W. H. BRADT.

Wagon Brake.

No. 101,818. Patented April 12, 1870.

Fig. 1

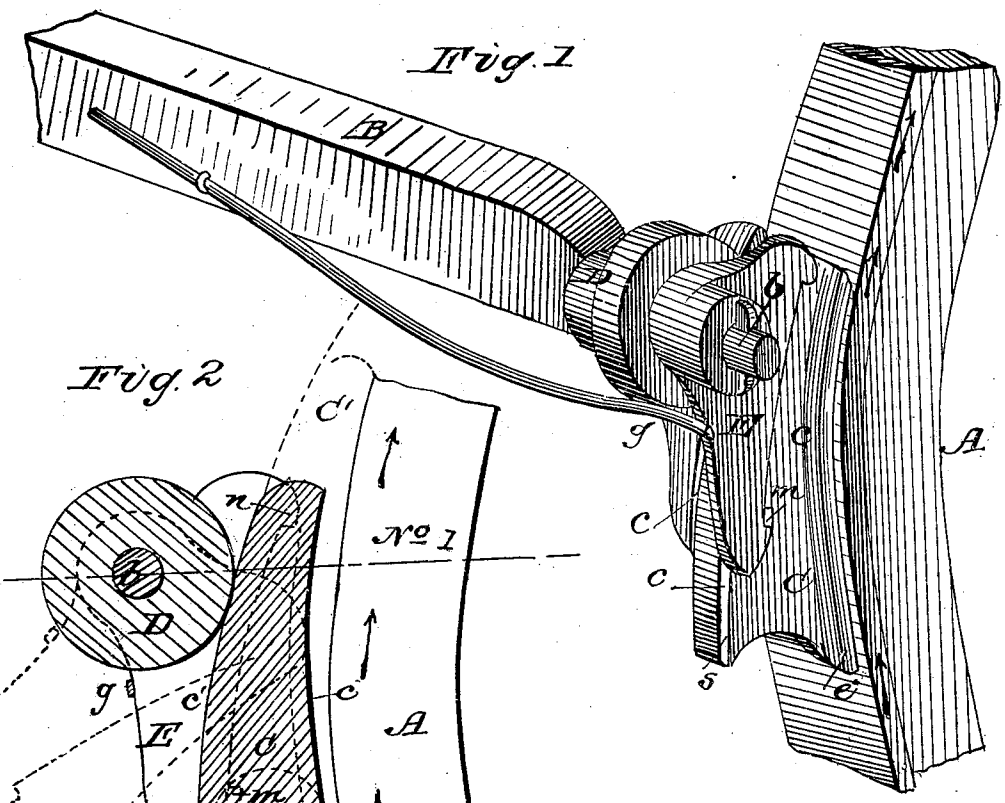


Fig. 2

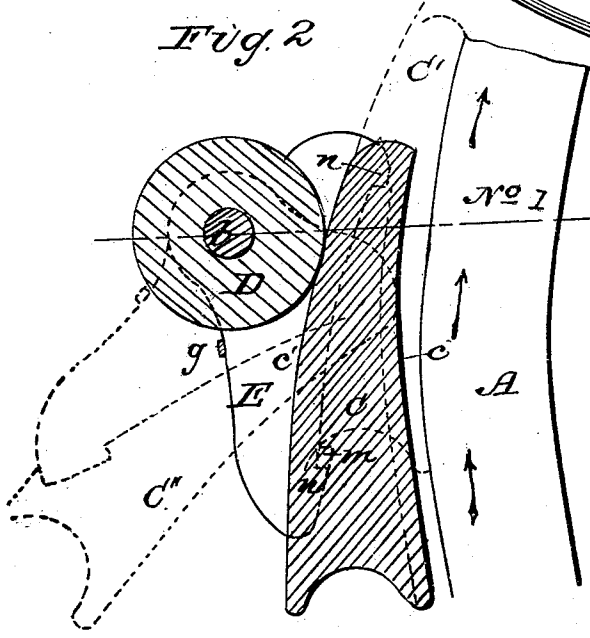
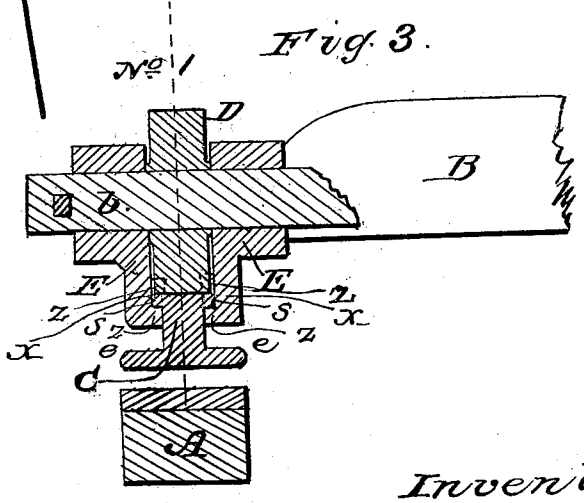


Fig. 3.



Witnesses:

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WILLIAM H. BRADT, OF NEW SCOTLAND, NEW YORK.

Letters Patent No. 101,818, *dated April* 12, 1870.

IMPROVEMENT IN BRAKE-BLOCK FOR WAGONS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM H. BRADT, of the town of New Scotland, county of Albany, State of New York, have invented a new and Improved Mode of Constructing Brake-Blocks for Brakes of Wagons, Steam-Cars, Horse-Cars, or other land conveyances; and I do hereby declare that the following is a specification thereof, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of the invention.

