

D. SAGER.
Wagon-Brake.

No. 57,975.

Patented Sept. 11, 1866

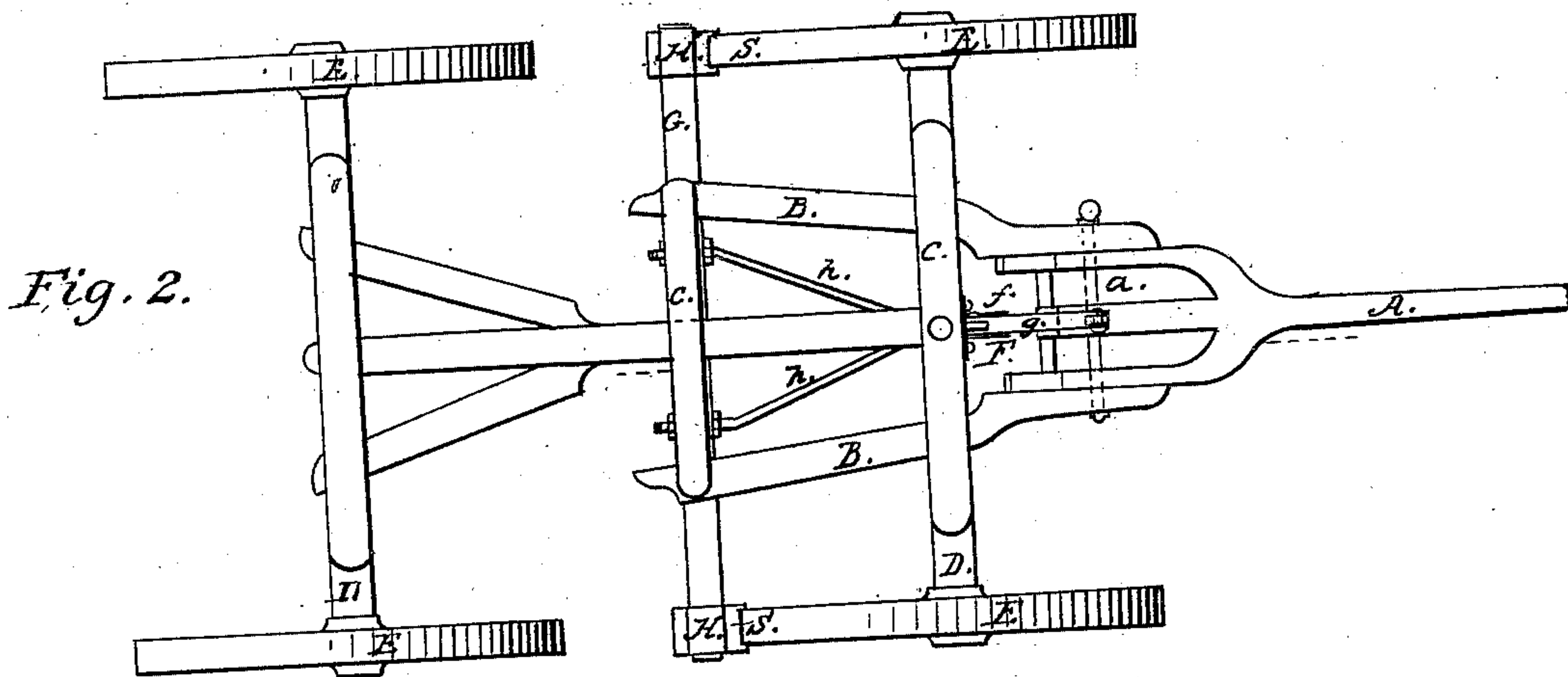
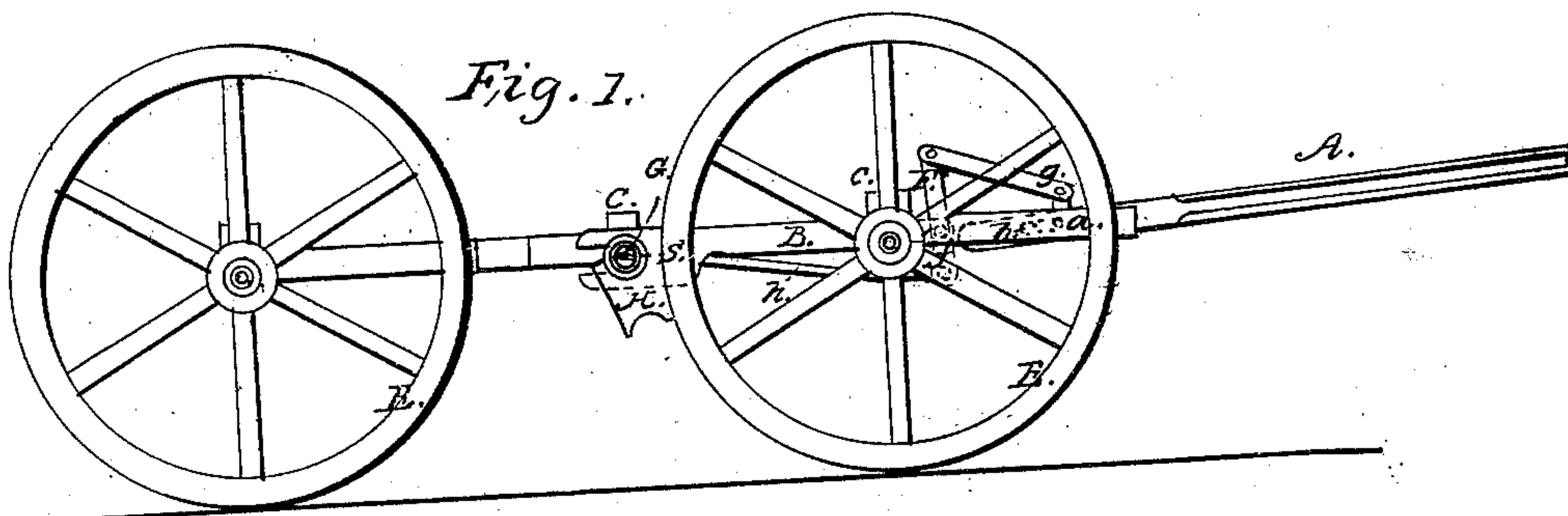
