

UNITED STATES PATENT OFFICE.

WILLIAM H. THRASH, OF COLUMBUS, OHIO.

COMPOSITION OF MATTER.

No. 883,843.

Specification of Letters Patent.

Patented April 7, 1908.

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To all whom it may concern:

Be it known that I, WILLIAM H. THRASH, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Composition of Matter, of which the following is a specification.

My invention relates to a composition of matter, more particularly to a composition of matter which may be used as a substitute for metal, wood, or other materials. It is lighter than metal, and possesses its durability and qualities of resistance, and at the same time is of such consistency as to receive a screw or a nail in the manner of wood. It is also specially adapted for use as a brake-shoe, as it is particularly fitted to generate a frictional resistance to the motion of the car wheel, and at the same time wears long in that kind of service.

My composition consists of the following ingredients combined in approximately the proportions stated, namely:

Portland cement	1 lb.
Asbestos	1 "
Graphite	1 oz.
Sugar	1 "
Coal dust	1 lb.
Pumice stone	1 "
Soap-stone	1 "
Animal blood	1 lb.
Gallotannic acid	1 1/2 oz.
Lava	1 lb.
Carbolic acid	3 drops.
Creosote	3 drops.

In combining the elements enumerated to produce the desired composition, the animal blood is obtained when fresh and is agitated while in this state so as not to become a fibrous or solid body; sugar is added to the blood and stirred into it, and this mixture is then placed over a slow heat and caused to simmer until the mixture becomes thick and viscous. Coal and Portland cement in approximately the proportions above stated are mixed with the blood and sugar, and the mass is heated by steam heat, and thereupon forms a thick and viscous composition. Instead of Portland cement, asbestos might be used and a satisfactory composition produced. It is understood that the coal will be finely ground before being put into the composition, and when pumice stone or soap stone is used, it will be also finely ground.

Graphite is used for the purpose of more closely binding the other ingredients together and forming a harder as well as a smoother surface for the composition; it operates to produce this effect by filling the pores or voids in the composition and hardens the body so that it may be capable of resisting and absorbing a severe shock thereto. The hardening effect produced by the graphite does not impart brittleness to the composition.

The office of the gallotannic acid is to give to the composition a water proof quality, inasmuch as when the acid is added to the graphite it tends to form an oily mixture; I mix said acid with the blood and sugar and stir the same before any other ingredients are put in. The Portland cement is mixed with the ground coal and is used as a drier and hardener and produces this effect more quickly than if asbestos and coal are used. The asbestos gives to the composition a fibrous texture.

The use of a composition of matter containing blood under conditions of friction where heat is generated, is attended by a very offensive odor; this renders its use for brake shoes almost prohibitive, unless the odor can be overcome. As I contemplate the use of my composition chiefly for brake shoes, I have overcome this objection by the use of carbolic acid or creosote; either of these ingredients mixed in about the proportions above mentioned will effectually destroy the odor, and render the composition entirely unobjectionable for such use. I have found that pumice stone or soap stone, finely ground may be used to the same effect as the coal.

I have conducted many experiments and have made many tests with the composition of matter made up of the above mentioned elements and in about the proportions above stated, the ingredients being grouped as appears in the appended claims; for brake-shoes especially the composition is highly satisfactory, not only in checking the car more quickly than the iron shoe but also in causing less deterioration of the wheel. The life of the wheel when the brake-shoe is used therewith formed of my composition of matter, is substantially one-third longer than when an iron brake is employed. Not only is the life of the wheel prolonged, but the life of the brake-shoe is much longer than that of the iron or steel shoe. Furthermore, a brake

shoe made of my composition is much cheaper than a metallic shoe.

In the following claims wherever coal is introduced as an ingredient, there may be substituted therefor either pumice stone, soap stone or lava; and where carbolic acid is used, creosote may be substituted therefor.

What I claim is:

1. A composition of matter comprising
10 animal blood, Portland cement, asbestos,
coal, and graphite.

2. A composition of matter comprising

animal blood, Portland cement, asbestos, coal, graphite, and sugar.

3. A composition of matter comprising 15
animal blood, Portland cement, asbestos, coal, graphite, sugar, gallotannic acid and carbolic acid.

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

WILLIAM H. THRASH.

Witnesses:

GEO. W. WIGHTMIN,

WILLIAM B. GOODWIN.