(No Model.)

J. N. MILEHAM.

BRAKE SHOE.

No. 357,284. Patented Feb. 8, 1887.

Fig. 1.

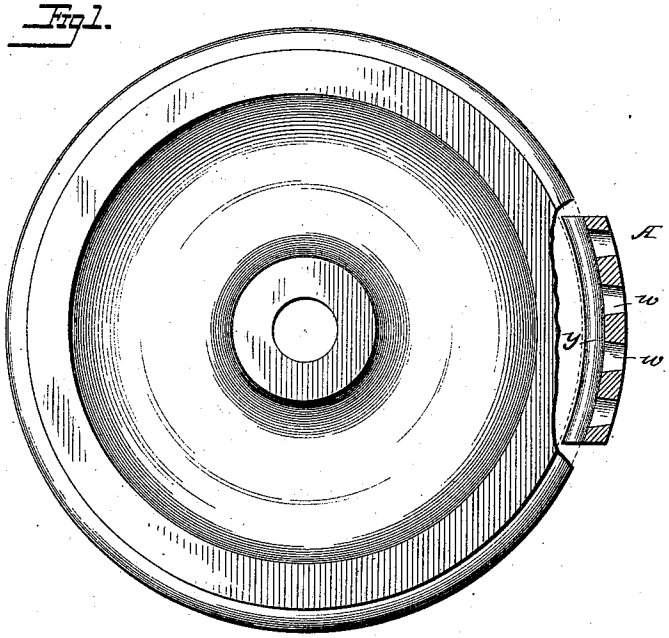


Fig. 3.

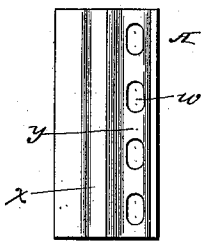


Fig. 4.

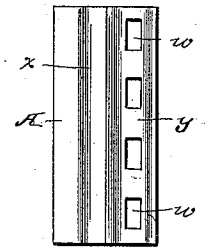


Fig. 2.

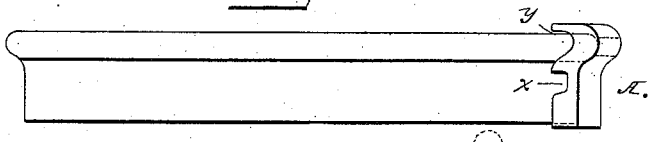


Fig. 7.

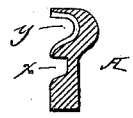


Fig. 5.

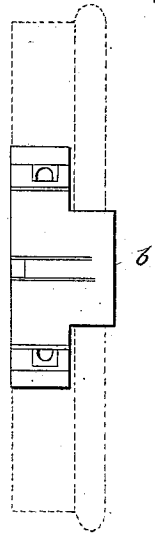
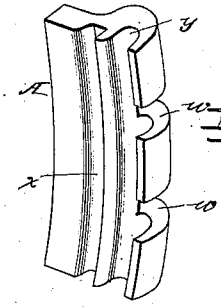


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSEPH N. MILEHAM, OF JERSEY CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF TO WILLIAM W. SNOW, OF RAMAPO, NEW YORK.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 357,284, dated February 8, 1887.

Application filed December 2, 1886. Serial No. 220,496. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH N. MILEHAM, a citizen of the United States, residing at Jersey City, Hudson county, New Jersey, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

My invention relates to that class of brake-shoes in which there is a groove in each shoe to receive the flange of the car-wheel; and it consists in constructing the shoe so as to reduce the length or continuity of the surface connecting with the flange, to permit the free access of air and the ready escape of particles lodging in the groove, and to prevent the heating of the flange and the fractures resulting from the sudden cooling thereof.

In the drawings, Figure 1 is a side view of a car-wheel, partly broken away, and section of a brake-shoe, illustrating my improvement. Fig. 2 is a plan of the wheel and shoe. Fig. 3 is an outer rear face view of the shoe; Fig. 4, an outer face view of a shoe having rectangular openings. Fig. 5 is an outer face view, and Fig. 6 a perspective view, and Fig. 7 a transverse sectional view, of shoes illustrating modifications.

In the use of that class of brake-shoes illustrated in the Letters Patent granted to G. B. Ross on the 5th day of February, 1884, in which there is a groove to receive the flange of the wheel, the latter is apt to be injured from sudden variations of temperature, resulting from the action of the shoe. Thus when such a shoe is applied forcibly to the wheel the comparatively thin flange, moving at a great speed, is brought into forcible frictional contact at its edge and both sides with the corresponding closely-fitting faces of the groove, and particles of hard dust and of iron or steel worn from the surface of the shoe or wheel lodge in the groove and are ground between the contacting surfaces, so increasing the friction as to rapidly heat the narrow rim to a high temperature. On the removal of the brake the flange of the wheel, exposed suddenly on all parts to the air, cools quickly and is suddenly and unequally contracted, this contraction resulting in small radial cracks, which greatly impair the strength of the wheel. In order to avoid these detrimental results and yet secure the advantages of the Ross form of brake-shoe, I reduce the length of the surface or surfaces contacting with the flange, so that the air can get to the flange at intervals, and so that any particles lodging between the contacting surfaces may have an opportunity of escaping before being carried any great distance. By this means I reduce the friction, and consequently the heating effect, and I also cool the flange by the admission of air. The shoe may be differently constructed to thus reduce the continuity of the flange-contacting face of the shoe.

In Figs. 1, 2, and 3 the shoe A is illustrated as provided with the bearing *a*, head-groove *x*, and flange-groove *y*, as in the Ross brake-shoe, and also with a series of horizontal openings, *w w*, which extend outwardly from the groove *y* and admit air to the flange, permit the escape of particles, and also divide the face contacting with the flange into short lengths.

In Fig. 4 the construction is the same, except that the openings *w* are rectangular.

In Fig. 5 the part *b* of the shoe in which the groove *y* is formed is shorter than the shoe, permitting the air to reach the flange above and below the short part *b*, and reducing the length of the contacting face.

In Fig. 6 the part having the groove *b* therein is slotted completely across at intervals. In each case the effect is the same, the length or continuity of the frictional surface in contact with the flange being broken and the air being admitted freely to the flange.

Instead of extending the openings radially to the outside of the shoe, they may be in the form of lateral grooves, as shown in Fig. 7.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. A brake-shoe having a groove to receive and fit the flange of a car-wheel and provided with a contacting face shorter than that of the main body of the shoe, substantially as described.

2. A brake-shoe having a groove to receive the car-wheel flange, the contacting surface

with said flange being reduced in length by one or more channels or openings, substantially as described.

3. A car-brake shoe having a groove to receive the flange of the wheel, and provided with openings or channels *w*, substantially as and for the purpose set forth.

4. The combination, with a car-wheel, of a brake-shoe having a groove receiving the flange of the wheel, the contacting surface with the flange being shorter than that contacting with the tread of the wheel, substantially as and for the purpose set forth.

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

JOSEPH N. MILEHAM.

Witnesses:

THOMAS ALDRIDGE,

WILLIAM G. COLE.