D. SAGER.

Wagon-Brake.

No. 36,801. Patented Oct. 28, 1862.

Fig. 1

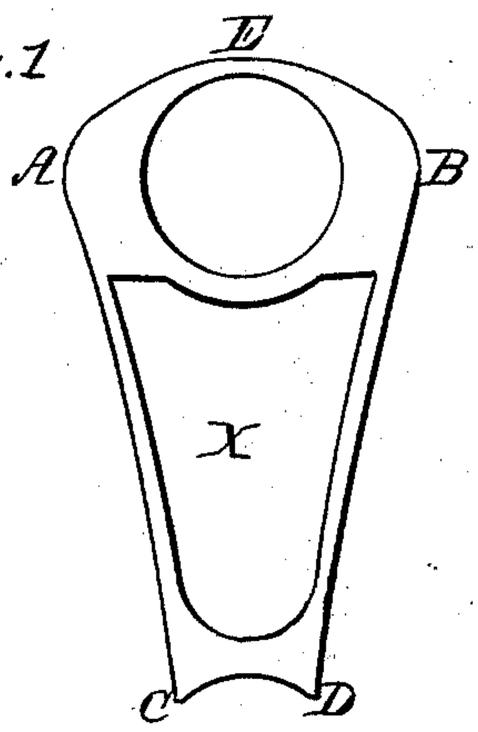


Fig. 2.

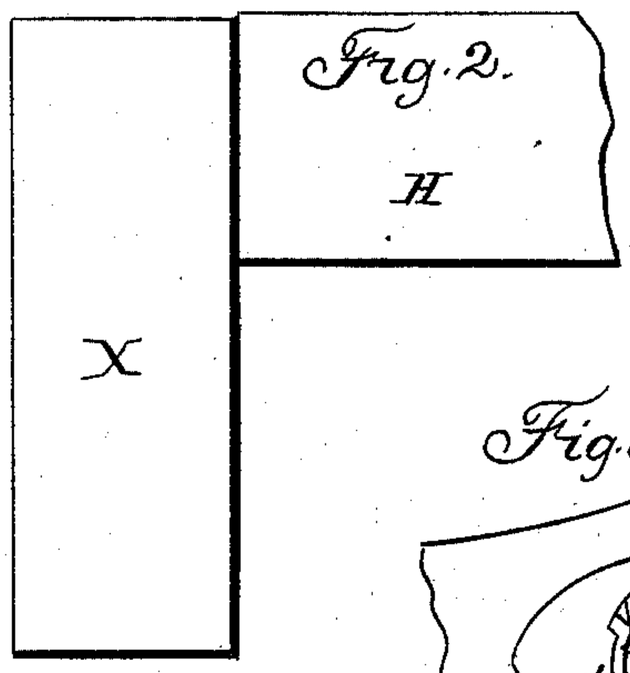


Fig. 5.

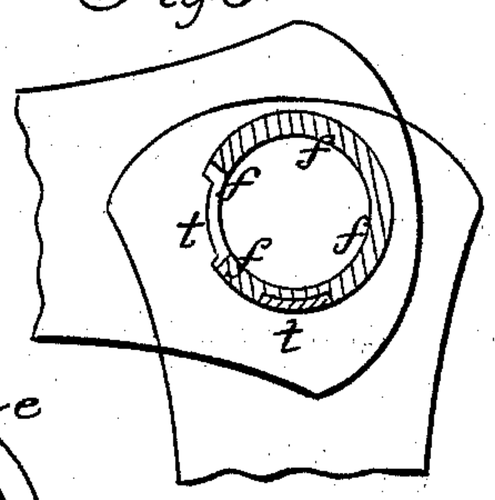


Fig. 4.

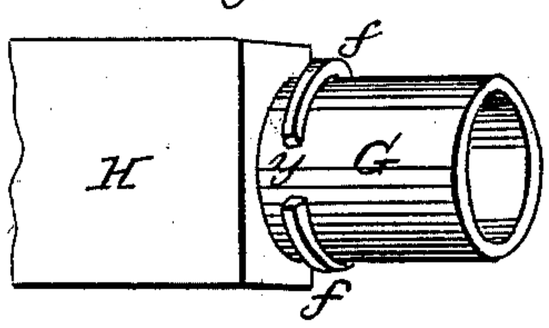


Fig. 3.

