

J. G. WIGGIN.
Car-Brakes.

No. 145,470.

Patented Dec. 9, 1873.

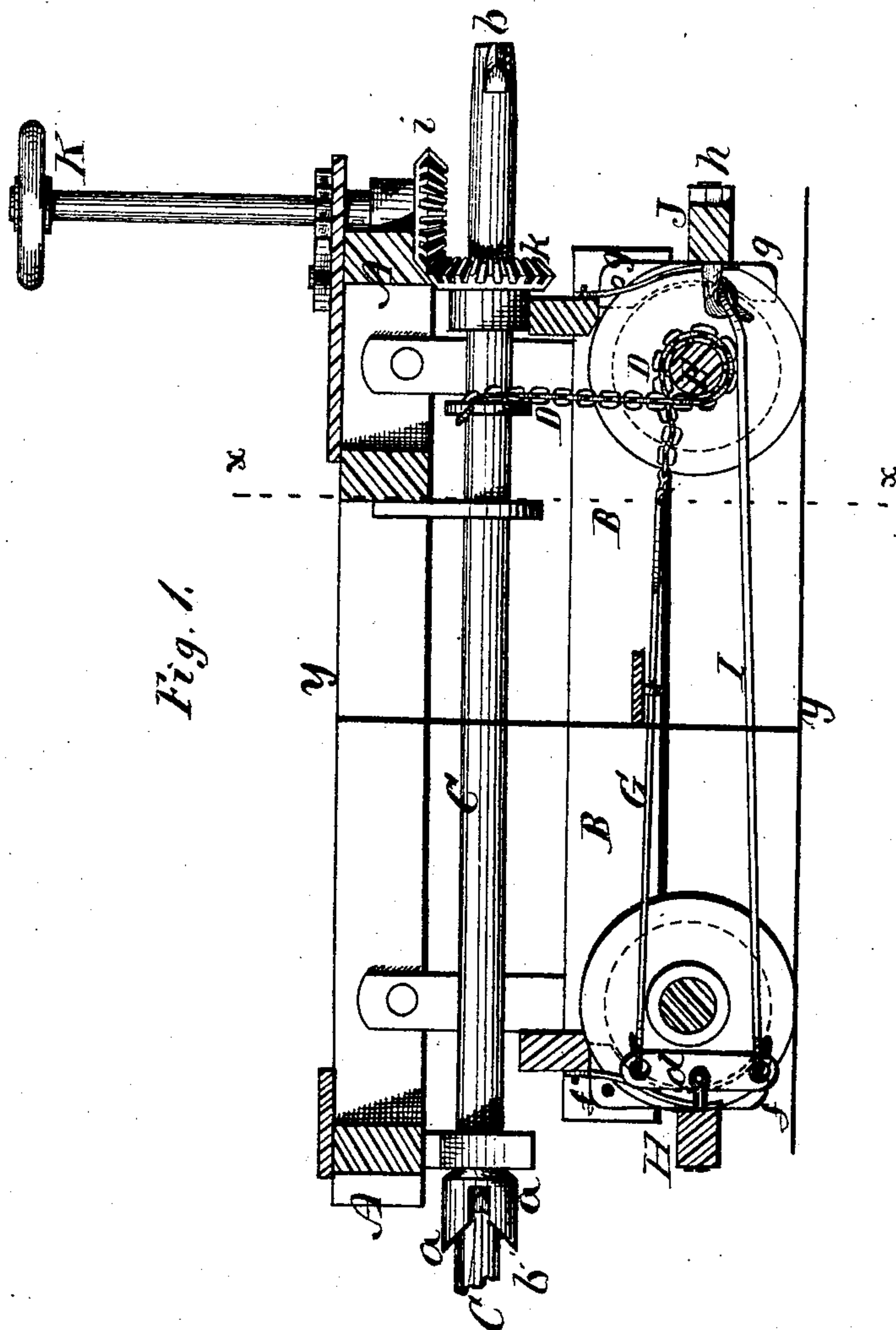


Fig. 1.

