

(No Model.)

E. E. BAKER.

CAR BRAKE.

No. 295,096.

Patented Mar. 11, 1884.

Fig. 1.

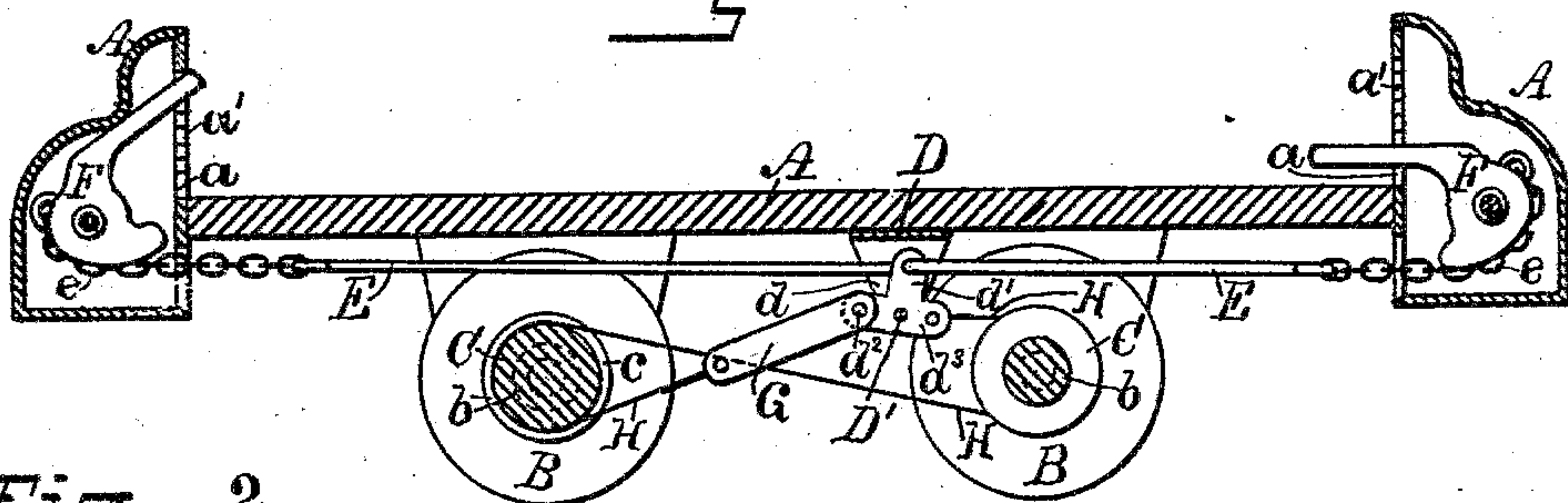


Fig. 2.

