

No. 706,147.

Patented Aug. 5, 1902.

R. D. BALDWIN.
BRAKE SHOE LUBRICATING FILLER.

(Application filed Oct. 26, 1901.)

(No Model.)

Fig. 1.

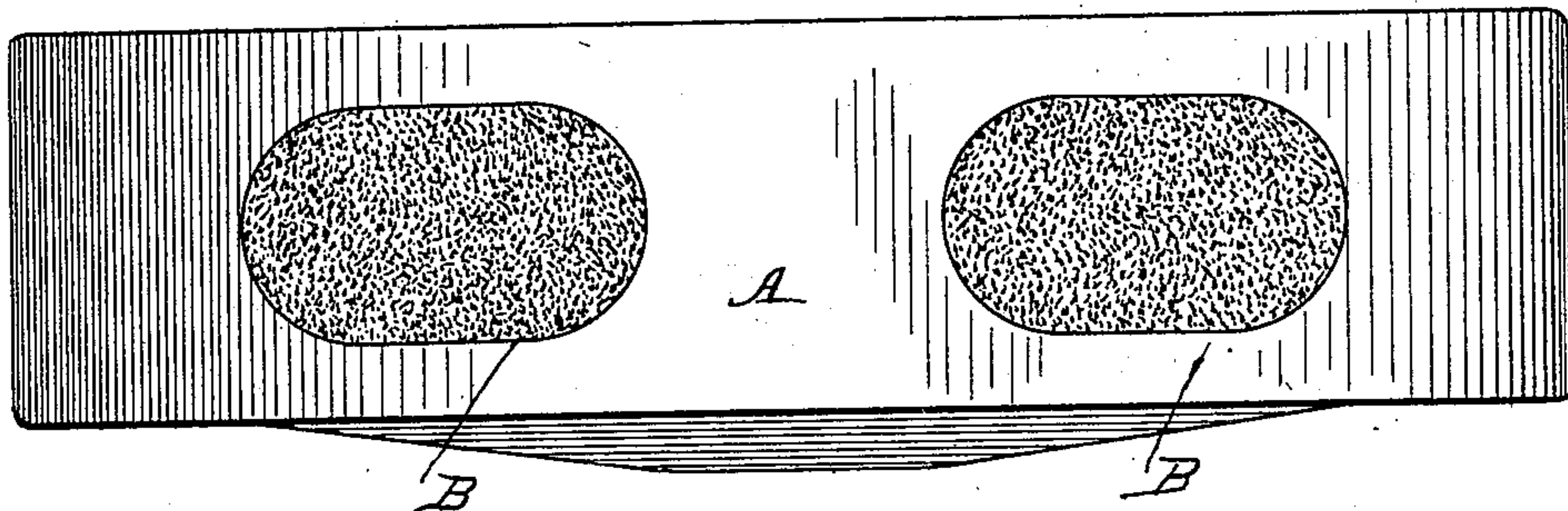
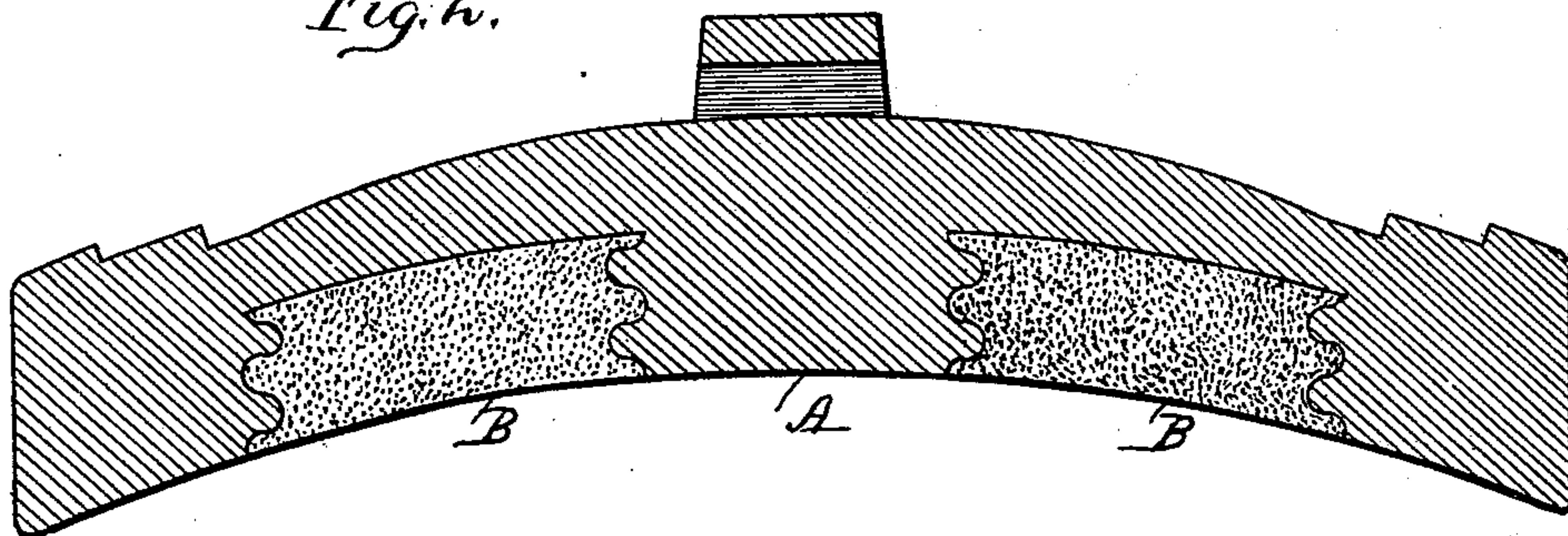


