

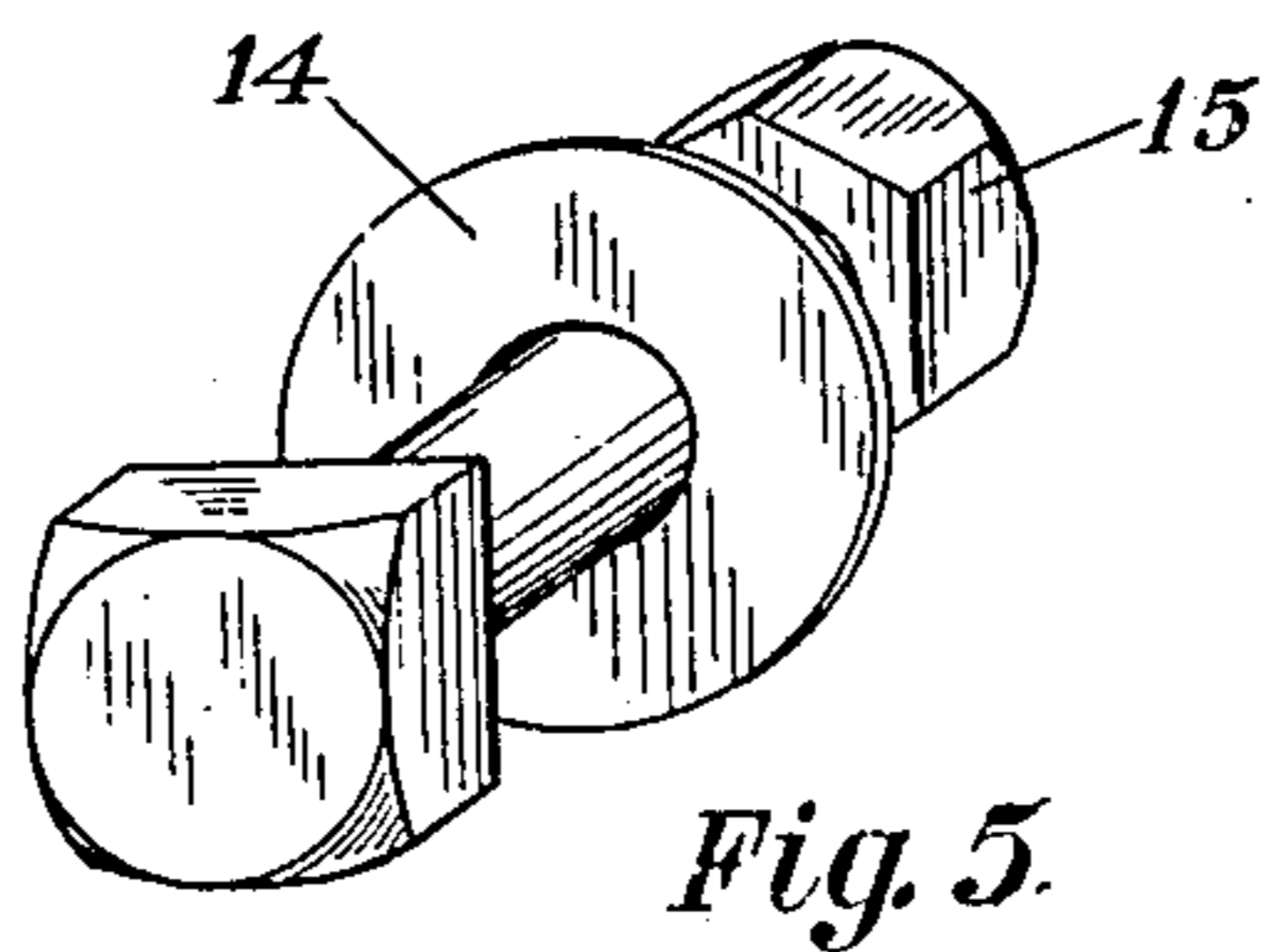
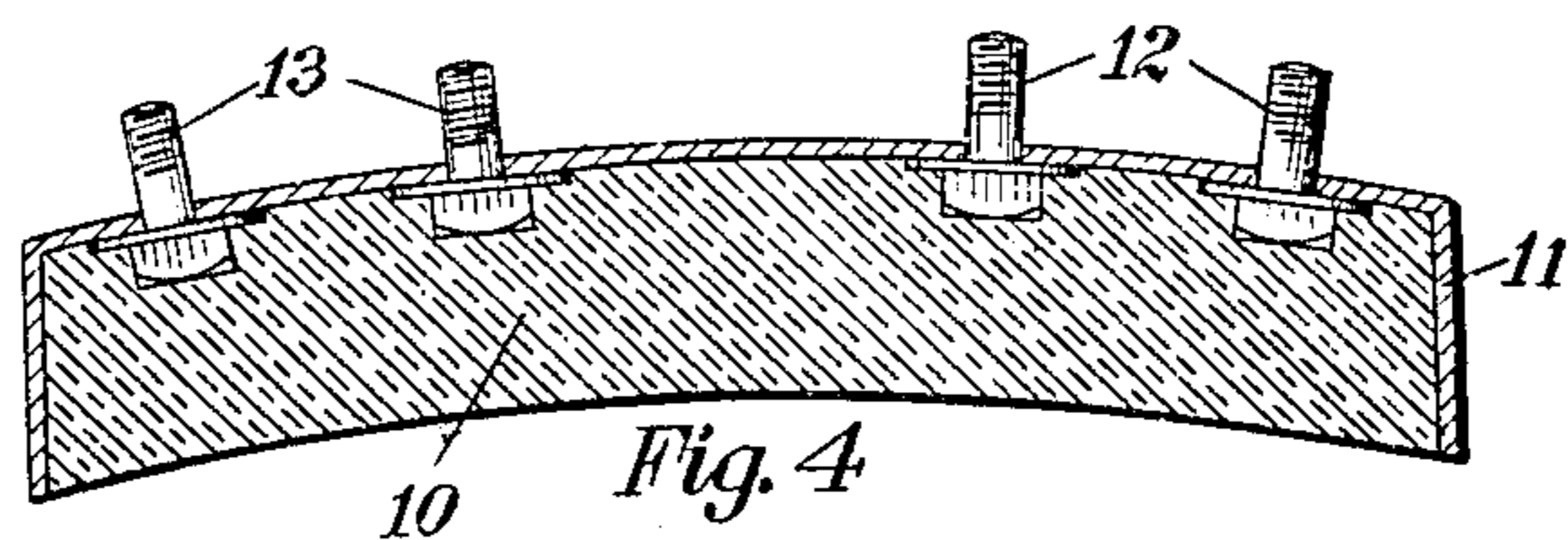
