

(No Model.)

W. J. CARTWRIGHT.  
CAR BRAKE.

No. 570,594.

Patented Nov. 3, 1896.

FIG. 1

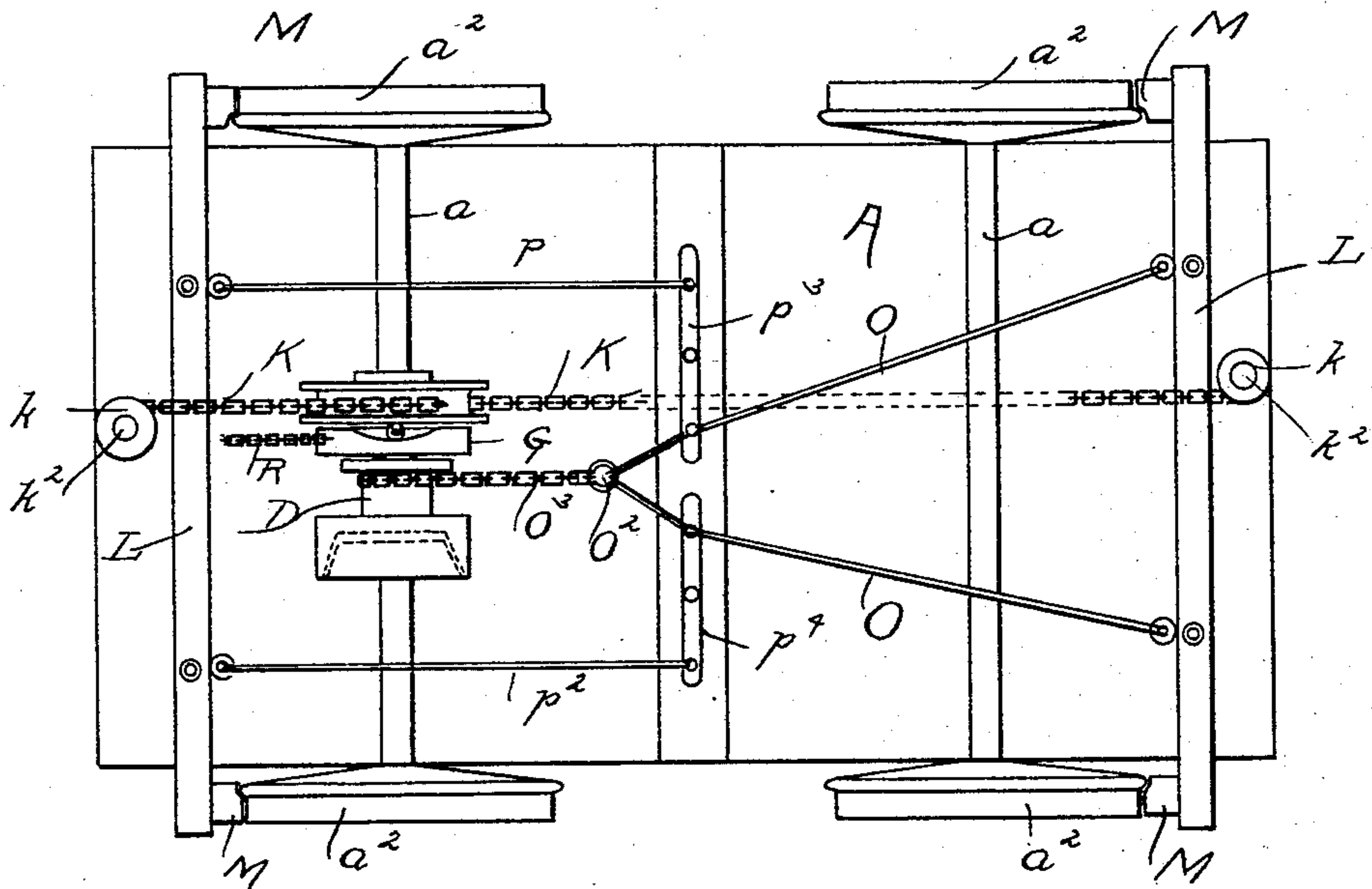


