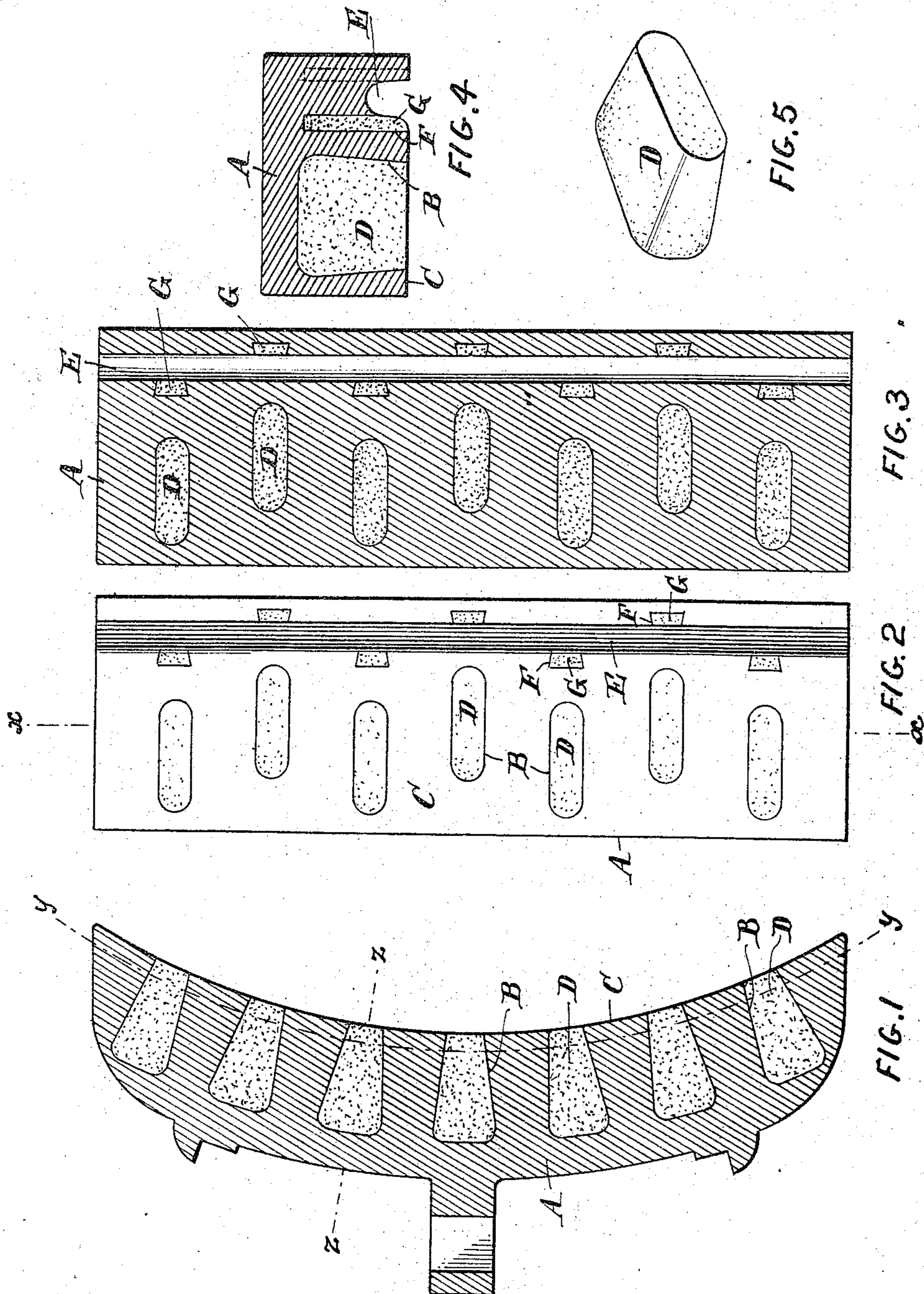


J. STROMEYER.  
BRAKE SHOE.  
APPLICATION FILED DEC. 3, 1909.

966,616.

Patented Aug. 9, 1910.



WITNESSES  
P. M. Kelly  
E. G. Farley

INVENTOR  
Julius Stromeier  
BY *[Signature]*  
ATTORNEY

# UNITED STATES PATENT OFFICE.

JULIUS STROMEYER, OF PHILADELPHIA, PENNSYLVANIA.

BRAKE-SHOE.

966,616.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed December 3, 1909. Serial No. 531,193.

*To all whom it may concern:*

Be it known that I, JULIUS STROMEYER, a citizen of the United States, and resident of Philadelphia, Philadelphia county, State of Pennsylvania, have invented an Improvement in Brake-Shoes, of which the following is a specification.

My invention has reference to brake-shoes, and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

The object of my invention is to provide a construction of brake-shoe which may be cheaply made, and moreover adapted in use to provide a surface presenting a series of gritty portions surrounded by and interspaced with metallic portions, whereby the former automatically provides material to maintain an effective resisting surface to the metal which presses against the tire or tread of the wheel and thereby operates to increase the braking action of the shoe beyond what would be the case if a shoe of the same size were made of metal alone.

My object is further to provide a grooved portion upon the shoe, having also the same improvements embodied therein as upon the main part of the shoe, whereby the same quality of braking action may also be put upon the flange of the wheel as upon the tread thereof.

My invention consists of certain features of construction which are fully described hereinafter and more particularly defined in the claims.

My invention will be better understood by reference to the drawings, in which:—

Figure 1 is a sectional view of a brake-shoe on line *x—x* of Fig. 2 and embodying my invention; Fig. 2 is a front elevation of my improved brake-shoe; Fig. 3 is a sectional view on line *y—y* of Fig. 1; Fig. 4 is a cross section taken on line *z—z* of Fig. 1; and Fig. 5 is a perspective view of one of the gritty blocks employed in the shoe.