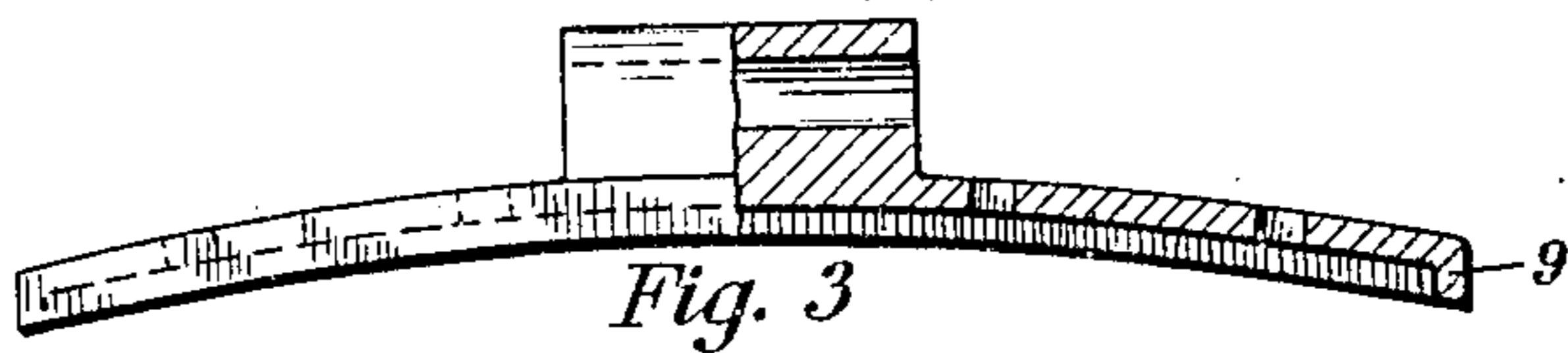
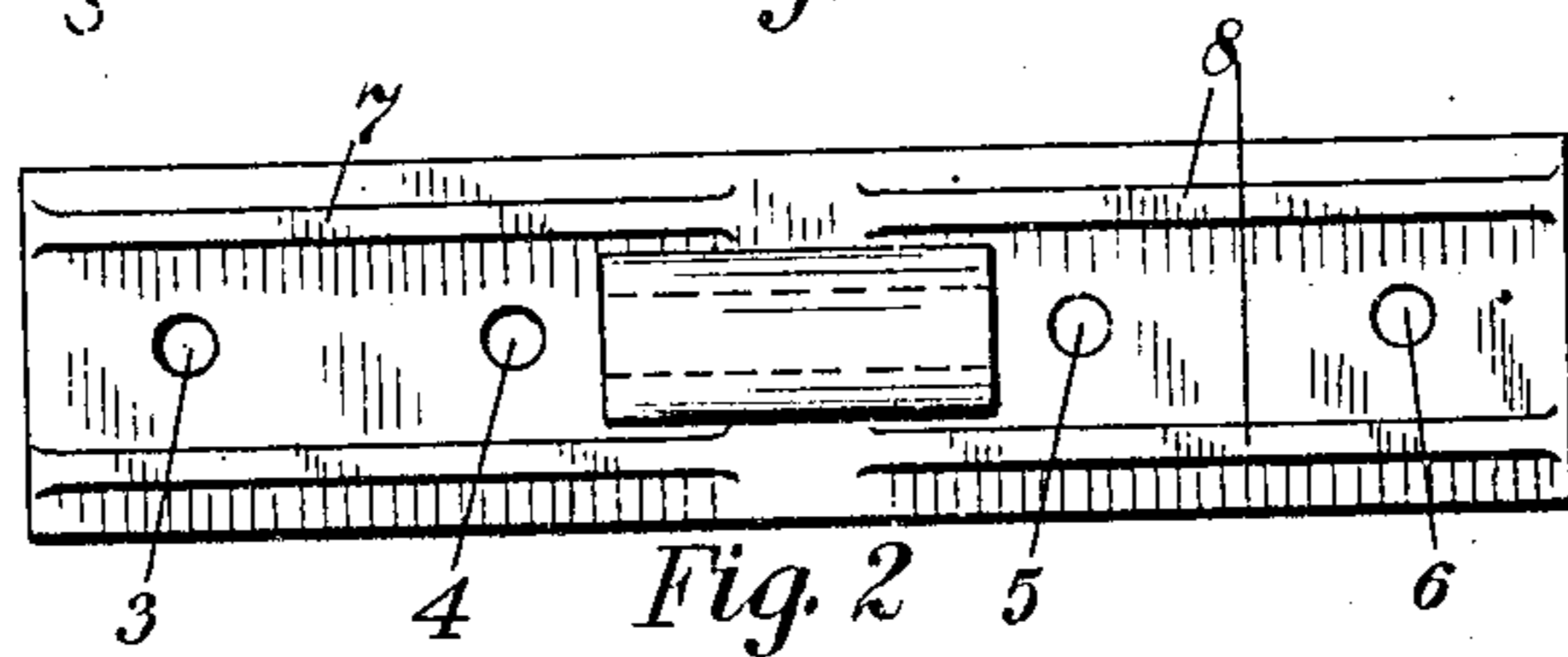
