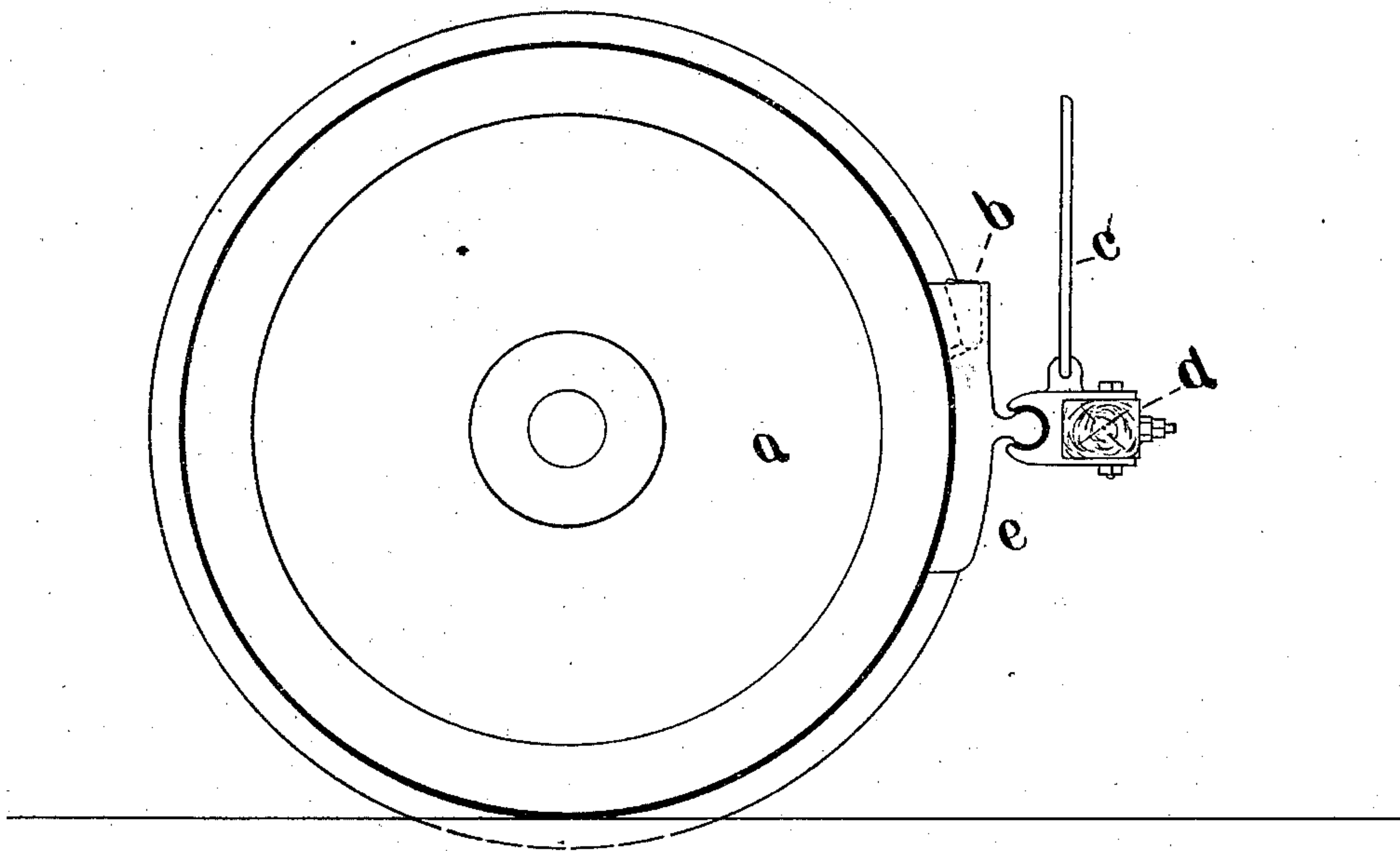


(No Model.)

T. SHAW.
CAR BRAKE.

No. 311,262.

Patented Jan. 27, 1885.



WITNESSES:

J. Logan Fitts
Wm. Garwood

T. Shaw, Jr., & Co. INVENTOR

UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 311,262, dated January 27, 1885.