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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BRAKE-SHOE-LUBRICATING FILLER.

SPECIFICATION forming part of Letters Patent No. 706,147, dated August 5, 1902.

Application filed October 26, 1901. Serial No. 80,062. (No specimens.)

To all whom it may concern:

Be it known that I, RICHARD D. BALDWIN, a resident of Chicago, in the county of Cook, State of Illinois, have invented a certain new
5 and useful Brake-Shoe-Lubricating Filler, of which I do declare the following to be a full, clear, and exact description.

In practice it has been found that with ordinary cast-iron brake-shoes, and indeed with
10 brake-shoes having steel or soft-iron inserts, the sudden setting of the brakes, as in cases of emergency, tends to lock the brake-shoes upon the wheels, and thus cause the skidding of the wheels upon the rails. The result of
15 this is not only a serious injury to the wheels, but the efficiency of the brake-shoes is thereby materially impaired. In order to overcome the objections incident to the ordinary cast-iron brake-shoes, it has been heretofore
20 proposed to provide brake-shoes with one or more pockets containing composition fillers of various kinds. Such fillers, however, have been open to more or less objection. Thus, for example, it has heretofore been proposed
25 to employ a composition consisting of comminuted iron, asphaltum, and Wahsatch rock. Such filler has in practice, however, proven worthless for a variety of reasons. One serious objection to such composition
30 filler is that the asphaltum cokes and becomes brittle under the high degree of heat to which the brake-shoes are subjected in service. Another objection is that the asphaltum when it sets within the pockets of the brake-shoe
35 does not securely adhere to the metal of the shoe, but tends to shrink away therefrom, so that it is with difficulty retained within the pockets.

The object of my present invention is to provide a lubricating composition filler or insert
40 of such character that the efficiency of the action of the brake-shoes will be materially increased.

It will be readily understood that my improved lubricating-filler may be applied to
45 different kinds of brake-shoes, the filler being preferably placed in the pockets or openings of the wearing-faces of the shoes.