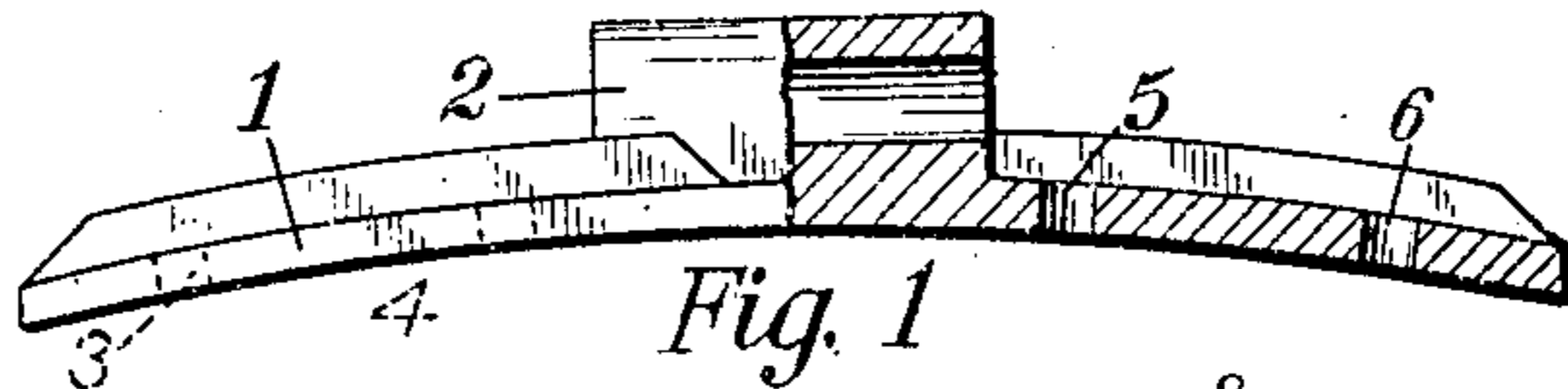
No. 882.107.