Application filed October 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, Pennsylvania, have invented and discovered a new and improved mode of preventing the great wear and tear upon brake-shoes and car-wheels; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

Heretofore it has been the usual practice to overcome the momentum of moving bodies—such, for instance, as car-wheels and the like—by applying some sort of a brake to the moving surface, and this is generally done by applying a shoe, plate, or band, of metal, which conforms more or less to the shape of the moving surface, and means are generally used for controlling the pressure or intimacy of contact between the moving surface and the shoe, plate, or band. By this means a greater or less amount of friction is produced, which gradually converts the momentum or power into heat or other energy, and the moving body is brought to a state of rest or retarded in some degree. This results in the gradual disintegration of both the moving body and the brake, as the metallic surfaces rubbing against one another under pressure grind upon each other and produce a fine metallic dust, which not only eventually destroys the one or the other of the contacting surfaces, but this dust, floating in the air and attaching itself to neighboring surfaces, gives rusty appearances to such surfaces, and permeates rooms, houses, and other places, to the annoyance of the public. This is more apparent in the elevated roads as at present constructed and operated, where numerous and quick stops are required and the track is in close proximity to the buildings. I have discovered that I can overcome these objections and prevent the rapid destruction of the contacting surfaces and consequent production of dust, and thereby not only relieve the public of the objections mentioned, but also reduce the power necessary to apply the brake, and prolong the usefulness of both moving body and brake, thereby saving the great expense due to their destruction.

To this end my invention and discovery consists in applying to the wearing and grinding

surfaces of a moving body and the brake therefor of a frictional material that will encounter the wear and tear that would otherwise fall upon the surfaces, and this material is such that it is capable of being torn apart and reunited many times without total destruction, thereby consuming and absorbing power or momentum, stopping or retarding the moving surface, and holding hard upon the surface of the brake, forming a sort of a protecting coating to the brake.

It further consists in a means whereby this frictional material may be readily and easily supplied to such surfaces in proper quantities as required.

In more particularly describing my invention reference is made to the accompanying drawing, forming part of this specification, which shows one manner of applying my invention to an ordinary car-wheel and brake-shoe.

The wheel, which may be of any suitable construction, is indicated by the letter *a*, and a brake-shoe, *e*, of the usual form, is suspended on an ordinary brake-beam, *d*, held in position before the wheel by the usual link, *c*.

I apply to the working or bearing surface of the shoe some frictional material of the character indicated, and I have found a simple, cheap, and effective way of providing the requisite amount of the material to be such as is shown in the said drawing.

In the brake-shoe is provided a recess, pocket, or chamber, *b*, (shown in dotted lines,) with one or more apertures leading from said chamber to the working-surface of the shoe, between the body of the shoe and wheel.

Suitable means may be provided for regulating the feed of the frictional material, and I have found that packing the lower portions of the chamber or pocket with coarse cotton or wool will effectually control the supply of frictional material, the quality or fineness of the material and degree of compactness regulating the supply as circumstances require. The substance found best and most advantageous for this friction material is of a tough, tenacious character, capable of being torn apart and reunited time and time again without total destruction, and at the same time forming a sort of coating to the bearing-sur-

faces, and such a material is found in what is known as "rosin-oil," which is a fluid or semi-fluid substance of a sort of plastic nature and composed largely of carbon. In use this frictional material is packed or placed in the chamber, and the packing so adjusted that a sufficient supply will be applied to the surface of the shoe, and when pressure is applied to the shoe the moving surface of the wheel comes primarily in contact with this frictional material, tearing the particles asunder, which are again reunited and torn apart on the surfaces of the wheel and shoe, absorbing the power of the moving body, and producing friction without the usual grinding of the metal surfaces and consequent destruction of the same.

It will be evident that my invention and discovery is not limited to the specific material mentioned, as various other frictional coating materials may be used, and other means of applying the same may be employed, according to the exigencies of the case.

I claim—

1. The combination, with a wheel and brake-shoe, of a fluid or semi-fluid frictional wearing material, substantially as described.

2. The combination, with a wheel and brake-shoe, of a fluid or semi-fluid material of a tough, tenacious character, capable of being torn apart and reunited, and forming a frictional coating between the wearing-surface of the wheel and shoe, substantially as described.

3. The combination, with a wheel, of a brake-shoe having a pocket or recess for the reception of the wearing material, and a passage from said recess to the wearing-surface of the shoe, substantially as described.

4. As a means of preventing the wearing and grinding of the metal surfaces of a wheel and brake, a coating of frictional material applied to said surfaces, substantially as described.

5. The combination of the wheel, shoe, and receptacle for a frictional fluid arranged to supply the bearing-faces, substantially as described.

THOMAS SHAW.

Witnesses:

WM. GARWOOD,
J. LOGAN FITTS.