W. KEELER.

Improvement in Car-Starters.

No. 131,689. Patented Sep. 24, 1872.

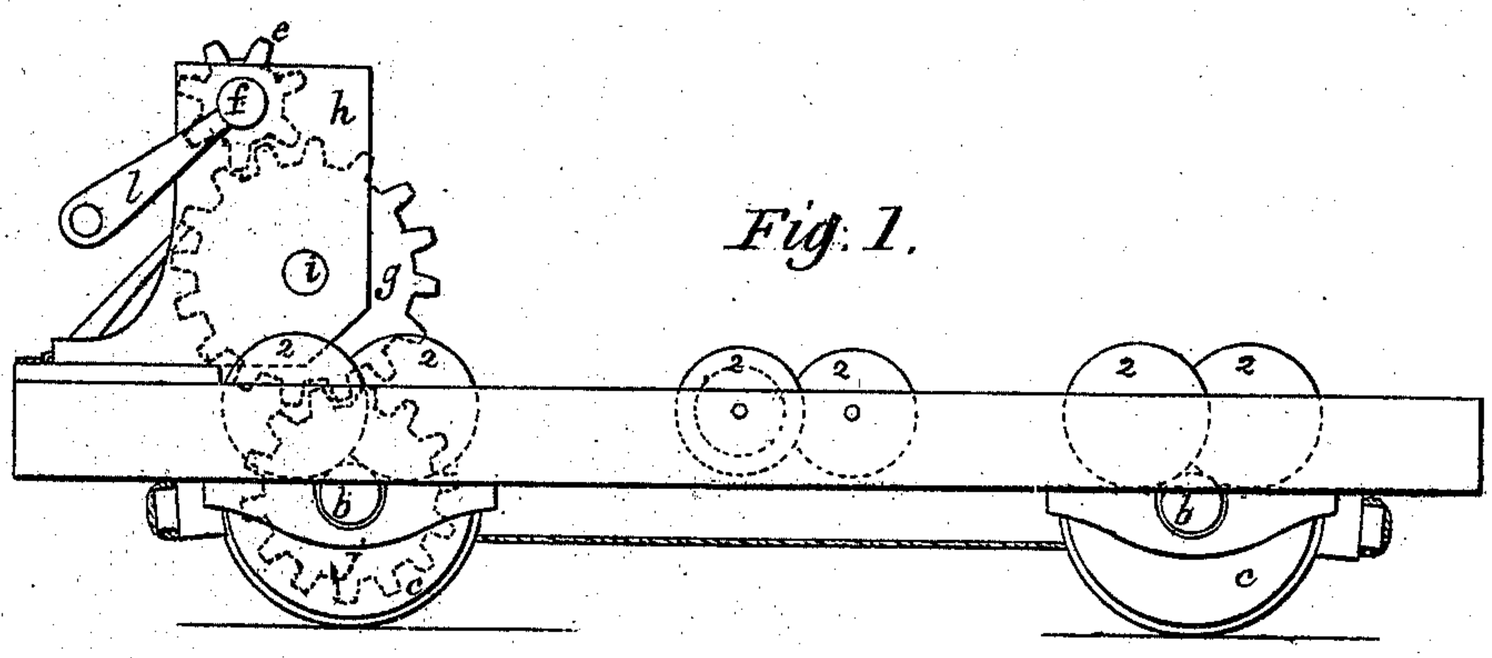
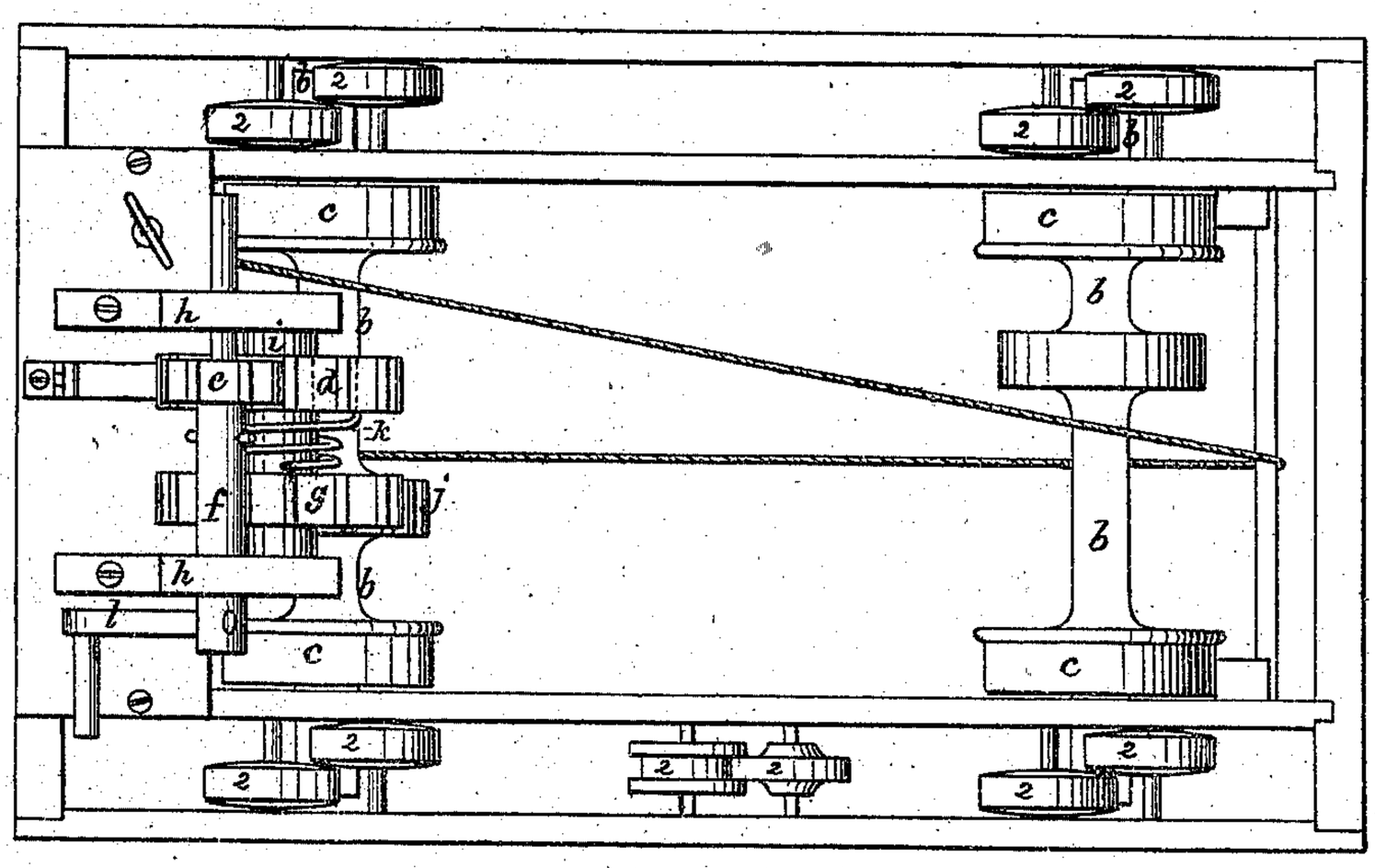


