

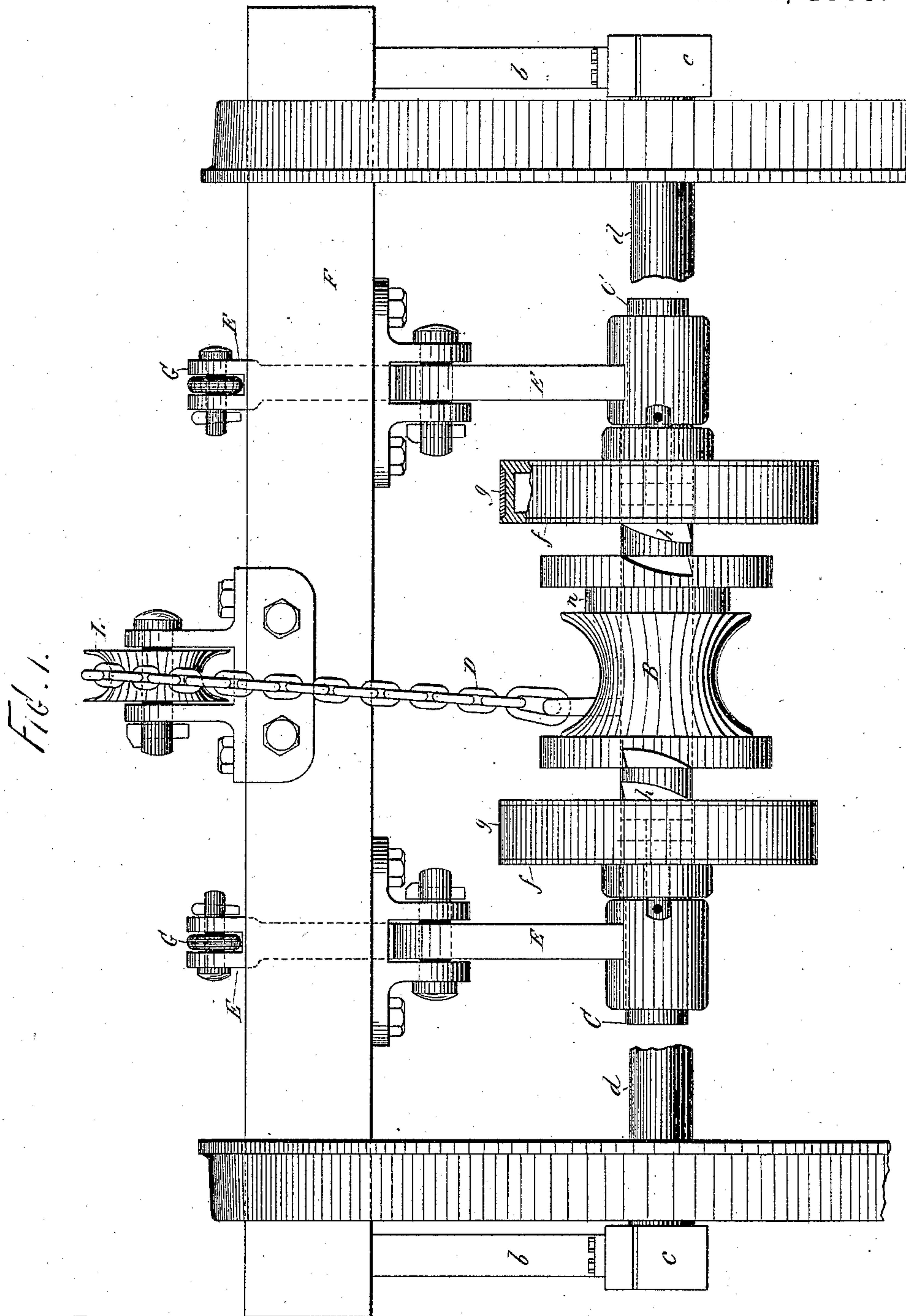
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4 Sheets—Sheet 1.

H. S. WEBSTER.
AUTOMATIC CAR BRAKE.

No. 290,723.

Patented Dec. 25, 1883.



Witnesses:
John Buckler,
Henry Lieb

Hanson J. Webster,
Inventor:
By North Ogden
Attorney.