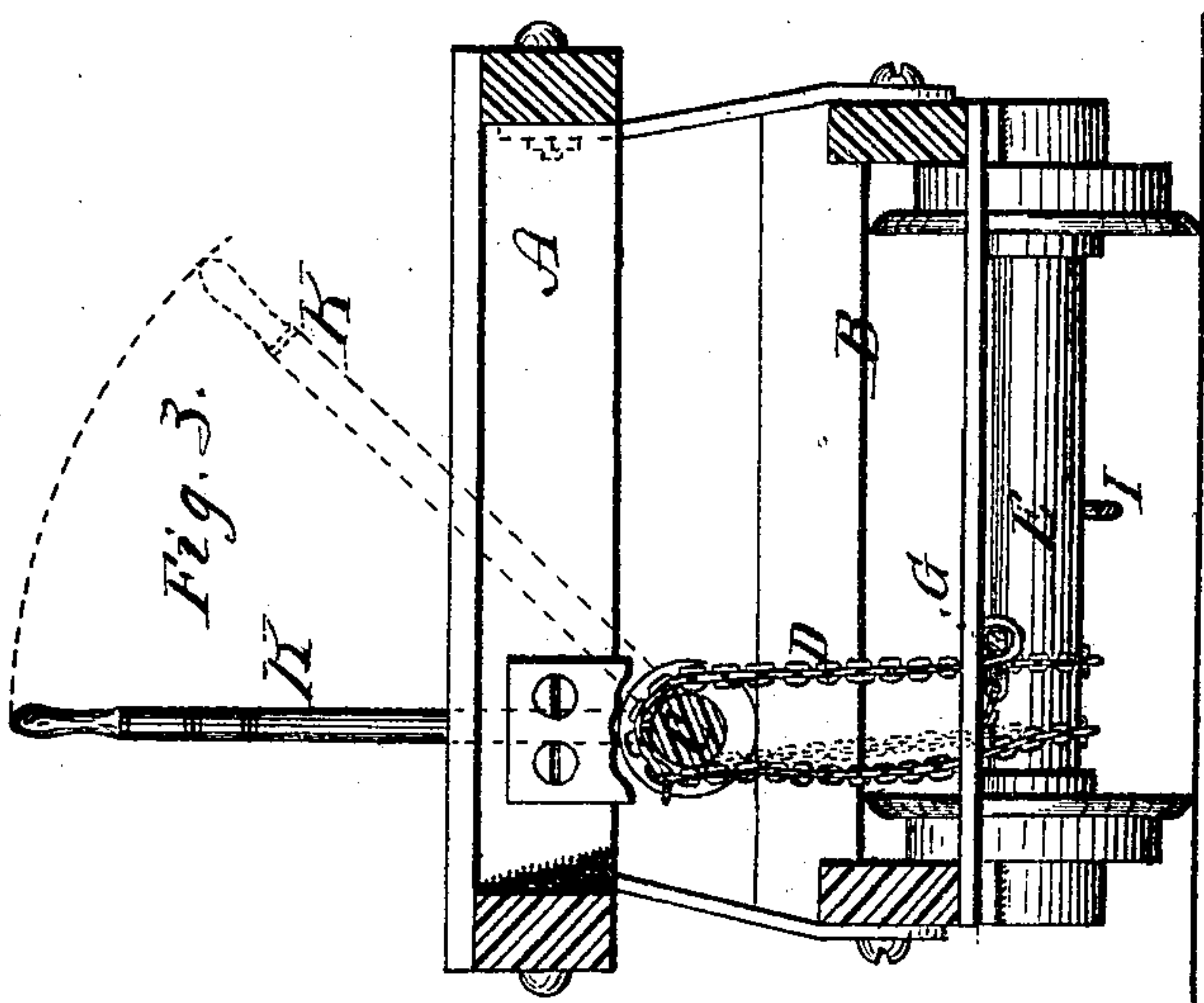
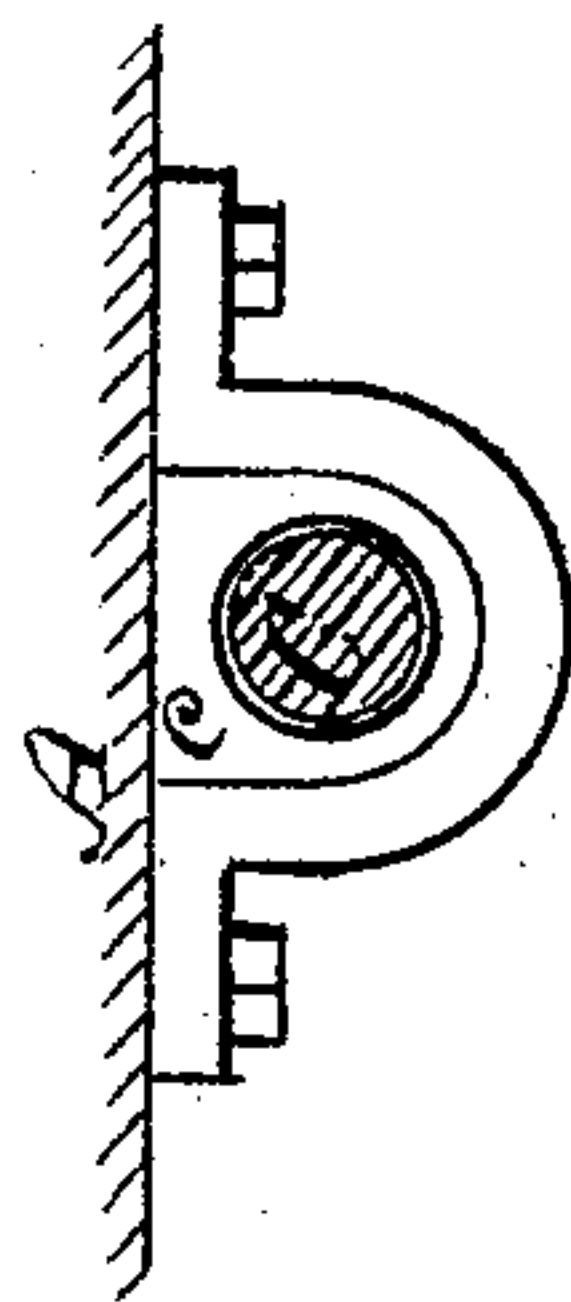
