(No Model.) 2 Sheets—Sheet 1.

G. F. CLEMONS.

CAR BRAKE.

No. 301,096. Patented July 1, 1884.

Fig 1

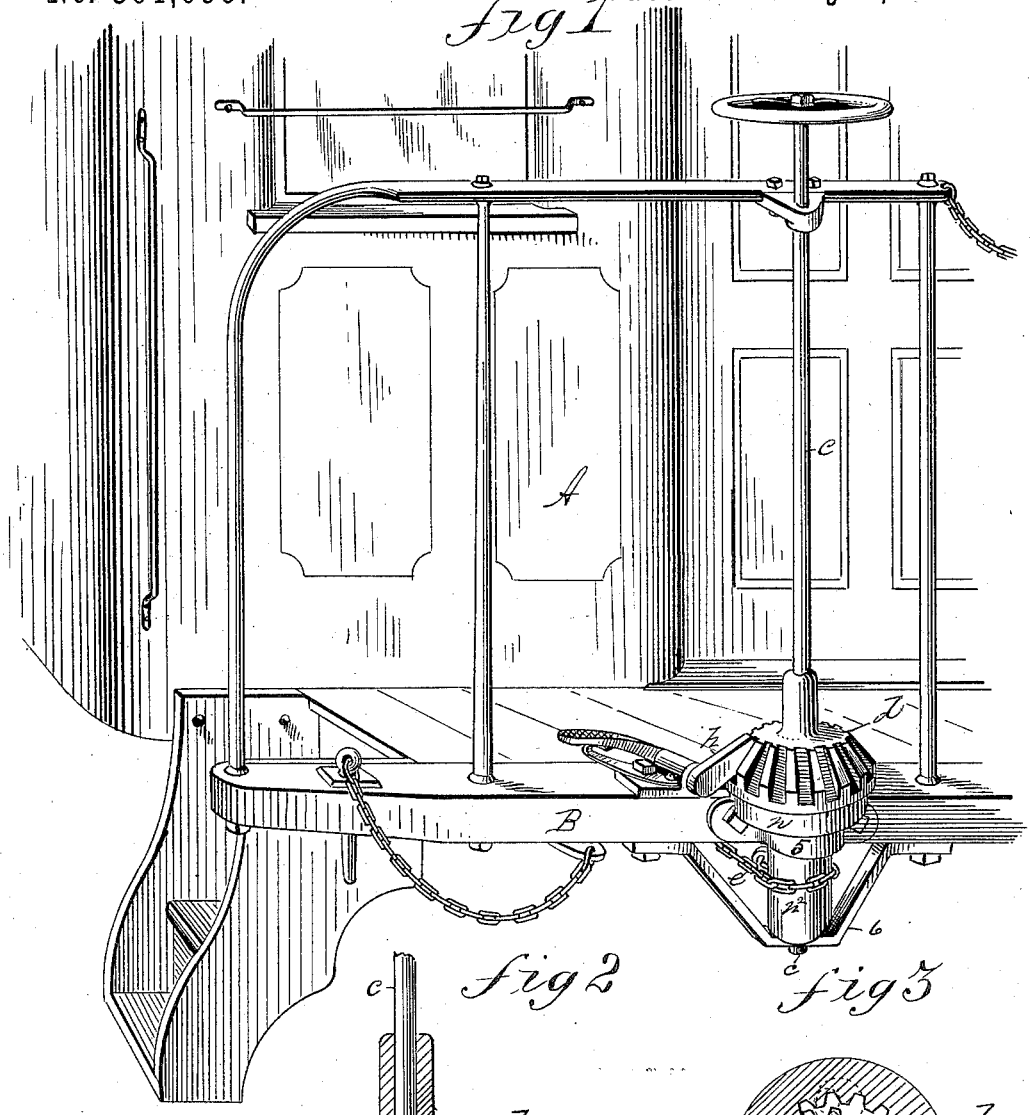


Fig 2

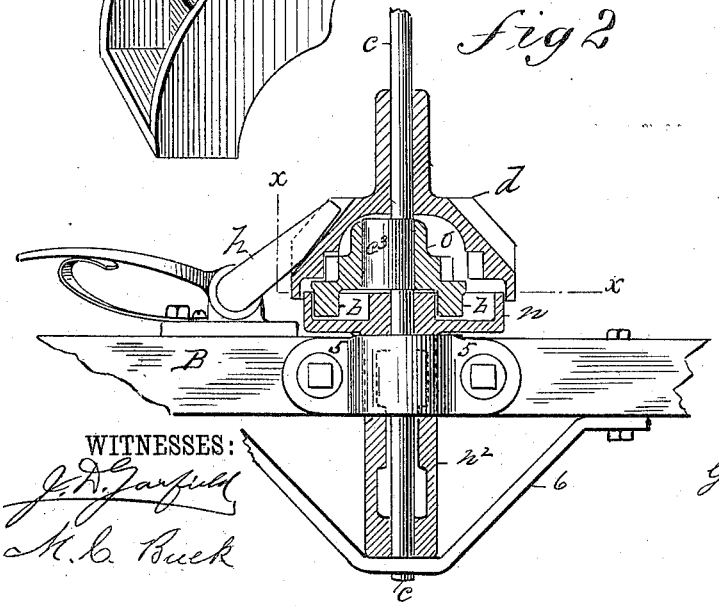
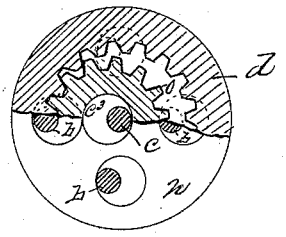


Fig 3



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(No Model.) 2 Sheets—Sheet 2.

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Fig 4

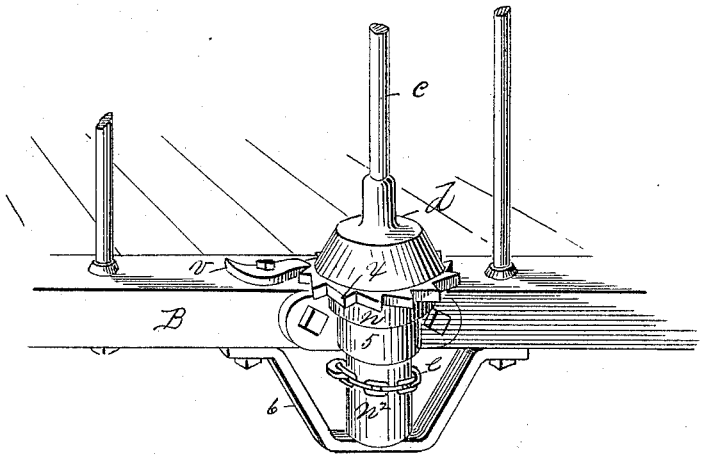


Fig 5

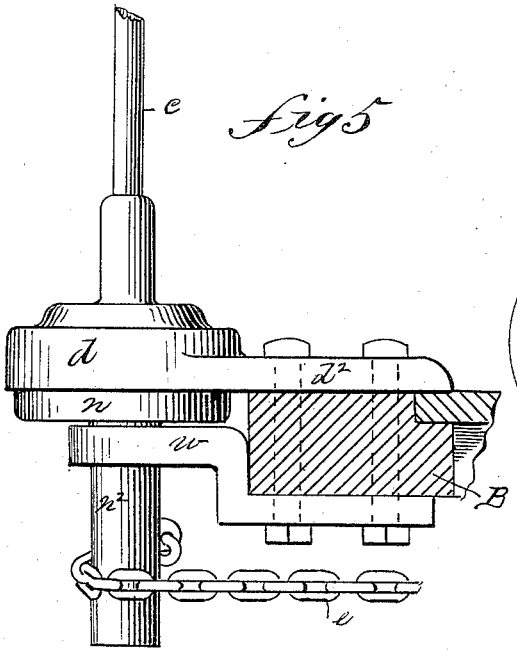
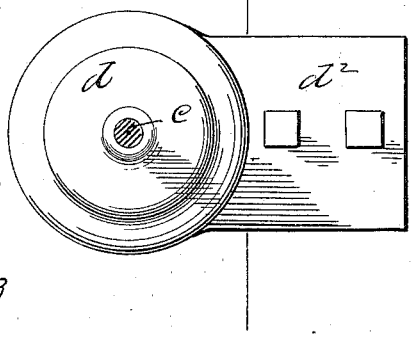


Fig 6



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UNITED STATES PATENT OFFICE.

GEORGE F. CLEMONS, OF SPRINGFIELD, MASSACHUSETTS.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 301,096, dated July 1, 1884.

Application filed December 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. CLEMONS, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Car-Brake-Operating Mechanism, of which the following is a specification.