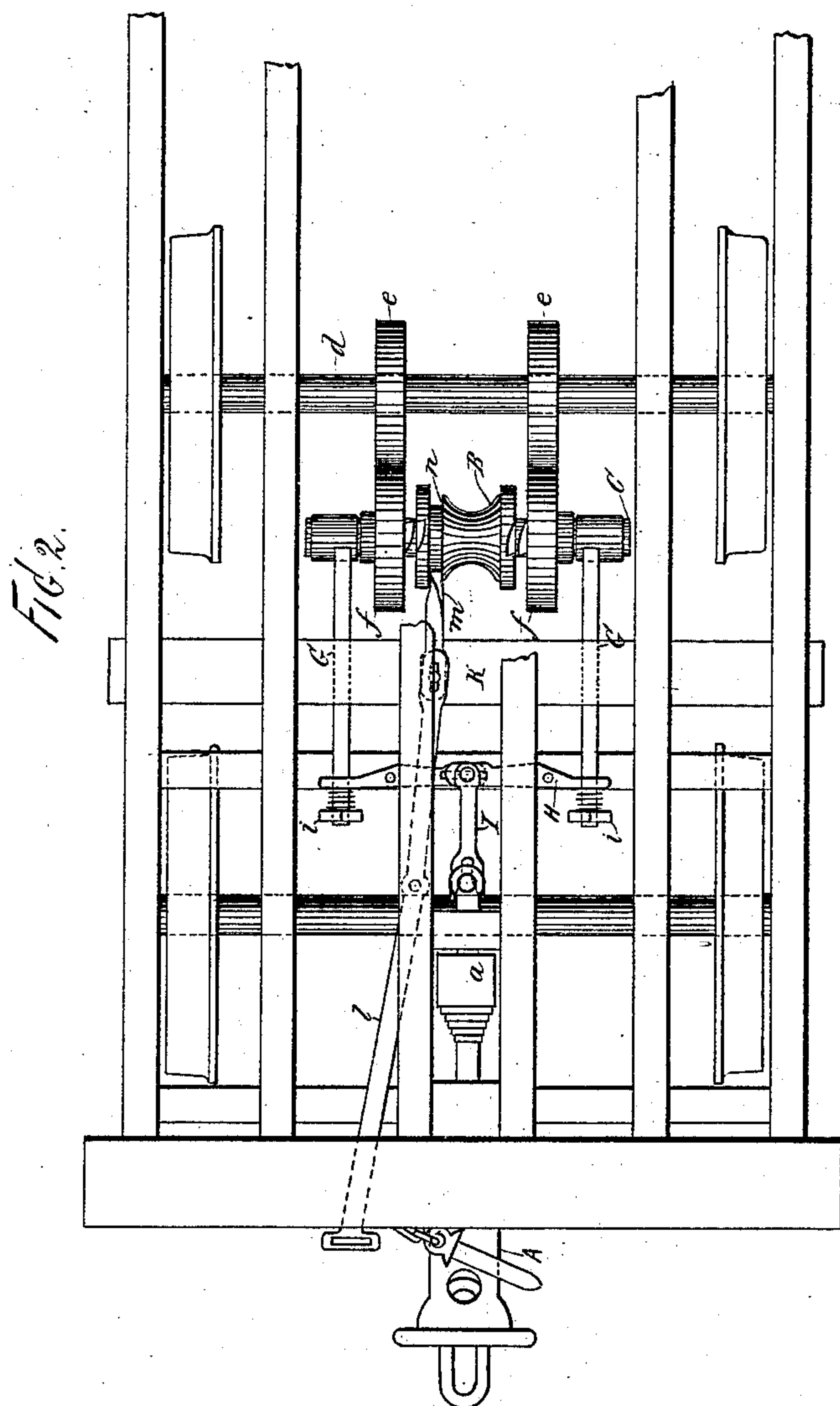
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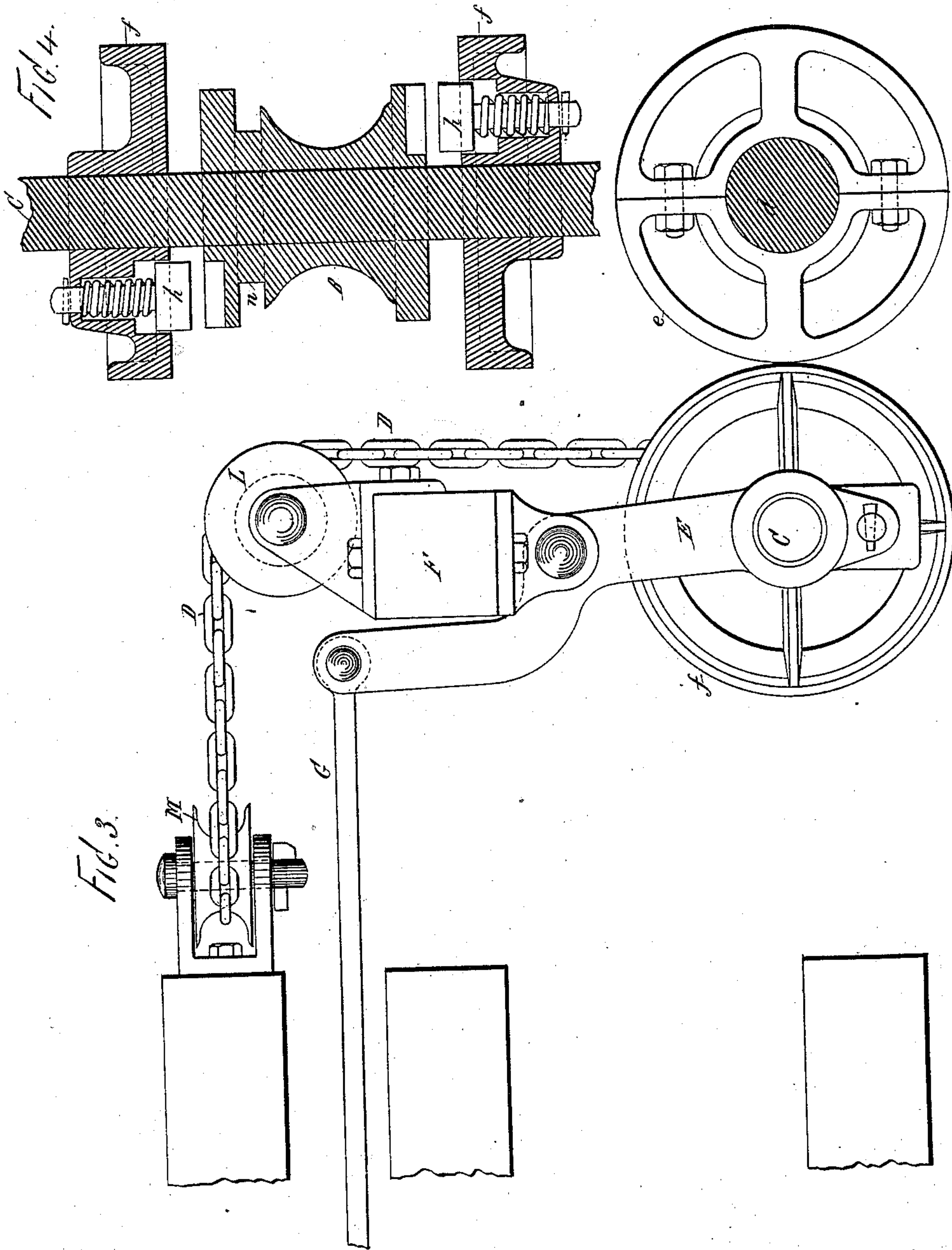