PATENTED MAR. 17, 1908.

W. B. GOODWIN.

BRAKE SHOE.

APPLICATION FILED JUNE 17, 1907.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM B. GOODWIN, OF COLUMBUS, OHIO.

## BRAKE-SHOE.

No. 882,107.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed June 17, 1907. Serial No. 379,396.

*To all whom it may concern:*

Be it known that WILLIAM B. GOODWIN, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, has invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

My invention relates to improvements in brake-shoes and in the shells for containing said shoes and consists essentially of a back or shell portion to which is to be secured in an appropriate manner a filling made up of a composition of matter, which is capable of withstanding the strains and shocks incident to the use of a brake-shoe, and which at the same time is inexpensive and highly efficient, and when worn down can readily be replaced. One shell may accordingly be used with a series of fillings, and as the shell portion, being preferably made of steel, is expensive, it is desirable to form a brake-shoe in such manner that the shell portion will not be worn.

Hitherto, brake-shoe shells have been formed of metallic backs, sides, and ends, and the wear thereon in service reduces the shell as rapidly as the inner or filling material. Therefore, when the shoe proper needed repair, it was found that the shell also needed replacing, so the life of the shell was no greater than that of the filling thereof.

The chief objects of my improvement are to attach the filling material to the shell in such manner that the filling material alone will be worn away in service, the shell remaining intact; further, the filling material I employ is a composition of matter, is inexpensive and very durable, and yet whenever it is worn away to such an extent as to require replacing, I provide means by which it can readily be detached from the back or shell portion without injuring or in any manner lessening the efficiency of the latter.