Figure 2 represents a vertical cross-section through line No. 1, fig. 3.

Figure 3 represents a cross-section through line No. 1, in fig. 2.

Brake-blocks, as they are generally constructed, are effective only as they are crowded against the wheels they are to operate upon, and in all cases the said brake-blocks must needs be kept up in close contact with the wheels by a constant pressure exerted and maintained by the means of levers, wheels, and similar devices, operated automatically or by hand, as the case may be.

In my invention I seek to make the wheel operated upon capable of operating the brake-shoe, and maintaining the same in close and effective contact with the wheel until released at the termination of the descent passed over, either by the person in attendance or by the automatic action of the other parts of the brake.

To enable others skilled in the art to make and use this invention, I will proceed to describe it in reference to the accompanying drawings and the letters of reference marked thereon, the same letters indicating like parts.

In the drawings—

A represents a section of a wheel.

B is a brake-bar constructed and arranged in any suitable manner so as to be capable of being operated in a manner that will throw the brake-block in contact with the wheel A.

The brake-block is constructed of several pieces or parts, which parts are so arranged and connected as to form in the whole a strong and lasting block, and the block is secured to or hung from the brake-bar B by means of any suitable shaft *b*.

One part, C, of this brake-block I denominate the wedging shoe.

The said wedging shoe C has one side, *c*, made concave, the curve of which is made to conform to the curve of the wheel to be used with it, and is placed facing the face of the rim of the wheel.

The rear side *c'* of the said wedging shoe is made convex. The upper end or toe is made narrower than the lower end or head of this wedging shoe, and the general shape viewed from a side is that of a bent wedge, as shown in fig. 2.

The face of this wedging shoe, if made of cast-iron, can be provided with a more extensive surface, *e*, shown in fig. 3, which, if cast thereto, may be chilled or may be shod with steel.

The back part of the said shoe C is provided with ways or guiding-pieces *s s*, figs. 1 and 3, the use of which will be hereafter described.

The wedging shoe C is placed and operates between the two pieces E E, which pieces I denominate the cheeks.

The said cheeks are perforated, and receive the shaft *b* to which they are secured, as shown in figs. 1 and 3, and are made of any suitable material, and of any proper form; on their inner surfaces are made recesses or grooves *x x*, which grooves *x* received the guiding-pieces or ways *s s* of the shoe C.

The said recesses or grooves are formed by the lips *z z*, figs. 1 and 3, and are curved to correspond with the curve *c'* of the shoe C.

Placed between the cheeks E E, and back of the shoe C, is a roller, D, which roller is free to revolve on the shaft *b*, and impinges with its face on the back side of the shoe C, as shown in figs. 2 and 3.

Stops *n n* are provided on the cheeks E, and also a stop, *m*, on the shoe, which stops are to prevent a too extensive movement of the shoe C in direction vertically.

When this invention is to be applied to car-wheels, I would make the cheeks E, or their equivalents, secure on the shaft *b*, so that they would not turn, by means of set-screws or keys.

If desirable, the body of the shoe C could be made wider, and be provided with a T-shaped slot made to run centrally through its rear face *c'*, in which a substitute for the cheeks E could work, and two rollers, placed on each side of the substitute cheeks, could be used to bear against the rear of the shoe; the result would be substantially the same though more expensive.

To keep the brake-block in proper position when not in action, I attach to the brake-bar any suitable-formed spring *g*, which spring will lie in contact with the rear side of the cheeks E, and hold them in position. This spring I would use only when the brake-block is made to swing on the shaft *b*.

In operating with this invention the brake-bar B is slightly thrown forward, so as to carry the brake-block against the rim of the wheel A; the rim of the wheel A, moving in the direction indicated by arrows in figs. 1 and 2, acts by friction on the face of the shoe, and tends to carry the shoe upward to a position indicated by dotted outline C', fig. 2, and wedge against the said shoe tightly between the roller D and the wheel A.

When, by the mutual action of the shoe C and movement of the wheel A, the shoe is being carried up, the rear face of the shoe bears against the roller D, thus lessening the friction which would otherwise attend the movement of the shoe if the roller D was dispensed with, and the rear side of the shoe was permitted to have its bearing against the lips *z z* of the grooves *x x*.

The shoe C being made in the form of a bent wedge, as has been described, travels in a curve line of direction in such a manner as to bring the curved face bearing-surface *c* in a full and continuous contact with the wheel, which the shoe would not do were it made wedge-shaped with straight lines of surface, for such straight lines in a wedge-shape shoe would cause the said shoe to travel vertically in a straight line, and the surface in contact would not be full or continuous as when made as in my invention.

In backing up the vehicle, (if the brake has an automatic action,) the wheel A would also be brought in contact with the brake-block, but the wheel moving in a direction contrary to that indicated by arrows would give a reverse action on the brake-block, and throw the same in a position somewhat as indicated by dotted outline C″, fig. 2; and when thus thrown the block would press back the spring *g*. When the contact between the shoe and the wheel is broken, the spring *g* will operate and throw the brake-block in its normal position for a future action.

Having described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. In a brake-block, the wedging shoe C, when constructed with the concave sides *c*, and convex side *c′*, and with the guide-ways S S, substantially as and for the purpose set forth.

2. In a brake-block, the cheeks E E, furnished with grooves *x x*, substantially as and for the purpose set forth.

3. The spring *g*, when attached to the bar B, in the manner set forth for the purpose specified.

4. A brake-block consisting of the several elements specified, when combined substantially in the manner described, and effected in its several parts by the action of a revolving wheel, substantially in the manner set forth.

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Witnesses:

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