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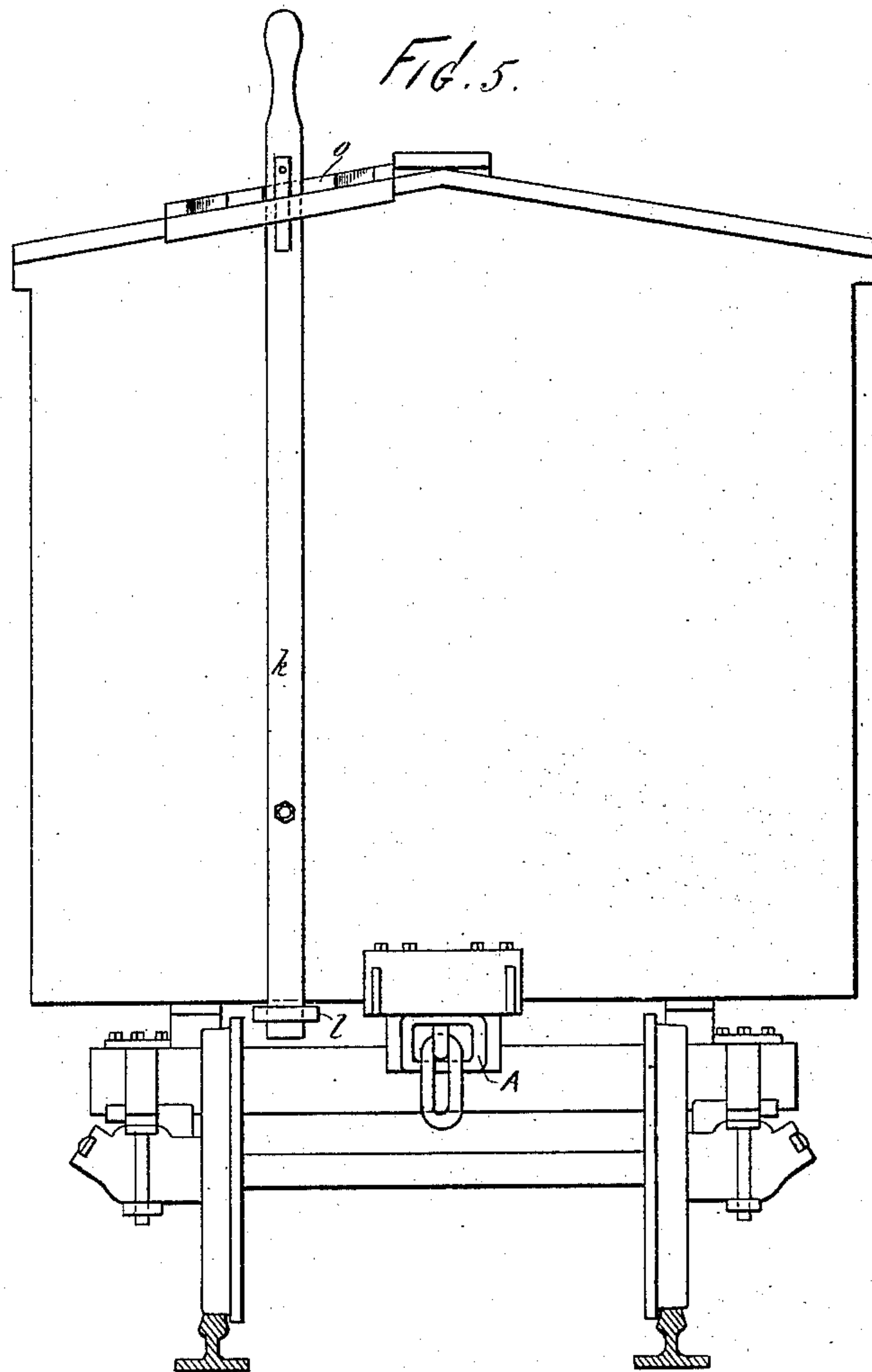
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Attorney.