With these and other objects in mind, I provide a brake-shoe shell essentially as shown on the accompanying drawings, in which

Figure 1 is a side view of a shell or back partly in section; Fig. 2 is a top view of the same; Fig. 3 is a side view partly in section of a modified form of back or shell having a shallow flange depending from the back portion; Fig. 4 is a vertical longitudinal section through the filling for the brake-shoe shell, showing the manner of securing the same to the back; Fig. 5 is a perspective of one of

the bolts used for securing the filling to the back.

Referring to the drawings which are hereby made a part of this specification, in which the same reference numerals designate like parts throughout, 1 is the back or shell without the side and end flanges, being partly in section, and having the hanger attachment 2 preferably made integral therewith, said back being provided with the bolt holes 3, 4, 5, and 6, which may be increased in number as desired. The outer portion of the shell is preferably provided with the corrugations 7 and 8, which will strengthen the same.

The shell or back portion may be made with a shallow flange 9 depending from the sides and ends thereof, for the purpose of providing abutting walls for the filling; this slight flange will give some assistance in holding the filling material in place within the shell.

The filling material 10, shown in Fig. 4, is a composition of matter, which is preferably wrapped or bound by a covering 11, which may be made of metal or paper or wood, any material being suitable which will prevent the filling from a tendency to disintegrate or become friable on account of the constant shock or jarring thereof due to the use of the brake-shoe in service. The covering material need not be very strong to accomplish this, as has been shown by experiment. When the block of material for this purpose is being pressed into shape, bolts 12 and 13 are embedded therein; these bolts are provided with washers 14 of comparatively great diameter, which will give great firmness to the bolt and very effectively secure the same within the body of the material. The block of material for use as a brake-shoe being prepared in this way with bolts and a covering, and of the dimensions required by the circumstances, is secured to the shell or back portion by passing the bolts through the openings therein, and placing a nut 15 thereon in the usual manner. Instead of bolts, large screws, such as are used for wood, may be employed, the same being inserted through the back into the filling material. In this manner a brake-shoe formed preferably of two portions is provided; the back portion or shell being formed of steel preferably and not intended to come in contact with the wheel to be abraded in any manner; this shell will therefore not need to be replaced unless it be broken, which will not

frequently happen under ordinary conditions. The filling material is formed of a composition of matter which is inexpensive and easily made, and easily secured in position against the shell or back in some such manner as described. It is seen that all of the wear due to contact of the shoe with the wheel is borne by the filling material, and when this is worn away to such an extent as to need replacing, the remainder thereof may readily be detached from the back or shell and a new filling placed therein. This may be done easily and with slight expense. Meanwhile, the back or shell portion which is made preferably of steel and therefore is comparatively expensive, may be utilized again and again with the filling material. On account of the rapid deterioration of metallic brake-shoes, those having shells, the sides of which are coextensive with the thickness of the material forming the filling are worn away with the shoe and consequently the whole structure must be replaced each time the shoe proper is worn down too far for further use. My improvement therefore provides a brake-shoe and shell which wear longer than the metallic shoe, and when they need to be replaced it may be done at a slight expense and the steel back or shell which is the more expensive portion may be used a number of times.

The shell for containing the filling material may be secured to the back by means of bands or wires if desired, in a manner which is readily understood; I have illustrated only

the manner of securing the same by means of the bolts.

What I claim is:—

1. A brake-shoe comprising a back member, an integral shell member, said members having registering openings therethrough, a composition of matter in said shell member, bolts anchored in said composition of matter and extending outwardly through said registering openings whereby said back and shell members are removably secured together.

2. A brake-shoe comprising a back member, a single integral shell member adapted to be applied throughout its length to said back member, a composition of matter in said shell member, and fastening means removably uniting said members, whereby the shell member may be replaced when the composition of matter is worn away without renewing the back member.

3. A brake-shoe comprising a back member, a single integral shell member having back, side, and end walls, a filling therefor formed of a composition of matter adapted to engage frictionally with a wheel, bolts embedded in said composition extending outwardly through said back member to secure said shell member removably thereto.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM B. GOODWIN.

Witnesses:

GEO. W. RIGHTMIRE,  
WILLIAM H. THRASH.