FIG. 2

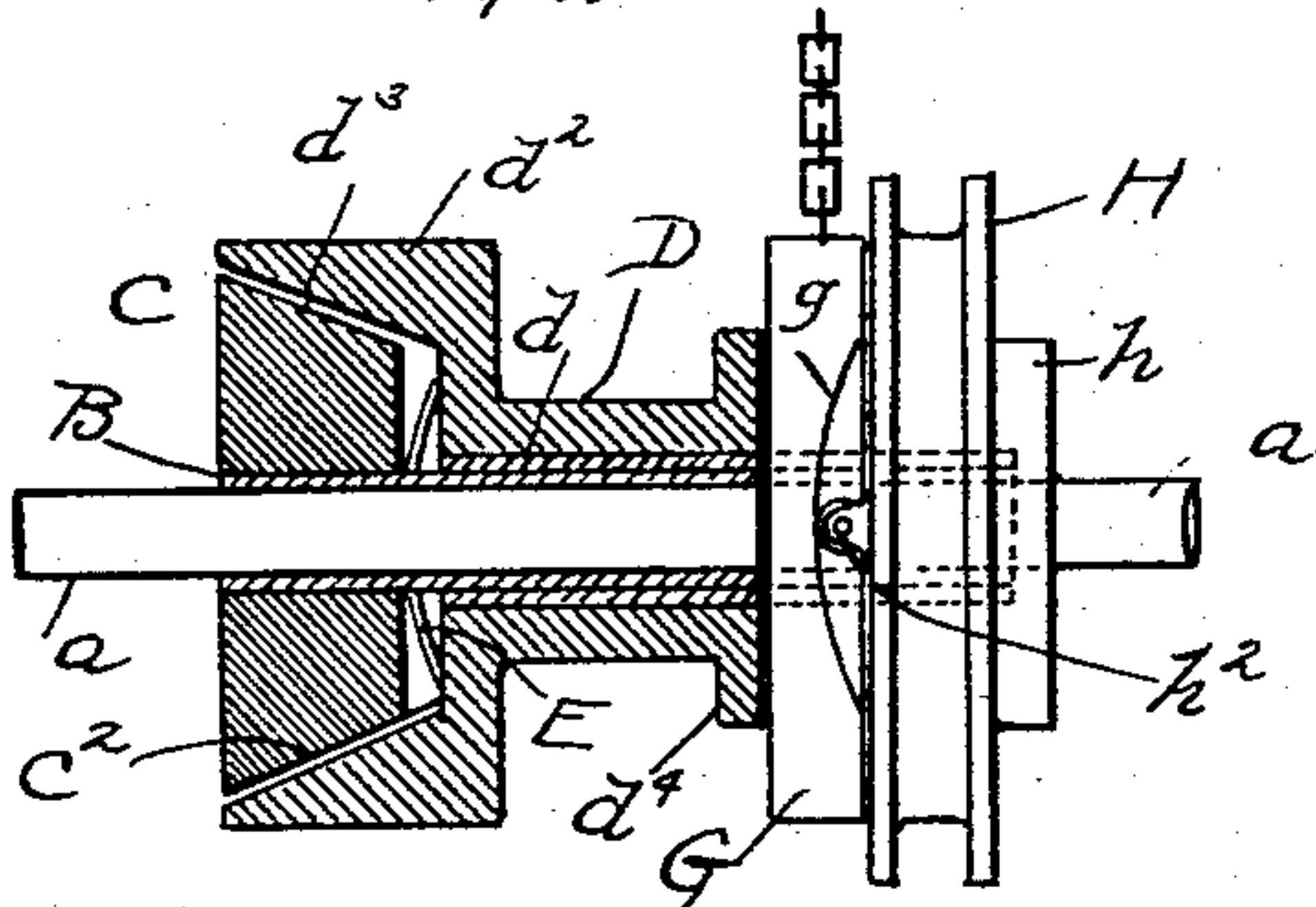
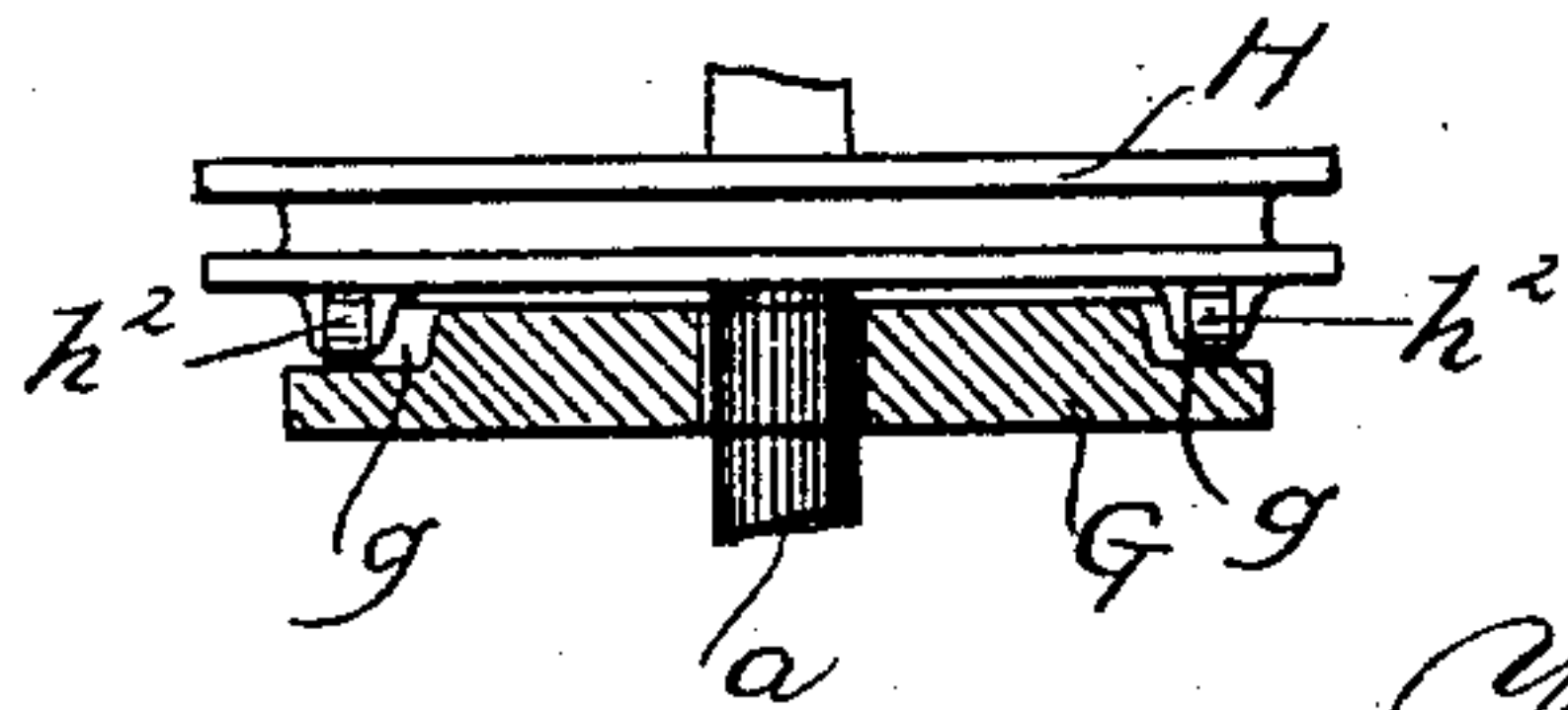