UNITED STATES PATENT OFFICE.

HANSON S. WEBSTER, OF GLENSDALE, ASSIGNOR OF TWO-THIRDS TO
JOHN E. MULFORD, OF NEW YORK, AND MORTIMER G. LEWIS, OF
LOWVILLE, N. Y.

AUTOMATIC CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 290,723, dated December 25, 1883.

Application filed April 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, HANSON S. WEBSTER, of Glensdale, county of Lewis, and State of New York, have invented certain new and useful
5 Improvements in Automatic Car-Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 My invention has special relation to means for automatically moving or setting the brakes on car-trucks, through the medium of the coupler-buffer or draw-bar, by the force due to the momentum of the car, and to release the said
15 brakes as soon as the car-buffers fail to touch or crowd against each other.

The object of my said invention is to produce a strong, durable, and effective apparatus which may be applied upon any of the ordinary forms of car-trucks, and in connection
20 with the levers of any form of brake without disturbing or interfering with the arrangement of the hand-brake mechanism, and to so arrange the parts that they will operate automatically and at the will of the engineer, and
25 not be likely to get out of order. To accomplish all of this my improvements involve certain novel and useful arrangements or combinations of parts, principles of operation, and
30 details of construction, all of which will be herein first fully described, and then pointed out in the claims.