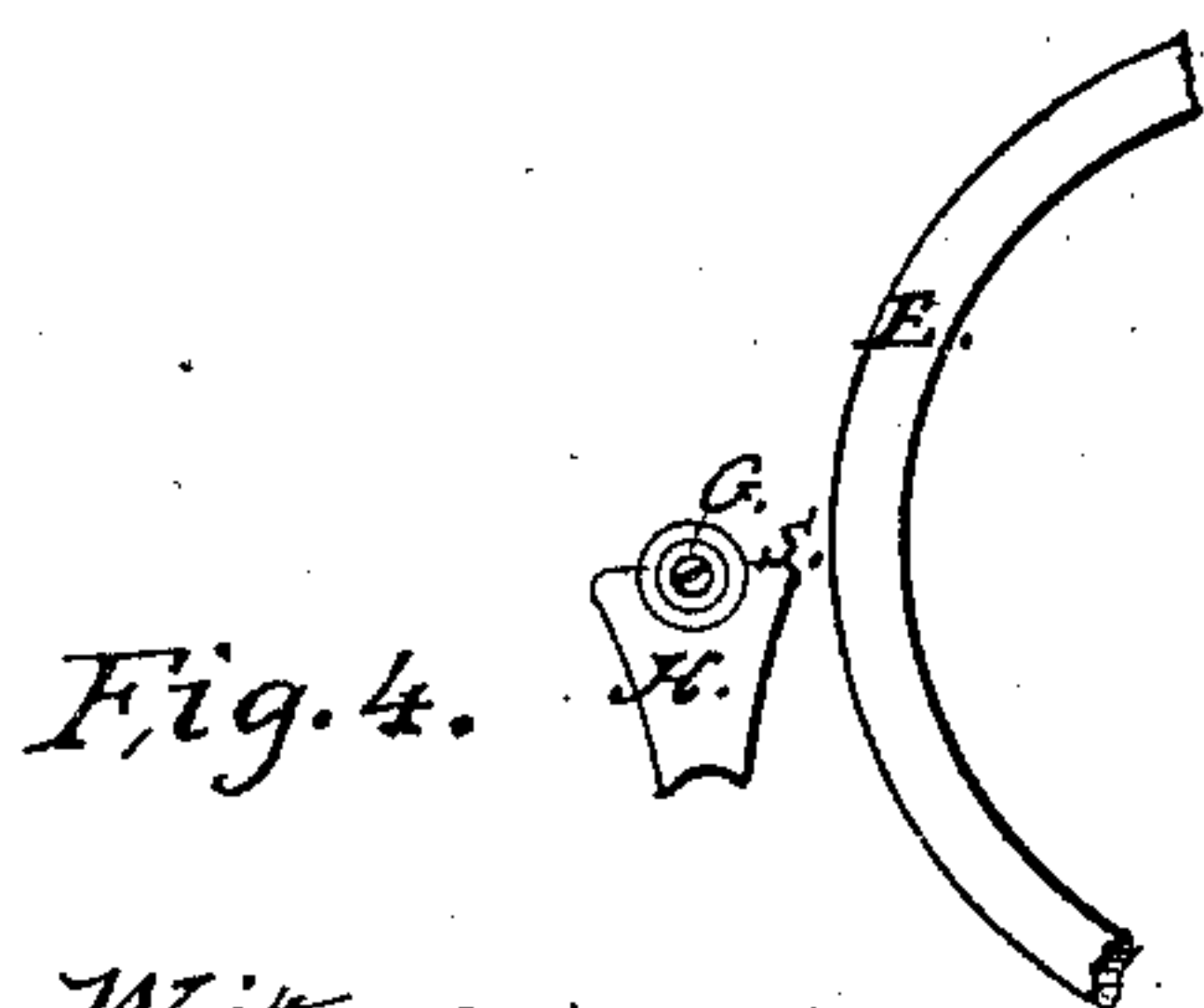
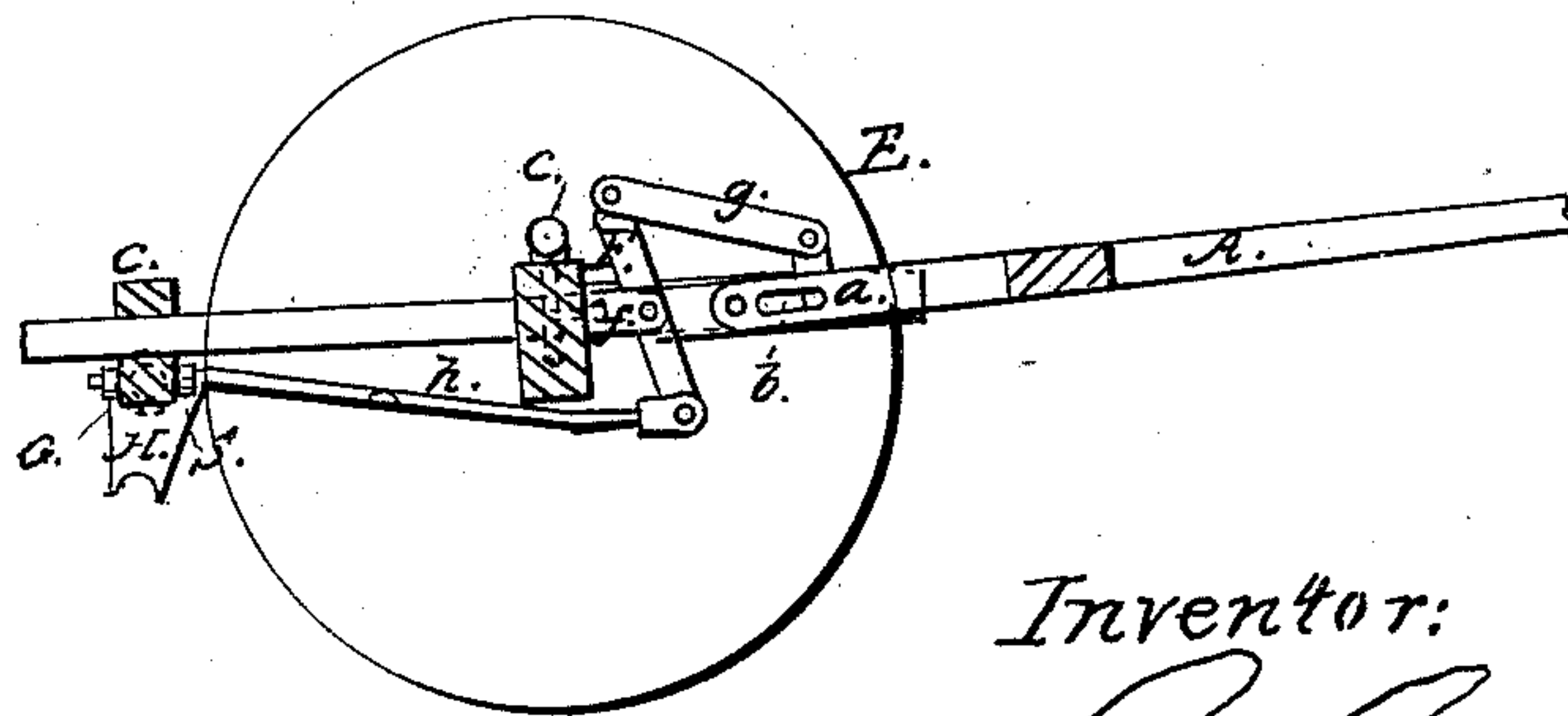