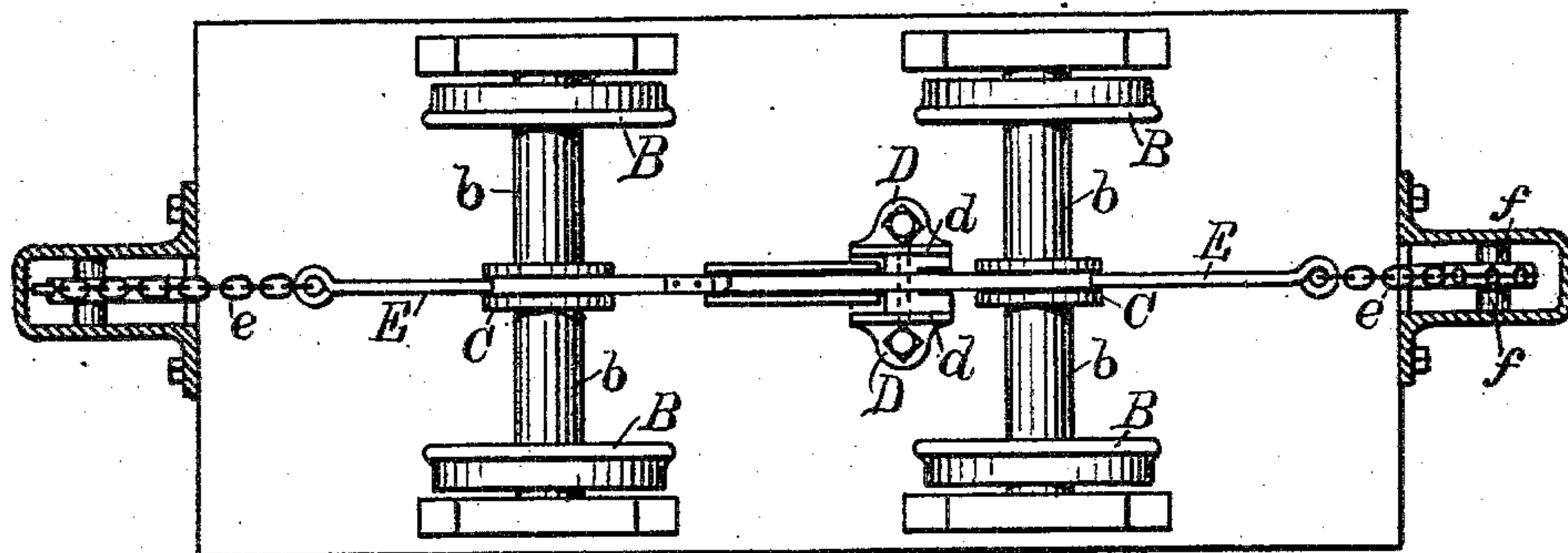


Fig. 3.

Fig. 4.