FIG. 3



WITNESSES:

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C. Gerst.

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BY  
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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

WILLIAM J. CARTWRIGHT, OF NEW YORK, N. Y.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 570,594, dated November 3, 1896.

Application filed March 10, 1896. Serial No. 582,543. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. CARTWRIGHT, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to car-brakes, and the object thereof is to provide an improved device of this class which is adapted to be connected with tramway-cars and which is of such construction that the momentum of the car assists in the operation of the brake which is connected with one of the axles thereof; and with this and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a bottom plan view of a car provided with my improved brake, and Figs. 2 and 3 represent details of the construction.

In the drawings forming part of this specification, A represents the bottom of a car, and  $a$  the axles, which are provided with the usual wheels  $a^2$ , and in the practice of my invention I mount upon one of the axles of the car a tube B, which is rigidly secured to the axle, so as to prevent the braking device from operating directly thereon, and consequently the wear of the axle, and rigidly secured to one end of said tube B is a circular brake-head C, the perimeter of which is beveled or inclined on its inner side or surface, as shown at  $C^2$ . I also provide a clutch-sleeve D, which is mounted on the tube B and through which passes a tube  $d$ , which also incloses the tube B, and the tube  $d$  is rigidly secured to the clutch-sleeve D, and the clutch-sleeve D is provided at one end with a clutch-head  $d^2$ , having an outwardly-directed annular flange or rim, the inner walls of which are inclined or beveled inwardly, as shown at  $d^3$ , so as to correspond with the adjacent beveled or inclined perimeter of the clutch-head C, and between the clutch-head  $d^2$  and

the clutch-head C is placed a spring E, which is designed to separate said parts.