Fig. 3.



Witnesses:

J. W. Corbly
G. W. Reed.

Inventor:

D. Sager

UNITED STATES PATENT OFFICE.

DANIEL SAGER, OF ALBANY, NEW YORK.

IMPROVEMENT IN WAGON-BRAKES.

Specification forming part of Letters Patent No. 57,975, dated September 11, 1866.

To all whom it may concern:

Be it known that I, DANIEL SAGER, of the city and county of Albany, in the State of New York, have invented a new and useful Improvement in Self-Acting Brakes for Wheel-Vehicles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 represents a side view of the running-gear of a wheel-vehicle with my improvement applied thereto, and showing the brake-shoes as biting on the wheels. Fig. 2 is a plan of the same; Fig. 3, a longitudinal vertical section with the parts in position as the wheels are commencing to back; and Fig. 4, a diagram in illustration of the relative positions of the shoes and wheels when the vehicle is in forward motion.

My improvement relates to that class of self-acting brakes which have the brakes applied to the rear, not only of one pair, but also, if desired, to all the wheels, and the action of which on the wheels is produced by the back thrust of the pole, while their liberation is effected by the back action of the brake-bar, as produced by the forward movement of the pole, and also without waiting for the latter, by the back motion of the wheels; and the nature of my invention consists, first, in providing for the operation of the brake-bar in a cheap, simple, and efficient manner, by a single lever, connected by a rod with the pole, having its fulcrum on the axle-tree, and the lower end of said lever being jointed to the brake-rods below the axle-tree; and my invention further consists in a novel and advantageous construction of the brake-shoes, so that not only at first, when new, but also when worn and old, the back motion of the wheels will not fail to release the brakes from their action on the wheels.

To enable others skilled in contrivances of the class to which my improvement relates to make and use the same, I will now proceed to describe it in connection with the accompanying drawings, in which the portion marked A represents the draft-bar or pole of a wheel-vehicle, B the hounds, C the sand-boards, D the axle-trees, and E the fore and aft wheels. The brake is here only shown

applied to the front wheels; but it will be evident that by extending the connection, or coupling the front brake with an after one, it may also be used on or to the hind wheels.