A is the body of the brake-shoe and is curved in a vertical plane to suit the curvature of the tread of the wheel, and in its general cross section it is rectangular, as indicated in Fig. 4. The shoe may be provided with any means of attachment for supporting it upon the carrier blocks, such as employed in trucks for railway cars or for other vehicles. The front braking face of the shoe is provided with a vertical groove E

near one side in which the flange of the wheel extends, and the surface C between the said groove and the side of the brake-shoe most distant therefrom, constitutes the curved surface for producing the braking action upon the tread of the wheel. The body A of the shoe is provided with a series of substantially parallel pockets B opening into the braking surface C of the shoe. These pockets B are of dove-tail character, being of larger cross section farther down in their depth than where they open, through the face of the shoe, and this same condition may exist throughout their entire depth. I prefer to arrange these pockets in a more or less staggered position as indicated in Figs. 2 and 3. These various pockets are filled with a material D consisting of a gritty substance solidified into a solid block by use of a suitable binder. The preferred composition of which the blocks D are made is composed of pulverized magnesite and a solution of chlorid of magnesia which is formed into a pasty mass and compressed into the pockets and allowed to harden. This refractory material may be mixed with some sand, crushed glass or other vitreous material capable of presenting grains to the abrading surface of the wheel and which may be crushed to produce a surface to the metal which will enable it to have greater frictional resistance.

In the manufacture of my improved brake-shoe, I prefer to employ cast-steel as the metal, but the shoe may be made of cast iron if so desired.

The grooved portion E is also preferably provided with pockets F upon its opposite sides, and said pockets extending inwardly, preferably to the depth of the pockets B, and these pockets F may also be staggered as indicated in Figs. 2 and 3. These pockets F are also filled with the mixture of gritty substance or compound such as employed for the filling blocks D, so as to provide a gritty material in the groove E as well as upon the braking face C. This same braking operation would be carried on continuously in the groove, because, as the surface wears inward, new surfaces of the gritty material G will present themselves, as will be evident by reference to Figs. 3 and 4. While I prefer to employ the groove E with the gritty portions G, said parts may be omitted if desired.

By employing magnesite as the basis of

the gritty material within the pockets, I provide an exceedingly refractory material, and also one which firmly adheres to the metal within the pockets and also resists cracking or objectionable rupture when in use, and consequently, I provide a braking surface which is always maintained in perfect condition and of uniform braking resistance, notwithstanding wear. No jarring or strain will work the gritty material loose when composed of the composition herein set out. Unlike emery and corundum, the magnesite compound does not cut into the surface of the wheel, but provides a friction giving powder between the brake-shoe and the wheel which greatly increases the frictional contact without undue wear upon the metal on either the wheel or the brake-shoe. Any other refractory material than corundum and emery may be mixed with the magnesite, such as crushed flint, sand, quartz, granite, glass, etc., if so desired.

When considering my invention with respect to the pockets F and fillings G in connection with the groove E, the said structure may be employed in a plain brake-shoe without the pockets B and fillings D, if so desired; and likewise the filling G may be of any suitable material which may be composed of gritty substances and a binder capable of retaining itself within the pockets. Furthermore, the shape of the pockets B may be varied as desired, as it is not essential that they shall be of the particular shape shown. It is also evident that there may be more or less of these pockets B or F, as may be found desirable or suitable for shoes of various sizes.

I have shown the construction of my brake-shoe in the form in which I have found it excellently adapted for particular use for electric and steam railways, and though the shape may be varied to suit the requirements of any cars or vehicles to which it is to be applied, the general construction herein outlined is preferred; the details thereof however may be varied without departing from the spirit of the invention.

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

1. In a brake-shoe, the body made of metal and having a series of pockets opening into its braking surface to form a grid-like structure, combined with a filling of hardened gritty material within the said pockets extending to the surface of the shoe and consisting of a compound of magnesite.

2. In a brake-shoe, the body made of metal and having a series of pockets opening into its braking surface to form a grid-like structure, combined with a filling of hardened gritty material within the said pockets extending to the surface of the shoe and consisting of a compound of magnesite and chlorid of magnesia made into a paste and hardened in position within the pockets.

3. In a brake-shoe, the body made of metal and having a series of pockets opening into its braking surface to form a grid-like structure, combined with a filling of hardened gritty material within the said pockets extending to the surface of the shoe and consisting of a compound of magnesite a refractory material such as sand and a solution such as chlorid of magnesia.

4. In a brake-shoe, the combination of the metal body having a curved front face with a groove adjacent to one edge and a plurality of pockets extending inward through each side of the groove, combined with fillings of refractory material within the said pockets.

5. In a brake-shoe, the combination of the metal body having a curved front face with a groove adjacent to one edge and a plurality of pockets extending inward through each side of the groove, combined with fillings of refractory material within the said pockets consisting of a compound of magnesite.

6. In a brake-shoe, the combination of metal shoe having a curved front face with a groove near one side and also having a series of transversely arranged pockets in the face between the groove and the most distant edge and a plurality of pockets upon each side of the groove and opening therein, combined with fillings of refractory material tightly fitting the said pockets.

7. In a brake-shoe, the combination of metal shoe having a curved front face with a groove near one side and also having a series of transversely arranged pockets in the face between the groove and the most distant edge and a plurality of pockets upon each side of the groove and opening therein, combined with fillings of refractory material tightly fitting the said pockets and comprising a hardened compound of magnesite.

In testimony of which invention, I hereunto set my hand.

JULIUS STROMEYER.

Witnesses:

R. M. KELLY,  
E. G. FARLEY.