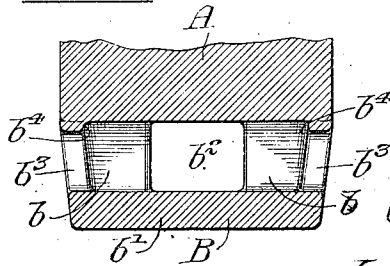


Fig. 3.



Witnesses:-

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UNITED STATES PATENT OFFICE.

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BRAKE-HEAD FOR RAILWAY-CARS.

1,017,053.

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To all whom it may concern:

Be it known that I, PHILIP B. HARRISON, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Brake-Heads for Railway-Cars, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

Figure 1 is a view partly in side elevation and partly in section on line 1—1 of Fig. 2, showing a brake head embodying my invention. Fig. 2 is a face view of the brake head. Fig. 3 is a view in transverse section on line 3—3 of Fig. 2.

My invention relates to that class of brake heads, commonly known as the "Christie" type, in which lugs are employed to support and fasten the brake shoe to the head. Brake heads of this general type have for a number of years past been very extensively used and adopted as a standard by the Master Car Builders' Association.

With the advent of heavier cars, at higher speeds of travel, it has been found necessary to materially increase the braking power or pressure applied to the car wheels to control and stop the trains. For this reason, and as well also because of the extensive use of the now familiar "steel back" brake shoes which are adapted to be worn down to a minimum extent, it has become highly desirable to give to the brake shoe a broader, stronger and more efficient bearing surface against the head.

The object of the present invention is to provide the brake head with broad and strong lugs which shall most effectively serve in supporting the brake shoe and sustaining the braking thrusts thereon.

To this end, the invention consists in the features of novelty hereinafter described, illustrated in the accompanying drawing and particularly pointed out in the claims at the end of this specification.

The body A of the brake shoe is of the familiar "Christie" type and integral with this body A are cast shoe retaining lugs B. Each of the lugs B comprises leg portions b and a bridge b' connecting these leg portions and forming with them the bearing surface of the lug. The space between the leg portions of each lug and between the bridge

portion and the body of the shoe constitutes the key-hole or key-way b² of the lug and is adapted to receive any suitable type of key for fastening the brake shoe to the brake-head.

Heretofore it has been the common practice to form the lugs of the brake-head with solid leg portions and in brake-heads as heretofore constructed the lugs have extended but partially across the face of the brake-head. In the present invention, each of the lugs is chambered, that is to say, each of the lugs is formed with a chamber or channel b³ that preferably extends from the key-hole or key-way of the lug to and through the outer end thereof. By preference, also, the outer portions of each of the chambers or channels b³ of the lugs are formed with flanges b⁴ at their outer ends, although this is not essential. The bearing face of each lug is of substantially rectangular shape and the lug extends from side to side of the brake-head and the bearing face of the lug is of substantially uniform width; that is to say, instead of forming the lugs narrower than the face of the brake-head and providing the ends of the lugs with notches extending from the body of the brake-head to and through the bearing surface of the lug, the width of the bearing face of the lug is substantially rectangular and uniform from front to back.

By forming the leg portions of the lugs with chambers or channels, the metal of these leg portions is of approximately uniform thickness, and this is a decided advantage for a number of reasons. In the operation of casting the brake-head, it has been found in practice that there is much less danger of the formation of gases and the "blowing" of the casting than where the leg portions of the lugs are formed solid. Moreover, a more equal distribution of metal being secured by the chambering of the leg portions of the lugs, a correspondingly more uniform shrinkage of the metal will occur and the danger of cracking, incident to irregular shrinkage, is avoided. This is especially important in order to avoid any breaking of the lugs and consequent loss of shoes that might cause serious accident on modern high speed trains with the extreme braking pressure used. So, also, by forming the leg portions of the lugs with channels, the cores for these portions can be

formed with the cores whereby the key-holes or key-ways of the lugs are formed, and the work of the core-maker is thus very materially reduced and the face of the
5 brake-head can be "coped" clear to the bottom, thereby enabling the face to be cast against the green sand of the mold so that a very smooth surface is given to the casting.

10 It will thus be seen that by forming the lugs of the brake-head in manner as above described, not only can the lugs be made with much less danger of cracking, and without blow-holes therein, but greater
15 strength is given to the lugs, and by forming the bearing face of the lugs of substantially rectangular shape and uniform width, and by extending them from side to side of the brake-head, a wider and more effective bearing surface is presented to engage
20 the back of the brake-shoe.

It is manifest that the precise details above set out may be varied without departing from the spirit of the invention.

25 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. A brake head having a shoe attaching
lug formed with leg portions and with a
30 bridge connecting said leg portions to form a keyhole, said leg portions having chambers and having the bearing surface of the lug extending across said chambers.

2. A brake head having a shoe attaching

lug formed with leg portions and with a 35 bridge connecting said leg portions to form a keyhole, said leg portions being formed with open chambers and having the bearing surface of the lug extending across said chambers. 40

3. A brake head having shoe attaching lugs provided with key holes therethrough and having channels extending from the sides of said key-holes.

4. A brake-head having a shoe attaching 45 lug formed with leg portions and with a bridge connecting said leg portions to form a key-hole, said leg portions being provided with channels extending from the key-hole to the outer sides of the lugs. 50

5. A brake head having shoe attaching lugs each formed with leg portions and with a bridge connecting said leg portions to form a key-hole, said leg portions of the lugs being provided with channels extending 55 from side to side of the brake-head.

6. A brake head having a shoe attaching lug extending from side to side of the brake head, said lug having a broad bearing face of substantially rectangular shape and uniform width, the leg portions of said lug being chambered at each side of the key-hole of the lug.

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Witnesses:

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