Fig. 1.

Fig. 2.



Witnesses
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WILLIAM KEELER, OF TOWANDA, PENNSYLVANIA.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **131,689**, dated September 24, 1872.

To all whom it may concern:

Be it known that I, WILLIAM KEELER, of Towanda, Bradford county and State of Pennsylvania, have invented certain Improvements in Railroad Cars, of which the following is a specification:

My improvement consists in a combination of devices for constituting a car-starter connected with the wheel-axles of the car, to give it an impetus when starting, as is more fully described, and then set forth in the claim.

In the accompanying drawing, Fig. 1 is a side view of a car-frame, showing the relative position of the small anti-friction wheel 2 2 2 2 resting on and to revolve simultaneously with the ends of the axles *b b* of the car-wheels *c c;* and Fig. 2 is a top view of a car-frame with the car-starter attached to it.

Like letters and figures indicate the like parts.

Instead of a hub, as is usual for the car-axles *b b* to revolve in, I substitute two or more small anti-friction wheels, 2 2, Fig. 1, lapping upon each other, without touching, so as to form a notch underneath them for the ends of the wheel-axles, with or without cogs, to revolve in; or the small wheels 2 2 may revolve on a line with each other by cutting a tongue on the periphery of one of them, of the proper length, and a corresponding groove on that of the other for the tongue to run in.

The car-starter consists in a crank, *l*, with a sliding shaft, *f*, supported by upright standards *h h*, with a small cog-wheel, *e*, attached to said shaft *f*, which small cog-wheel *e* meshes into a larger cog-wheel, *d*, which revoles around, but not with the shaft *i*, to which shaft *i* another cog-wheel, *g*, is attached and revolves with the shaft *i* and meshes into another cog-wheel, *j*, which is attached to the axles *b* of the car-wheels *c c c c*, Fig. 1. One end of a spiral or other spring, *k*, is attached to the inner side of the cog-wheel *d* and the other end of it to the shaft *i*, and by turning the crank *l* it winds up and stiffens the spiral spring *k*, which is held to its place, as it tightens up, by a ratchet-brace which braces against the cogs of the cog-wheel *d*, and is hung on a hinge on the platform so that it can be detached from its bracing position when necessary. The centrifugal force exerted in the unwinding of the spiral spring starts the car forward as soon as the brakes are off, and by shifting the crank-shaft so as to connect its cog-wheel with another one on the same shaft with the independent one the car can be propelled backward or forward.

The starter may be applied on any part of either platform, and when it is too far from the car-axle to be conveniently reached by a series of connecting cog-wheels Keeler's endless chain or a belt may be used in forming the connection.

Having thus fully described my invention, what I claim is—

The combination of the crank-pinion *e* with the gears *d*, *g*, and *j*, and spring *k* for enabling the driver or attendant on the car to start, or to aid the team in starting, said car, as described and represented.

WILLIAM KEELER.

Witnesses:

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