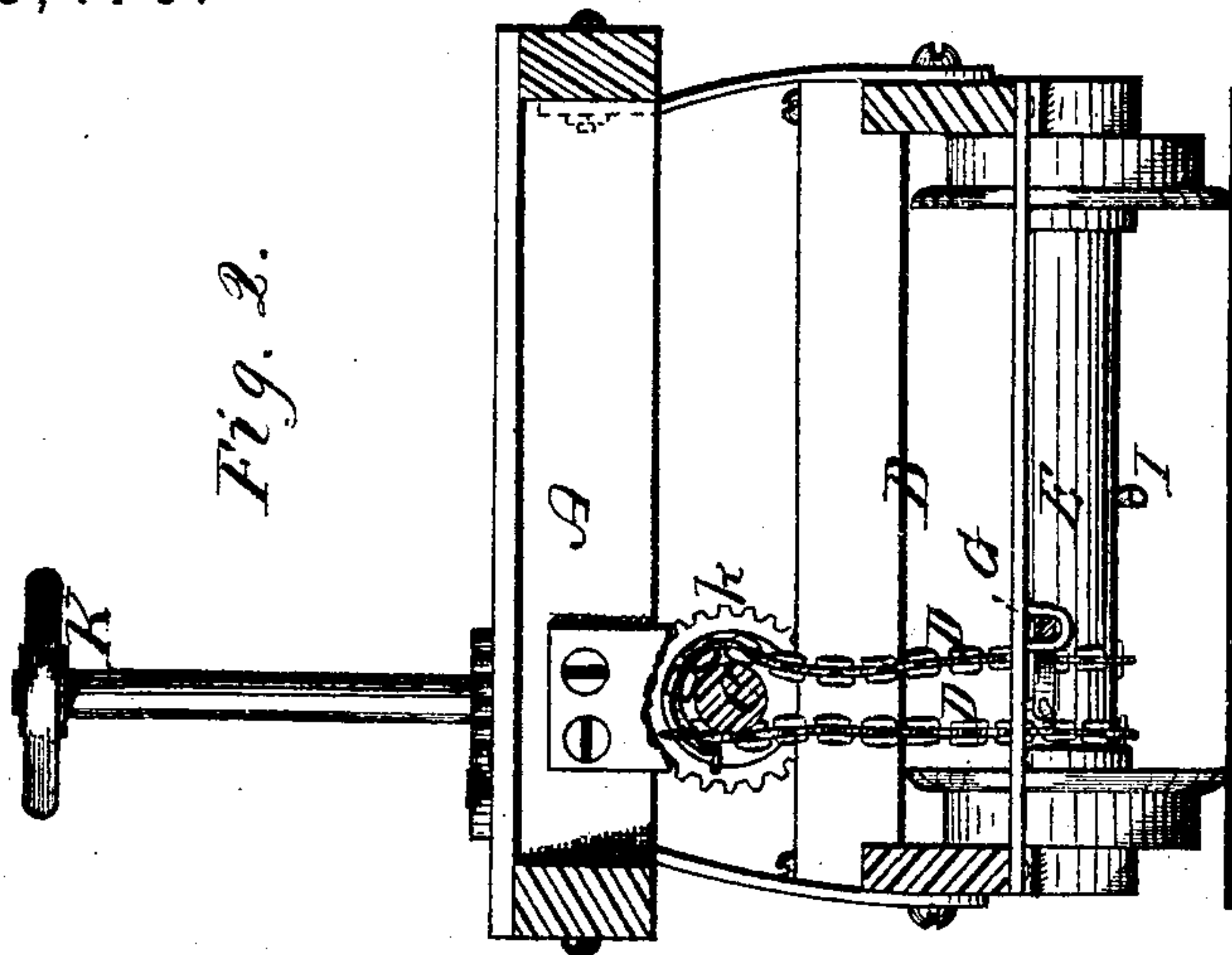
Witnesses,
E. M. Gallaher.
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UNITED STATES PATENT OFFICE.