This invention relates to improvements in car-brake-operating mechanism, the object being to provide more powerful means than have heretofore been available for applying the brakes to car-wheels, and which are capable of being so operated as to let the brakes off suddenly, as by ordinary brakes, or to put on and let off the brakes by turning the brake-wheel in both directions, and to provide mechanism for operating car-brakes which is (after the brakes are put on) adapted in itself, without the aid of pawl and ratchet or other similar retaining device, to resist the brake-strain.

In the drawings forming part of this specification, Figure 1 is an end view of a part of a car having applied thereto brake-operating mechanism embodying my improvements. Fig. 2 shows a part of the car-platform and the brake mechanism, partly in section. Fig. 3 is a plan view, partly in section, of a part of said operating mechanism. Fig. 4 illustrates a modification of the brake-holding devices shown in Fig. 1. Fig. 5 is a side view of the brake devices, showing the manner of applying them to a car when no stop devices are used. Fig. 6 is a plan view of Fig. 5.

The main operating mechanism, herein shown and described as operating in conjunction with the ordinary brake shaft and wheel and brake-chain, is that shown and described in my patent dated May 1, 1883, for "apparatus for transmitting differential rotary motion," to which reference may be had. The said patented mechanism consists, substantially, of the perforated disk *n*, in this device having a hub, n^2, thereon, to which one end of the chain *e* is secured, and around which the latter is wound when the brakes are put on by turning shaft *c*, as usual; also, of a pinion, *o*, located above said disk, and carrying on its under face a series of studs, *b*, which enter the perforations in disk *n*; also, of an eccentric, c^3, fixed in this device on the brake-shaft *c*, which, when said shaft is turned, carries the pinion around in an eccentric path; and, also, of an internal gear, *d*, with which the teeth of pinion *o* engage, and whereby when the latter is carried around eccentrically, as aforesaid, said pinion is caused to rotate, giving rotary motion to the disk *n* and its hub n^2, whereby the brakes are put on; but when the latter is done the internal gear, *d*, must be rigidly held from turning. Said gear *d* in Fig. 1 has its exterior provided with a series of teeth resembling gear-teeth, between which a rocking spring-actuated stop, *h*, is held. This internal gear takes the whole of the brake-strain after the brake-shaft *c* has been turned in the ordinary way to wind the chain *e* in putting on the brakes around the hub n^2. To let off the brake suddenly, letting the strain on chain *e* act to turn hub n^2, as it ordinarily does a common brake-shaft, the operator places his foot on the arm of the stop *h*, disengaging the latter from between said teeth on gear *d*, and letting the internal gear turn with shaft *c*, together with pinion *o* and disk *n*.

In Fig. 4 is shown the ordinary pawl-and-ratchet device commonly in use on car-brakes adapted to hold the gear *d*.

Fig. 5 illustrates the manner of hanging this device on a car when the hub n^2 is to be turned by the brake shaft and wheel, both to put on and let off the brakes. In this case gear *d* is provided with an arm, d^2, which is bolted rigidly to the car. A support, *w*, or other suitable device is put on the car under gear *d*, to hold the latter and hub n^2 against the strain of chain *e*. The hub n^2 on disk *n* in the construction shown in Fig. 1 is held in place by a strap, 5, as shown, bolted to the edge of the platform, and the lower end of the shaft *c* turns in the ordinary brace, 6. The turning of the eccentric c^3 in pinion *o* gives a rotary motion to the hub n^2, the speed of the latter being about one turn to five of the eccentric, more or less; but no amount of force exerted upon hub n^2 by the brake-chain can rotate it when the gear *d* is held fast, for the disk *n* is thereby turned against the studs *b* on pinion *o*, and the axis of the latter is eccentric to that of the disk *n*, and the periphery of said pinion engages with the internal gear, *d*, which, when

not allowed to turn, prevents the intermediate parts from rotating.

What I claim as my invention is—

1. In combination with the brake-shaft *c* and eccentric c^3, the perforated disk *n*, having hub n^2 thereon, the pinion *o*, provided with studs *b*, the internal gear, *d*, and a suitable stop to prevent it from rotating and to release it, substantially as set forth.

2. In combination, the gear *d*, rigidly secured to a car, the brake-shaft *c*, and eccentric c^3, the disk *n*, having hub n^2 thereon, and the pinion *o*, substantially as set forth.

GEORGE F. CLEMONS.

Witnesses:
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