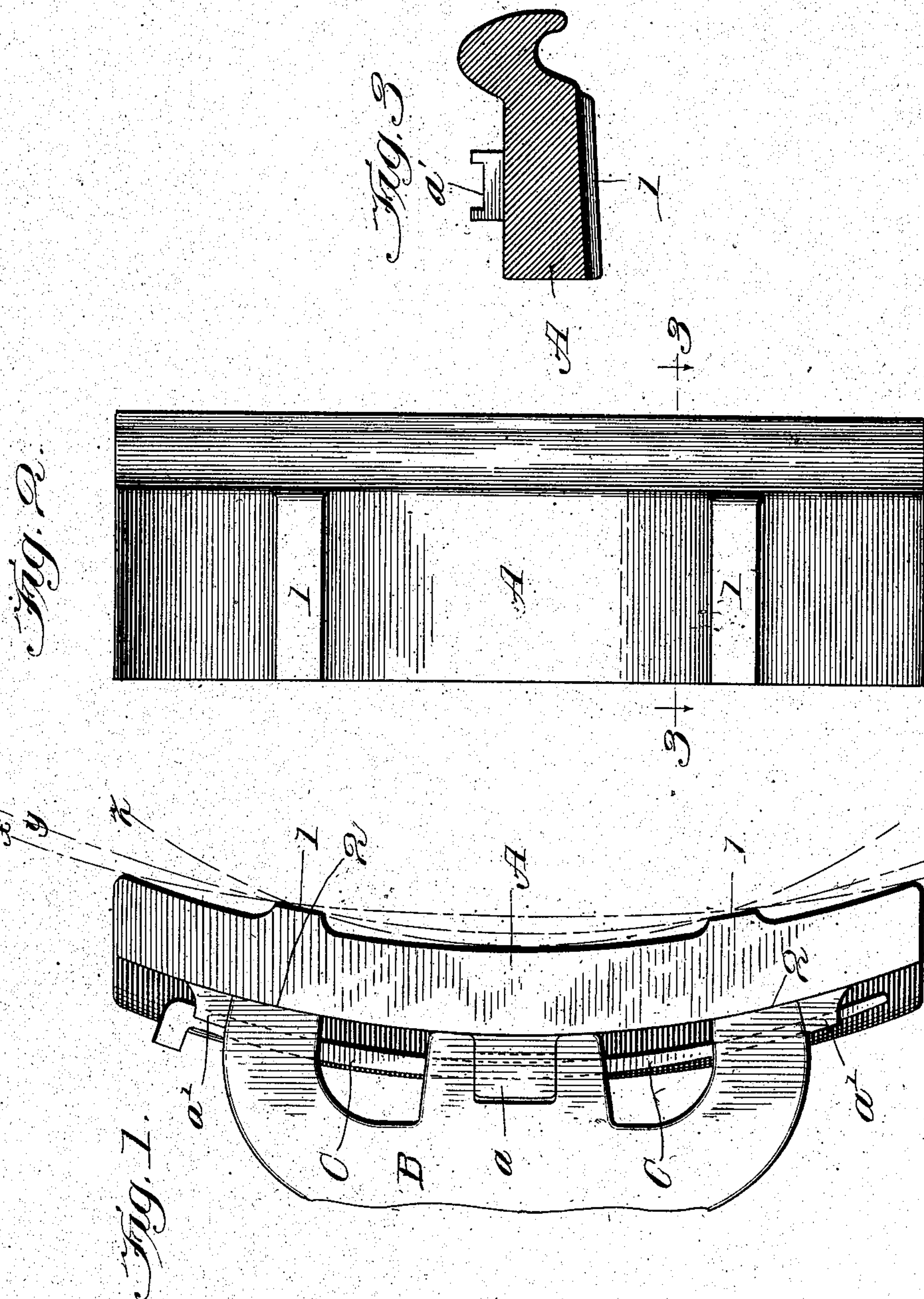


No. 815,612.

PATENTED MAR. 20, 1906.

W. G. MENZEL.
BRAKE SHOE.

APPLICATION FILED JUNE 26, 1905.



Witnesses:
H. S. Gaitan
and H. Fagel.

Inventor:
William G. Menzel
by Geo. E. Valdo
att'y

UNITED STATES PATENT OFFICE.

WILLIAM G. MENZEL, OF FOND DU LAC, WISCONSIN, ASSIGNOR OF ONE-HALF TO CHARLES W. BOOTH, OF MILWAUKEE, WISCONSIN.

BRAKE-SHOE.

No. 815,612.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed June 26, 1905. Serial No. 267,064.