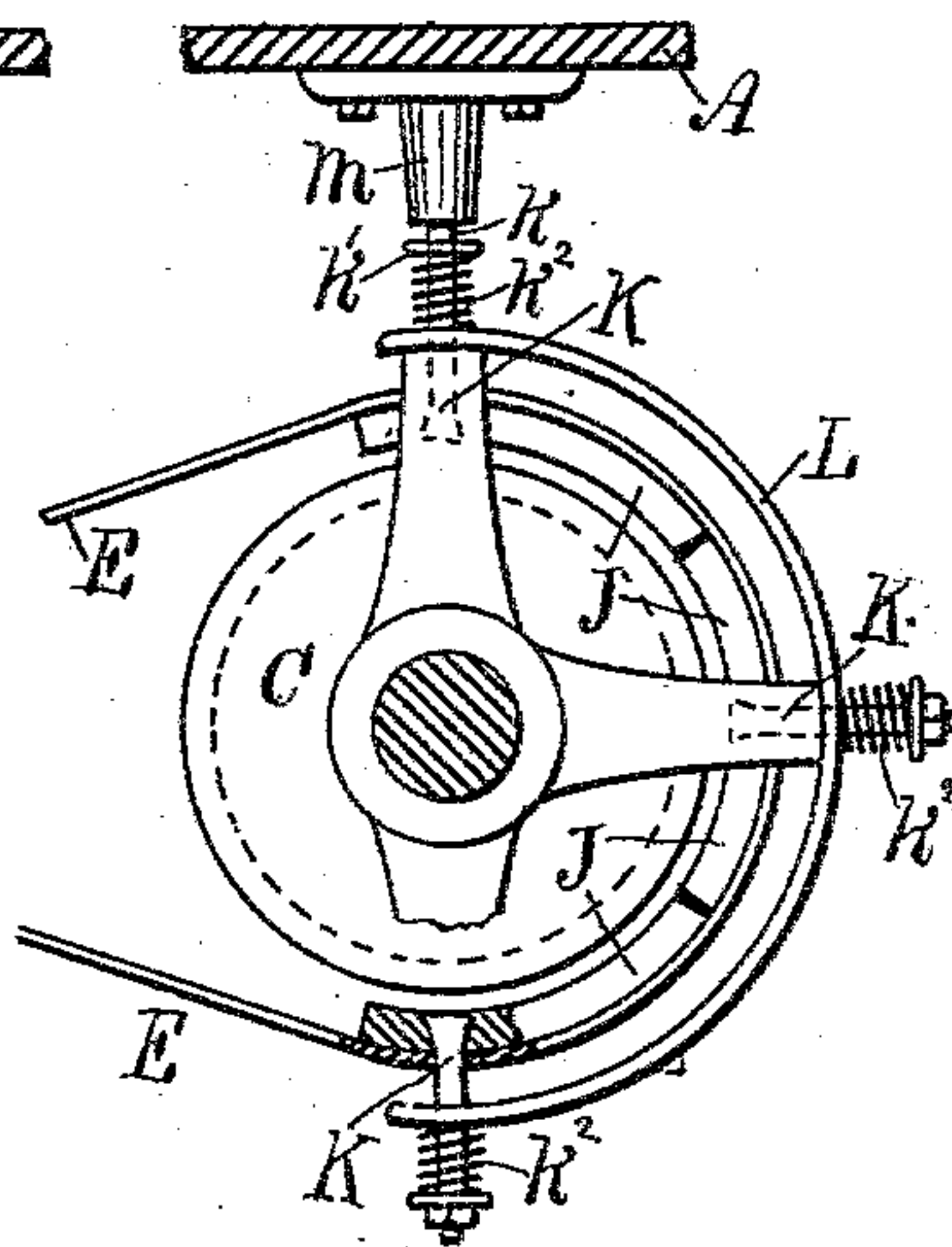
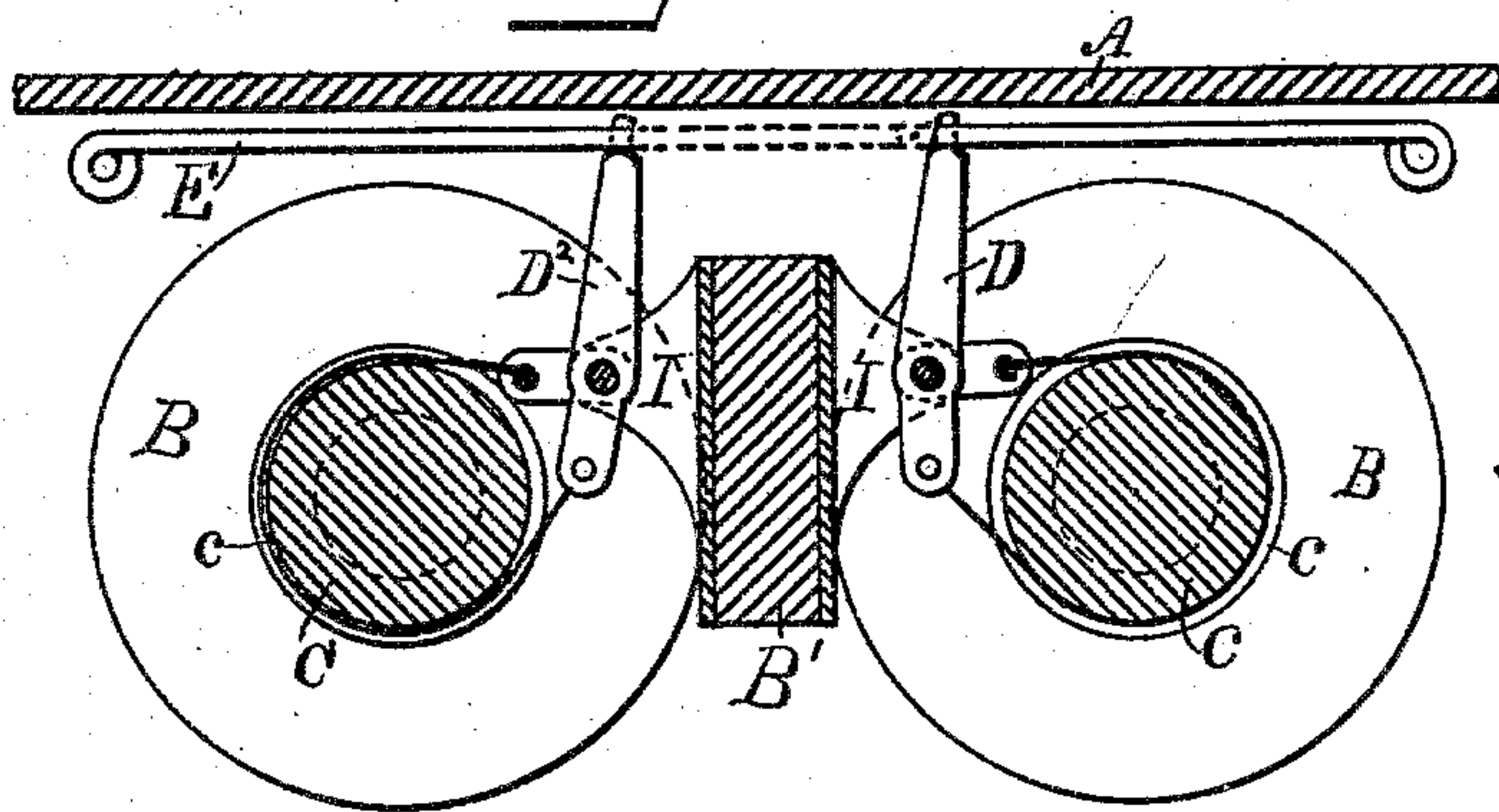