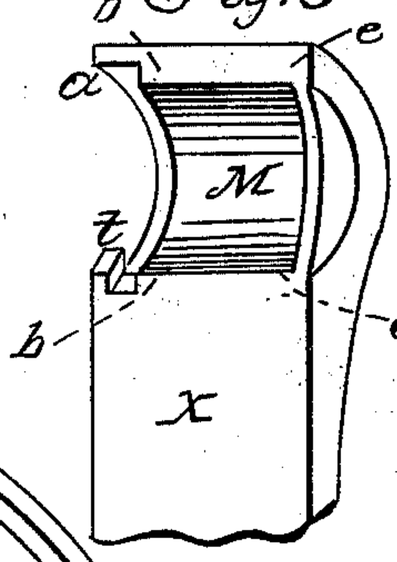
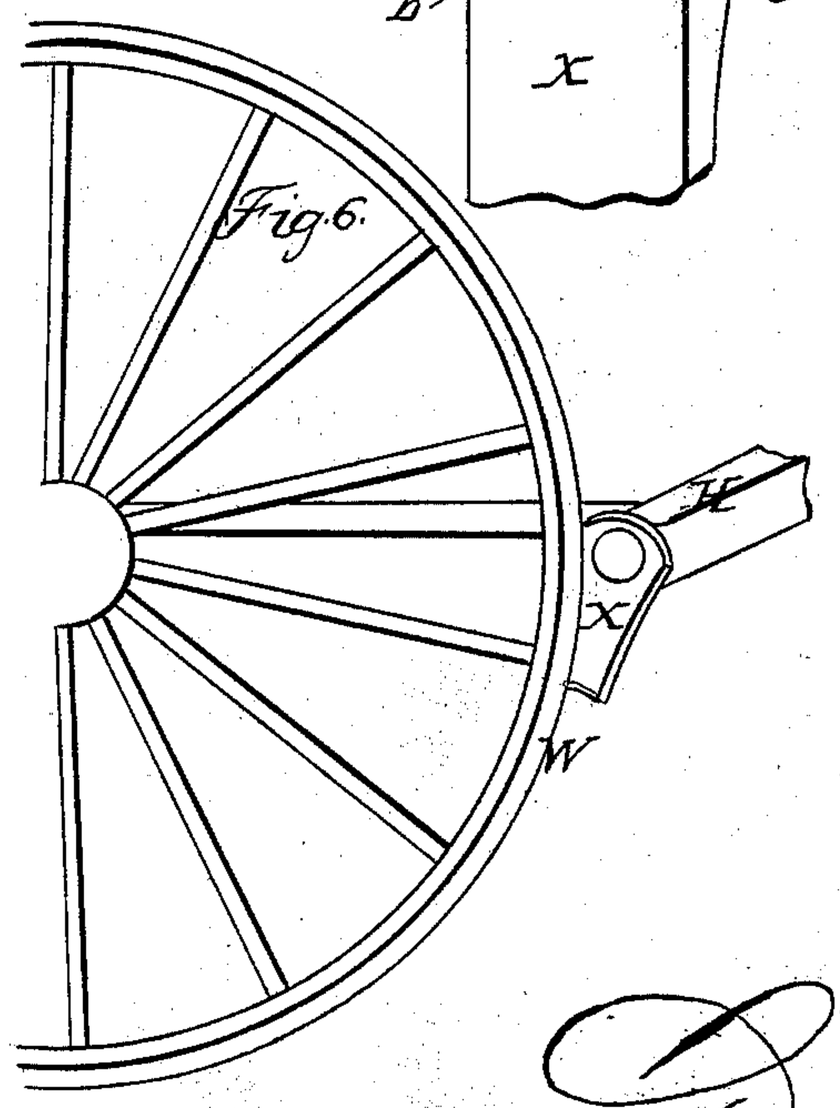


Fig. 7.

Fig. 6.



Witnesses
A. G. Rose
New York DeWitt

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Daniel Sager.

UNITED STATES PATENT OFFICE.

DANIEL SAGER, OF ALBANY, NEW YORK.

IMPROVEMENT IN SELF-ACTING WAGON-BRAKES.

Specification forming part of Letters Patent No. **36,801,** dated October 28, 1862.

To all whom it may concern:

Be it known that I, DANIEL SAGER, of Albany, State of New York, have invented a new Self-Acting Brake-Block; and I declare the following specification, with the drawings accompanying the same and forming a part thereof, to be a full and perfect description of my invention.