In the accompanying drawings, forming part of the specification, Figure 1 is a front elevation of a car-truck having my improvements
35 applied thereon, the axle of the car-wheels being broken out at the middle part to facilitate the illustration, the chain drum or spool being shown as located at its neutral point,
40 and the top of one of the friction-wheels upon the axis of said drum being sectioned to show the band or rim applied thereon. Fig. 2 is a plan or top view illustrating the arrangement of the essential parts of my improved device
45 in connection with the draw-bar and car-axes. Fig. 3 is a sectional elevation, showing the arrangement of the hangers for the axle of the chain-drum and the guiding-sheaves for the operating-chain. Fig. 4 is a horizontal sec-

tion through the axis of the chain-drum, 50 showing the spring-latch connections with the friction-wheels, which are applied upon the car-axle. Fig. 5 is an end elevation of a car-body, showing one form of shifting-lever applied thereon for the purpose of setting the
55 chain-drum at the proper point on its shaft, according to the direction of movement of the car.

In all these figures like letters of reference wherever they occur indicate corresponding 60 parts.

A represents the draw-bar of any car, which bar may be of any approved pattern. It is usually supplied with a spring, as *a*.

B is a drum or spool mounted upon a shaft, 65 C, and arranged to wind or unwind the operating-chain D, which chain is intended to be attached to or connected with the brake-lever, of whatever pattern that may be, and to operate the same for the purpose of applying 70 the brakes, setting and holding them or releasing them, same as is done with the ordinary hand appliances. The axle C, which carries the chain-drum, is swung in hangers E, made solid and substantial and hinged upon any suitable 75 cross-piece, as F, which may be supported by the car-truck—as, for instance, by the stays *b*, applied upon the axle-boxes *c* of the car-wheel axle *d*. Upon the axle *d* are two friction wheels or disks, *e e*, firmly secured, so as 80 to revolve therewith, and preferably constructed in sections bolted together, as shown in Fig. 3, so that they may be readily and securely applied upon any car-wheel axle after the parts of the truck have been assembled. 85 Upon the axle C, at like distances, are also firmly secured two corresponding friction wheels or disks, *f f*. These are intended to receive motion from the disks *e e*, and to obviate too great tendency to wear, they are pro- 90 vided with loose rims or tires *g*, set in suitable recesses provided for them, and made of steel or other wear-resisting material. Within each of the disks *f* is a strong spring latch or bolt *h*, arranged to engage in a corresponding notch 95 in the chain-drum, and to turn said drum in one direction with the disk. One latch will turn the drum in one direction, while the other

is arranged to move it in the opposite direction, whereby, by shifting the drum on its axle, so that it will bear against one or the other of the disks *f*, the direction of its winding movement may be made to correspond with the direction of movement of the car. By leaving the drum at a point midway between the two disks *f*, neither disk can cause it to turn, and therefore at such time the brakes will not be set by the improved mechanism.

G G are two rods or bars, connected with the hangers *E E* and with the draw-bar *t* through the medium of a cross-piece, *H*, and a link, *I*. The length of bars or rods *G* is adjustable, as by the set-screws *i*, so that the swing of the chain-drum axle may be regulated to adapt it for use on any truck or to correspond with the extent of movement of the draw-bar. The link *I* is forked at the end, as indicated in Fig. 2, and connected with the inner end of the draw-bar by a suitable pin, the arrangement being such that any backward pressure upon the draw-bar will be transmitted to the rods *G* and other parts of the mechanism; but if the draw-bar be pulled or jerked out, (as frequently happens,) it will not damage the brake-operating appliances. A consideration of the arrangement indicated in the drawings will show that as the draw-bar is pushed back it will force the friction-disks *e e* and *f f* into contact, and, if the car be moving and the chain-drum properly adjusted, will cause the same to turn, thus winding up the chain *D*, and thereby setting the brakes. For instance, if the moving-power, as the engine, be in advance of the car and pulling it forward, any retardation of the movement of the engine will cause a backward pressure upon the draw-bar, and will thus automatically set the brakes, the drum being in the proper position for that purpose. In this case, as soon as the engine commences to back, the car-wheels turn in the reverse direction, and thus unwind the chain and release the brakes. If, then, the hand-brakes be applied upon the car most remote from the engine and the drum be shifted on its axis, the backward thrusting movement of the engine will cause the brakes to be set, and when the engine moves ahead again the brakes will be released.

For shifting the drum *B*, the levers *k l* are employed, these being suitably pivoted and made to move a forked arm, *m*, which rides in a narrow recess or neck, *n*, formed in the drum *B*. These levers for shifting the drum may be located in any desired way, so as to be convenient of access.