The pole A is hung so as to rock vertically on a pin or rod, *a*, passing through the forward ends of the hounds, and by means of a slot or slots, *b*, in it is capable of being moved in direction of its length, or, in other words, forward and backward, or in and out relatively to the running-gear.

F is a single upright lever, having its fulcrum *f* on the front axle-tree, and its upper and longer arm connected by a rod, *g*, in a loose or jointed manner to the pole, while its lower and shorter arm is jointed below the axle-tree to the brake-rods *h*, which, in their turn, are secured to the brake-bar G, and are provided with tightening-up or adjusting and lock nuts at their connection with the latter, that carries at either extremity freely-hung rubbers or shoes H, and that slides in slots cut in the rear ends of the hounds. By this combination and construction the requisite efficiency is secured in a simpler and cheaper manner than when a greater multiplication of rods and levers are employed. The pole is allowed to work freely up and down without putting extra weight on the horse's neck, and all the parts can be set up so tight as to avoid rattling, which is a defect common to all or most other previous arrangements. Likewise, by running the brake-rods below the axle-tree instead of, as in other combinations, between the said board and axle-tree, cutting away either of these parts for the passage of the brake-rods, or bending the latter instead, is avoided.

The shoes H are peculiarly constructed. They are not simply freely hung and suitably secured on the necks or ends of the brake-bar G, so that in the pull of the team on a level or climbing hill, they, by the back motion of the brake-bar, lie or are suspended freely away from all contact with the wheels, as seen in Fig. 4, or, on the team making a steep descent, or coming to a sudden stand-still, are thrown into contact with the wheels by the back thrust of the pole and forward movement of the brake-bar, and made to gripe or bite on the wheels by the rub of the latter

against them; but that feature which is peculiar at first, or when new, to some shoes similarly hung—as, for instance, that which is the subject of my Letters Patent No. 36,801, granted to me, of causing them by a back motion of the wheels to release themselves from friction on the wheels in advance of the back thrust of the pole freeing them, is, by the shape or construction of the shoes shown in the accompanying drawings, largely improved and made efficient, not only when said shoes are new, but also equally so when old and worn.

To illustrate this, supposing the shoe, which is pendent on either extremity of the brake-bar, and has its larger portion below the center of attachment, to have its smaller and upper portion formed by a semicircle uniting the two sides (back and front) of the lower portion, and struck from the center of the shoes' attachment, then, though at first, and when new and not worn, a shoe so constructed would, on the back motion of the wheel, be caused, by the friction of the latter against it, to release itself or lower brake-surface from bite on the wheel, such shoe would, when worn, fail to do so by reason of the part above the center of attachment of the shoe being, through the general wear of the shoe, also made to bear against the tread of the wheel to an extent that the back motion of the wheel would exert a tendency to so press on the upper forward part of the shoe as to depress or force the lower portion thereof against the wheel, thereby inducing bite.

To obviate this I form the shoes H with a reduced upper portion, and so that the front or rubbing surface of the shoe will terminate at its top in a protruding lip, S, on a level or nearly so, when the shoe is freely suspended with its center of attachment, so that, however much wear takes place, the shoe will never present to the tread of the wheel an upper counteracting portion, as in the former case, but will always have a tendency, on its upper extremity touching the wheel, to release its lower or brake surface proper from contact with the wheel on and by the back motion of the latter, and this, in advance of the action of the pole, disengaging the brake.

What I claim herein as new and useful, and desire to secure by Letters Patent, is—

1. The arrangement and combination of the pole A with the lever F, and connections *g h*, directly with the brake-bar in rear of the wheels, essentially as herein set forth.

2. The construction, substantially as shown and described, of the pendent shoes H, on the ends of the brake-bar, by reducing their top portions, and so that when the shoes are freely suspended the upper extremities, S, of the lower or rubbing portions thereof will be on a level, or thereabout, with the centers of attachment of the shoes, essentially as and for the purpose or purposes herein specified.

D. SAGER.

Witnesses:

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