The end of the clutch-sleeve D opposite the clutch-head  $d^2$  is provided with an annular flange  $d^4$ , and mounted on the tube  $d$ , adjacent to the clutch-sleeve or the annular flange  $d^4$ , formed thereon, is a disk G, adjacent to which and also mounted on the tube  $d$  is a drum H, and the clutch-sleeve D, the disk G, and the drum H are held in position by a collar  $h$ , which is rigidly secured to the axle  $a$ .

The drum H is provided on the side thereof adjacent to the disk G and at opposite sides with rollers  $h^2$ , and said rollers are adapted to bear upon inclined surfaces  $g$  in the adjacent sides of the disk G, said inclined surfaces being curved or segmental in form, as shown in Fig. 2. I also connect with the opposite sides of the drum H two similar chains K, which extend in opposite directions to the opposite ends of the car and each of which connects with the drum  $h$ , which is mounted on the lower end of a shaft  $k^2$ , which extends upwardly through the platform of the car, and pivotally suspended from each end of the platform is a brake-bar L, the opposite ends of which are provided with brake-shoes M, and connected with one of said bars are rods O, which extend backwardly and are connected with a ring  $O^2$ , which is provided with a chain  $O^3$ , which is connected with the clutch-sleeve D, which serves as a drum therefor, and connected with the opposite brake-bar L are two rods P and  $P^2$ , the first of which connects with the outer end of a lever  $P^3$ , the inner end of which is connected with one of the rods O and the other of which connects with the outer end of a lever  $P^4$ , the inner end of which connects with the other rod O, and secured to the disk G is a chain R, one end of which is connected with the bottom of the car, so as to prevent the revolution of the disk G.

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof.

Whenever it is desired to brake or stop the car, one of the shafts  $k^2$  is operated and the corresponding chain K revolves the drum H. At each revolution of the drum both of the



brake-bars L are drawn into operative position, so that the brake-shoes M operate in connection with the wheels  $a^2$  of the car, and this operation results from the connection of the rods O and the rods P and P<sup>2</sup> with the levers P<sup>3</sup> and P<sup>4</sup>, and at the same time that the brake-bars L are operated the revolution of the drum H by means of the rollers  $h^2$ , which move over the inclined surfaces  $g$  of the disk G, forces the clutch-sleeve D outwardly in the direction of the clutch-head C and causes the clutch-head  $d^2$  to operate in connection therewith. By means of this construction the car can be instantly or almost instantly stopped, and the force of the clutch and of the operation of the brake-shoes will depend upon the power applied to the shafts  $k^2$ , and by reason of the peculiar construction of the clutch but slight power is necessary to cause the same to operate so as to stop the car.

This device is simple in construction and operation and is not likely to get out of order or to be broken or to fail to operate, and it is evident that changes therein and modifications thereof may be made without departing from the spirit of my invention or sacrificing its advantages, and I reserve the right to make all such alterations in and modifications of the construction herein described as fairly come within the scope of the invention.

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

1. The combination with the truck or frame of a car, and with one of the axles thereof, of a circular brake-head rigidly connected with said axle, a clutch-sleeve provided with a clutch-head which is movably mounted on said axle, a disk adjacent to said sleeve, and a drum adjacent to said disk, said drum and said disk being provided with means whereby when the drum is revolved, the disk is forced in the direction of the clutch, and said drum

being provided with means for revolving the same, consisting of chains which are connected therewith, and which extend in opposite directions to each end of the car, and brake-bars pivotally suspended beneath each end of the car, one of which is connected with the sleeve of the clutch by means of a chain and rods which are connected with the inner ends of levers, with the outer ends of which are connected rods which connect with the opposite brake-bar, substantially as shown and described.

2. The combination with the axle of a car of a supplemental brake device consisting of a tube mounted on said axle and rigidly secured thereto, and upon said tube a rigidly-mounted brake-head with beveled perimeter; and movably mounted upon said tube a tubular sleeve provided at one end with a recessed head adapted to engage by friction with the brake-head and upon the opposite end of said sleeve a disk having upon its outer side two inclined surfaces diametrically opposite to each other, and adjacent to said disk and rigidly mounted upon the axle a drum carrying a wheel having on one side rollers adapted to engage with the inclined surface of the disk and force the sleeve outwardly, said wheel being provided with a double-flanged periphery and the device as a whole operated by means of chains and levers connected with a power-shaft and brake-bars provided with brake-shoes, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 7th day of March, 1896.

WILLIAM J. CARTWRIGHT.

Witnesses:

C. GERST,  
H. CORCORAN.