My invention refers to the external form of the block, by which it is made to perform as a self-acting brake, and to its internal construction, by which it is fitted and secured upon the brake-bar.

Figure 1 represents the block in profile, hanging down freely from the brake-bar. Fig. 2 represents the same, as seen in front or rear, fixed upon the bar. Fig. 3 represents in perspective a section of the block to show its method of attaching to the bar, and Fig. 4, in perspective, the bar and the axle for the same purpose. Fig. 5 is a diagram to illustrate the method of attachment; Fig. 6, the brake applied to a wheel; Fig. 7, a diagram to illustrate the effect of the backing of the wheels upon the brake.

Similar letters in the figures denote the same parts of apparatus.

The block X, which is of metal, is in form of the frustum of a wedge whose base is at A B, the line passing through the axis on which the block swings with similar rubbing edges, A C B D, arched to the circle of the wheel-tire with which it is to be used, its upper part A E B, extending sufficiently upward to allow for the bore to receive the axis G of the brake-bar H with its groove, to be described.

The brake-bar H is fitted so as to operate the brake against the rear of the wheel with any arrangement of the brake-working apparatus which operates by the gravity of the load and vehicle pressing upon and along the pole or shafts, (such as is described in Letters Patent granted to me for an "improvement in self-acting brakes for wheel-vehicles," February 25, 1862.) It has at each extremity an axle, G, upon which the brake-blocks can revolve freely. It will be manifest from an inspection of the drawings that while free from the impact of the wheel the block will hang down, as in Fig. 1, but the instant that its corner A touches the wheel W, when its periphery is revolving upward, the movement of the wheel will press the corner upward, and consequently the surface A C, toward the rim of the wheel, so that as the brake-bar is drawn by the pressure of the load the corner of the block rises until its whole surface bears against the wheel, the pressure or resistance of the block increasing gradually with the surface brought to bear upon the wheel, instead of coming with its full pressure, as with ordinary brake-blocks, and vice versa, when the load is eased the pressure of the block diminishes gradually instead of quitting abruptly. Should the vehicle be backed while the brake is in action, the effect of the reversed motion of the wheel will be to act upon the corner A, press it downward, and thereby remove the pressure of the block from the wheel, as illustrated by the diagram, Fig. 7.

The mode of fitting the block upon the brake-bar is with a view to exclude dust and mud, for it is well known that brakes are often clogged by mud, either soft or frozen, to such an extent as to impede or entirely prevent their operating, and that the dust which gathers upon their axles acts partially in the same manner. The mode of fitting also is such as to secure it firmly from working off from the axis when once in place.

The cylindrical axle, Fig. 4, which is of metal, either solid or as a cap to a wooden axle, has near its inner end, leaving a small space between it and the brake-bar, a low annular flange, *f*, passing nearly around it, but leaving a small space, *y*, on the side nearest the wheel. The orifice M in the block to receive the axis extends only from a toe, Fig. 3, so as to leave a thin shell of metal over the end of the axle. On the outer end or mouth of this orifice a shallow groove, *a b*, is sunk for the purpose of passing over the flange *f* on the axle. On the lower part of this groove a small portion of metal or flange, *t*, is left or placed at its outer edge, just large enough to pass through the space *y* in the axle.

To put the block on the axle, turn it horizontally until the piece *t* is in range with *x*, slide the block up until *t* has passed through *y*, and let it swing. *t* will then, by passing behind the flange *f*, lock the block from escaping off the axle.

The reason for putting the space *y* next the wheel is to prevent the possibility, by any reverse movement of the block, of bringing *y* and *t* in range. This cannot be done but by turn-

ing the block in a horizontal position in the direction of the wheel, in order to do which the wheel itself must first be removed.

A very important economical advantage arises from the peculiar form of the block—that is, with similar edges. Whenever one edge becomes too much worn for service, the block can be transferred at once to the other end of the bar in exchange for the block on that side, and thus not require a new block and fitting.

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

1. The brake-block X formed as shown, and fitted to revolve freely upon an axle from the extremity of the brake-bar, for the purpose set forth.

2. The mode of construction by which the brake-block is fitted and secured upon the axle, to wit: the combination of the orifice M, the groove *a b*, and its flange *t*, with the axle G, flange *f*, and space *y*, substantially as described, and for the purpose set forth in the above specifition.

DANIEL SAGER.

Witnesses:

A. G. ROSE,

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