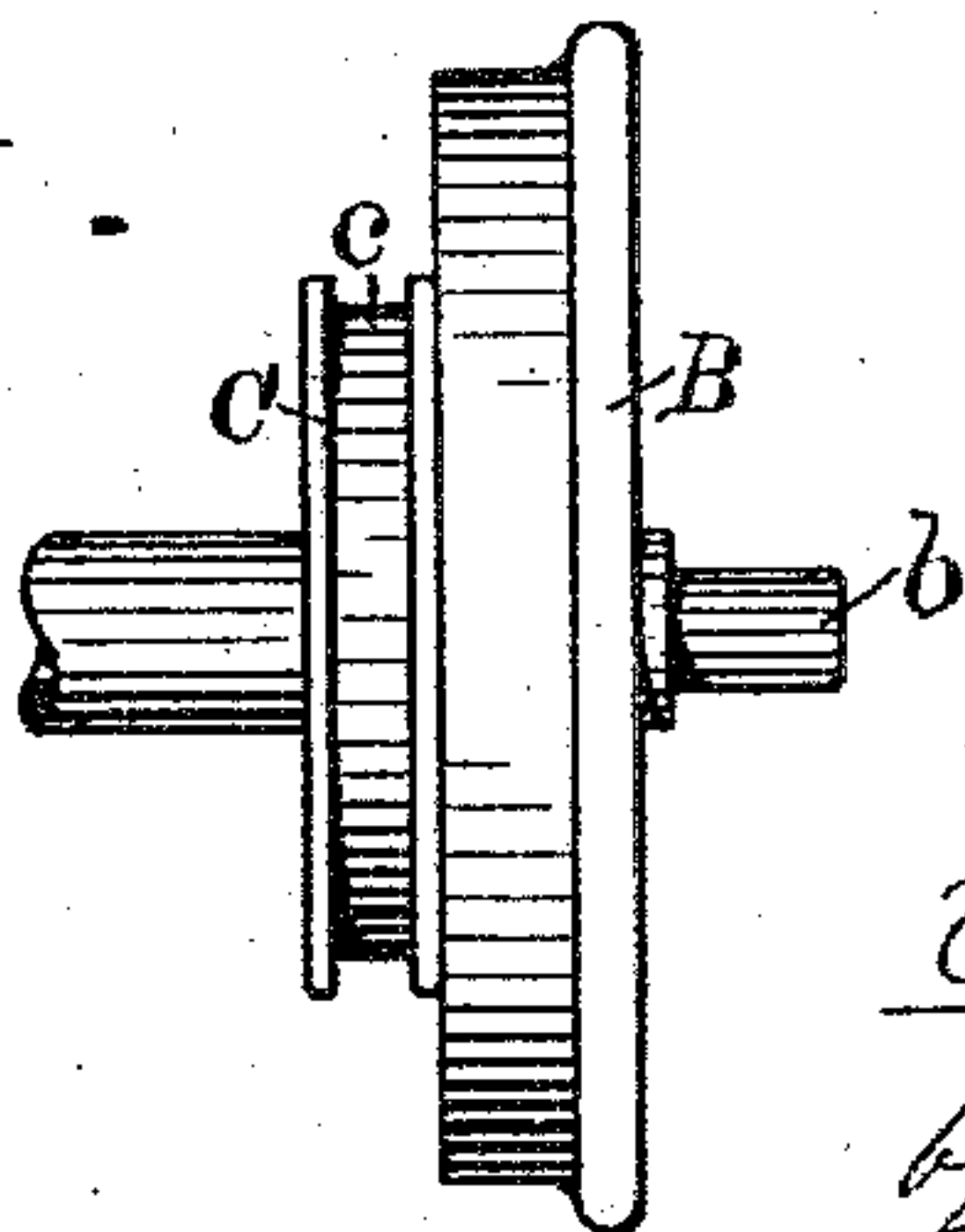