In the accompanying drawings, Figure 1 is

a face view, and Fig. 2 represents a view in
50 longitudinal section through a brake-shoe having my invention applied thereto; but it will be understood that the invention relates to the composition filler regardless of the particular construction of shoe in connection with
55 which such composition filler is used.

Referring to the drawings, A designates the body of the brake-shoe, and B denotes the composition filler or insert. In the preferred
60 practice of my invention the composition consists of the following ingredients and in substantially the following proportions, viz: cast-iron borings, filings, or like comminuted particles of iron or steel, five hundred and four-
65 teen pounds; resin, sixty pounds; pine-tar pitch, two and one-half pounds; tallow, two and one-half pounds; alum, one and one-half pounds. In preparing this mixture I preferably melt the pine-tar pitch, the tallow, and
70 the resin together. The iron borings are then heated to a temperature of, say, 200° Fahrenheit, after which the alum in powdered form will be mixed with the borings. Then the melted tallow, pine-tar pitch, and resin will
75 be poured onto the iron-borings, and the whole mass will be thoroughly stirred until the ingredients are thoroughly mixed and until the mass is of uniform character. The composition thus formed, and before it sets, will at
80 once be placed in the pockets or openings of the brake-shoes. It will be tamped into the pockets of the shoes and then will be compacted therein under hydraulic pressure. Preferably the mass is kept at a temperature
85 of about 200° Fahrenheit until placed within the shoes, after which it is allowed to cool and set.

In practice I have found that the above-mentioned composition forms a most effective
90 lubricating-filler for brake-shoes. The iron-borings comprising the body of the filler composition resist the too-rapid wear of the shoes, while under the excessive heat developed when the brakes are set the resin, the pine-
95 tar pitch, and the alum form, as I understand it, a lubricating-film which prevents the skidding of the wheels, while allowing a most effective action of the brakes. The alum gives

greater hardness to the composition and reduces the melting-point and also aids in effectively welding the mass together.

I have discovered that pine-tar pitch presents marked advantages over asphaltum and as well also over coal-tar pitch as a binder for the comminuted iron—first, because it renders the mass far more cohesive and less brittle than either asphaltum or coal-tar pitch; second, it possesses the peculiar quality of adhering to the walls of the pockets wherein the composition filler is placed, and, third, it does not coke and disintegrate under the intense heat to which the brake-shoes are subjected, particularly where the shoes are set upon long grades.

With brake-shoes provided with my improved filler composition the sudden setting of the brakes produces a friction between the shoes and the wheels, the intense heat of which causes the composition to distribute over the tread of the wheel a lubricating-film that prevents the dead-locking of the brake-shoes on the wheels, and consequently avoids the skidding of the wheels, while at the same time insuring the effective action of the brakes. With ordinary brake-shoes if the brakes are set so that the shoes bear upon the wheels for any considerable length of time there is excessive wear, which soon destroys the life of the shoes. So, also, with brake-shoes having composition fillers in which asphaltum or the like is used as a binder the

tendency of the asphaltum to coke under excessive heat is a serious disadvantage, which is avoided by my present invention.

While I have described what I regard as the preferred embodiment of the invention, particularly for heavy railway-service, still the invention may be practiced with excellent results for light service, such as street-railway cars, without using all of the ingredients above mentioned. Thus, for example, in forming lubricating-fillers for brake-shoes of street-cars or for cars intended for comparatively light traffic the alum may be omitted, and for some classes of service a composition consisting merely of iron-borings, resin, and pine-tar pitch may be used with good results.

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

1. A composition for brake-shoes comprising comminuted iron and pine-tar pitch.

2. A composition for brake-shoes comprising comminuted iron, pine-tar pitch and resin.

3. A composition for brake-shoes comprising comminuted iron, pine-tar pitch, resin and alum.

4. A composition for brake-shoes comprising comminuted iron, pine-tar pitch, resin, tallow and alum.

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