JOHN G. WIGGIN, OF MOULTONVILLE, NEW HAMPSHIRE.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. 145,470, dated December 9, 1873; application filed June 30, 1873.

To all whom it may concern:

Be it known that I, JOHN G. WIGGIN, of Moultonville, in the county of Carroll and State of New Hampshire, have invented an Improved Car-Brake; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being a longitudinal vertical section, showing the ends of a car body and trucks as provided with my improved brake; Fig. 2, a transverse vertical section thereof in a plane indicated by the line *x x*, Fig. 1; Fig. 3, a transverse vertical section corresponding with the section in Fig. 2, but showing a modification of the construction of my improvement; Fig. 4, view of a part detached.

Like letters designate corresponding parts in all of the figures.

The nature of my invention consists in a brake-operating chain applied directly to and around one of the car-axes, and a turning or rock shaft for tightening the chain around the axle, in combination; and, secondly, in a series of such brake-operating devices on the several cars of a train, operating together by means of self-coupling heads and bars on the ends of the tightening-shafts, and brought into action by hand wheels or levers on the locomotive and the cars, all substantially as hereinafter specified.

In the drawings, let A A represent the ends or platforms of a car-body, and B B the trucks thereof. In Fig. 1, the portion at the right of the line *y y* represents one end of a car and of its trucks, and the part at the left of the said line represents the other end of the car and of its trucks. In order to apply the power of the revolving car-axes to the purpose, and to connect the cars of a train together and with the locomotive, so that the engineer can put on the brakes when necessary, each car has a connecting rod or shaft, C, extending its entire length, being provided at one end with a coupling-head, *a*, and at the other end with a coupling cross-bar, *b*, so that when two cars are coupled together the coupling-bar *b* of one car will enter between the jaws of the coupling-head *a* of the other car, in the manner indicated at the left hand in Fig. 1. Thus the connecting rods or shafts of all the cars and the

locomotive of a train are coupled together without interfering with the coupling and uncoupling of the cars themselves. The mouth of the coupling-head *a* is flaring, as indicated, in order to guide the cross-bar *b* therein when the cars are coupled together; and to allow one shaft to accommodate itself to the adjacent shaft, with which it is connected, as one car rises or lowers, or swerves laterally more than the other, one or both of the bearings of each shaft C is surrounded by a thickness of india-rubber, *c*, Fig. 4, so as to allow the bearings to yield laterally to some extent. The shaft C may have its bearings either under the body of the car or on the trucks. A chain, D, or its equivalent, winds with one turn around one of the axles E of the truck, the coil being double, as shown in Figs. 2 and 3; and at its middle it is connected with the shaft C over the axle, while its ends are joined to a connecting-rod, G, which extends to the brake-bar H of the other wheels of the truck, and is pivoted to one end of a swivel bar or lever, *d*, thereon, the other end of the said swivel-bar being pivoted to another connecting-rod, I, which extends back to the brake-bar J of the wheels, whose axle E receives the said brake-operating chain. With this arrangement, when the chain D is tightened around the axle E by turning the shaft C in either direction, its friction upon the axle causes it to be wound or to turn with the axle by the force of the latter's revolution, so as to draw upon the connecting-rod G, and thus draw upon the brake-bar H and force its rubbers *f' f* against the car-wheels; and also, through the swivel bar or lever *d*, it draws upon the connecting-rod I and the brake-bar J, and thereby forces its rubbers *g* against the adjacent car-wheels. When the chain is again loosened on the wheel-axle, the latter ceases to act upon it; and suitable springs separate the brake-rubbers from the wheels. The lower connecting-rod I is adjustable in length, or to the brake-bar J, by a screw and nut, *h*, as shown in Fig. 1, in order to take up slack on the chains in making up long trains, and to properly adjust the brakes.

In order to bring the chains D into action on the several cars, the shafts C are turned, either by applying power on the locomotive to a shaft thereon coupled to the shafts on the

cars, or by the shaft of any car being turned by hand through a hand-wheel and shaft, K, on the platform of the car, the said shaft having a bevel-wheel, *i*, on its lower end, that gears into another bevel-wheel, *k*, on the shaft C, substantially as shown in Figs. 1 and 2. The shaft C is turned in one direction or the other, according to the direction in which the car is moving, and for this reason especially the chain D is made double.

Instead of the hand-wheel and shaft K, connected by gearing with the shaft C, a lever, K, may be applied to the shaft C direct, as shown in Fig. 3, the movement of the lever being lateral, as indicated by dotted lines in the figure. This arrangement is simpler and cheaper than the hand-wheel device.

Since it is most convenient to arrange the connecting-shaft C on each car to one side of

the center, the engine should have two connecting-shafts—one each side of the center line—to accommodate the opposite ends of the cars coupled thereto.

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

1. The combination of the chain D with the axle E and the turning shaft C, substantially as and for the purpose specified.

2. A system of car-brakes, composed essentially of the self-coupling shafts C C, brake-chains D D, car-axles E, and hand-wheels K K, all combined to operate substantially as and for the purpose set forth.

Specification signed by me this 25th day of November, 1872.

Witnesses: JOHN G. WIGGIN.

ISAAC D. SMITH,

CHARLES H. LARRABEE.