To all whom it may concern:

Be it known that I, WILLIAM G. MENZEL, a citizen of the United States, and a resident of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

This invention relates to brake-shoes.

10 The object of the invention is to provide a brake-shoe adapted for use on wheels of materially different diameters—say, for example, driver-wheels ranging in diameter from forty-eight inches to seventy-two inches—
15 thereby providing for using a single pattern of shoe on the different diameters of wheels instead of a different pattern on each different diameter of wheel. The practical advantages of this feature are, first, that it will necessitate carrying a very small stock of brake-shoes comparatively, and, second, convenience in selecting a shoe for use on any particular wheel and elimination of all possibility of mistakes through the selection of a shoe of
25 the wrong pattern.

To this end a brake-shoe of my invention consists of the various features, combinations of features, and details of construction hereinafter described and claimed.

30 In the accompanying drawings, in which a brake-shoe of my invention is fully illustrated, Figure 1 is a side view of a brake-shoe of my invention, together with a brake-head in which said brake-shoe is secured. Fig. 2
35 is a plan view of the face or friction-surface of a shoe of my invention, and Fig. 3 is a sectional view thereof on the line 3 3 of Fig. 2.

In practice the most common application of my invention will be to driver-brake shoes, for the reason that driver-wheels are made of widely-varying diameters, whereas ordinary car-wheels are commonly made of substantially the same diameter. For purposes of illustration, therefore, I have shown my invention as embodied in a driver-brake shoe.
45

Referring now to the drawings, A designates the body portion of a driver-brake shoe, a the attaching-lug, and a' the guide-lugs thereof, and B a brake-head in which said
50 brake-shoe is secured by means of a key C. All of the foregoing parts may be of any desired or approved construction as regards their usual features and will be readily understood by persons familiar with the art from

an inspection of the drawings without a detailed description thereof. 55

The curve of the face or friction-surface of the brake-shoe is approximately half-way between the curves of the treads of the largest and smallest wheels on which the shoe is designed for use, and formed on the face or friction-surface of the brake-shoe are transverse ribs or projections 1. The height of said projections 1 is such that when the shoes are first applied they will within the designed limits
60 of use hold the face of the shoe out of contact with the tread of the wheel, and they are so located that the power exerted in applying the brakes will be transmitted in direct lines through them, being preferably directly opposite to the brake-head bearings 2 on the back of the shoe. Preferably also the height of said ribs or projections is such that treads of the largest and smallest wheels on which the shoe is designed for use will just contact
75 with the face or friction-surface of the shoe, the smallest wheel at the center of the shoe and the largest at the ends of said shoe. As said ribs or projections wear, therefore, the face or friction-surface of the shoe will gradually come into full bearing with the treads of the wheel, except in the case of wheels the curve of the treads of which is the same as that of the face or friction-surface of the brake-shoe, in which case the face or friction-surface of the brake-shoe will not come into contact with the tread of the wheel until said ribs or projections are entirely worn off and will then come at once into full bearing therewith. For the purpose of illustrating the described relation I have in Fig. 1 of the drawings indicated by the dotted lines x, y, and z the curves of the treads of wheels of the largest, mean, and smallest diameters, respectively, on which the brake-shoe is designed
95 for use.

The ribs or projections 1 are preferably made of soft cast-iron and are narrow, say from one to two inches wide. They will thus wear down quickly, so as to bring the brake-shoe into full bearing with the wheel at points in line with the bearings of the brake-shoe on the brake-head, while at the same time affording sufficient support to said shoe at points remote from its point or points of initial contact with the wheel to practically eliminate all shearing stresses in said shoes in operation. 100 105

In brake-shoes embodying my invention the body portion A is preferably made of standard thickness throughout, the ribs or projections 1 forming extensions above the face or friction-surfaces thereof. In this manner the full life of the shoe is secured.

I claim as my invention—

1. A brake-shoe having two ribs or projections on its face or friction-surface one between the center and each end thereof.

2. A brake-shoe having two ribs or projections on its face or friction-surface so located that the power exerted in applying the brakes will be exerted directly through them.

3. A brake-shoe having two ribs or projections on its face or friction-surface one lo-

cated substantially in line with each brake-head bearing on the back of the shoe.

4. A brake-shoe the face or friction-surface of which is a curve of mean radius, said shoe having two ribs or projections on its face or friction-surface one located substantially in line with each brake-head bearing on the back of the shoe.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two subscribing witnesses, this 24th day of June, A. D. 1905.

WILLIAM G. MENZEL.

Witnesses:

I. W. McPHERSON,
C. W. ANDERSON.