Upon the upper part of the car it may be convenient to place the holding-guide *o*, with a spring suitably adjusted, to maintain the handle in the notch of the guide in which it may be placed, and yet allow it to be readily shifted as may be required.

The king-bolt of the truck is located in a central bolster, as *K*, and the pin or joint connecting the shifting-lever *l* and the bar *m* is so

placed as to lie in a plane through the king-bolt and at right angles to the longitudinal axis of the truck, so that the truck may move as required, and yet not interfere with the efficiency of the lever, to cause the shifting of the drum upon its axle, the lever *l* being connected with the timbers of the car-body, and therefore subject to movements independent of the car-truck.

It has not been deemed necessary to illustrate the brake-shoes, nor the particular levers applied in connection therewith, because those may be of any pattern, and the chain *D* has only to be attached thereto in any manner.

At *L* and *M* are suitable sheaves, located so as to lead the chain *D* in any required direction.

The improvements are especially intended for use upon freight-cars, but obviously they may be applied on any car, and might be applied upon horse-cars, particularly that class using the pole.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. The chain-drum, movable from side to side upon its axle by suitable levers, the friction-disks upon the car-wheels, and chain-drum axles, the intervening spring-latches, and the adjustable side rods or bars connected with the draw-bar and arranged to move or swing the chain-drum axle upon its hangings, as explained, so as to bring the disks thereon into contact with those upon the car-wheel axle, these parts being combined and operating substantially in the manner and for the purposes set forth.

2. In an automatically-operating car-brake, the draw-bar mounted upon the car-body and combined with adjustable side bars and levers mounted upon the truck and connected with the axle carrying the adjustable chain-drum, and the friction-disks having the spring latches in their sides, said axle being arranged to swing, as explained, so as to bring the disks thereon into contact with those upon the car-wheel axle, substantially as and for the purposes set forth.

3. In combination with the draw-bar and connected adjustable side levers, the chain-drum mounted upon a swinging axle between two friction-disks carrying spring-latches, arranged to be turned in the manner specified, the forked bar and the connecting-levers, mounted upon the car-body, pivoted as explained, extending to the outside thereof and arranged to shift the drum on its axle, so as to cause it to revolve in either direction after being brought into contact with one of the friction-disks, substantially as and for the purposes set forth.

4. In an automatic brake of the character herein set forth, the chain-drum adjustable by suitable levers from side to side upon its axle, the same being combined with the spring-latches mounted in the sides of the friction-

disks applied upon said axle, the said disks being turned in either direction by contact with suitable disks mounted upon the car-wheel axle, substantially as and for the purposes set forth.

5 5. In an automatic-brake mechanism having the shifting chain-drum and friction-disks mounted upon the same swinging axle, arranged to be operated through the medium of
10 the draw-bar, the herein-described forked links connecting the adjustable operating-levers with the draw-bar and arranged as set forth, so that if the draw-bar be pulled out the remainder of the brake setting and operating
15 mechanism will remain intact, substantially as shown and described.

6. The combination, with the levers pivoted to the trucks, of the side bars running back to the swinging axle of the chain-drum
20 to move the same, said axle being provided with friction-disks carrying spring-latches, arranged to engage with said drum, the levers being connected with the draw-bar by a suitable link, and the side bars being made ad-
25 justable to correspond with limit of movement of the draw-bar, substantially as shown and described.

7. In a brake mechanism of the character herein set forth, the combination of the levers
30 and forked bar for shifting the chain-drum upon its axle between the two disks, provided with spring-latches, and mounted upon the

same axle, the bar being pivoted to its adjacent lever at a point at right angles with the longitudinal axis of the truck and opposite
35 the position of the king-bolt and engaging with the drum, substantially as and for the purposes explained.

8. In a brake mechanism, the combination, with the shifting chain-drum, mounted upon
40 a swinging axle connected with the draw-bar by adjustable side levers, of the friction-disks mounted upon the same axle, said disks being revolved by contact with suitable disks upon the car-wheel axle, and carrying the spring-
45 latches in their sides, the drum and its shifting and operating mechanism being arranged substantially as set forth, so that said drum may be set at a point midway between the disks and thus allowed to remain stationary,
50 as and for the purposes explained.

9. In a brake mechanism of the character herein set forth, the friction-disks applied upon the axle of the chain-drum, and provided with the loose bands or tires, substantially as
55 and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

H. S. WEBSTER.

Witnesses:

JOHN BUCKLER,
WORTH OSGOOD.