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ELIJAH E. BAKER, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO MARK SHARP, OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 295,086, dated March 11, 1884.

Application filed December 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH E. BAKER, of the city and county of Providence, State of Rhode Island, have invented certain new and
5 useful Improvements in Car-Brakes, of which the following is a specification.

My invention relates to what are known as "band-brakes;" and the object of my invention is to simplify the construction of brakes
10 of this class, and also to increase the effectiveness of their operation and the facility of manipulation.

My invention consists in certain novel features of construction, and in certain combinations of the same, as hereinafter described.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a street-car body and its running-gear with my improvements attached. Fig. 2 is an under side plan
20 view of the same. Fig. 3 is a vertical longitudinal section of a steam-car body and its running-gear with a modified arrangement of my improved brake applied. Fig. 4 is a side elevation of the brake-shoe and its operative
25 connections as applied to a steam-car. Fig. 5 is a front elevation of a truck-wheel provided with a modified form of friction-disk.

My invention contemplates the application of my improved braking apparatus to both
30 horse and steam cars, and I have illustrated both applications thereof.

In Figs. 1 and 2 of the drawings, A designates part of a street-car body, and B B the wheels, *b b* being the axles. Each axle *b* is
35 provided midway of its length with a disk, C, having a continuous circumferential groove, *c*, the said disk being either formed upon or secured to the axle.

Beneath the body A, and suitably secured
40 thereto between the axles *b*, is a double hanger, D, between the pendent arms *d* of which is pivotally secured a three-armed rock-lever or double bell-crank, D'. To the upper end of the vertical arm *d'* of this lever is connected a brake-rod, E, which may or may not be
45 continuous, as shown, passing through an eye in the upper end of the arm *d'*, and which extends from end to end of the car. At each end the rod E has a chain-connection, *e*, ex-

tending to a foot-lever, F, one of which is 50 placed at each end of the car upon the front of the driver's platform. This foot-lever is mounted eccentrically upon a pair of trunnions, *f*, which are journaled in suitable bearings upon the front of the platform. The
55 outer end of the chain *e* is suitably secured to the outer side of the circular portion of the corresponding foot-lever, which is provided with a groove to retain the chain in proper position. The foot-levers F are each inclosed
60 in a housing, A', the inner side of which is formed with a slot, *a*, having one or more notches, *a'*, with which the free end of the foot-lever is caused to engage when partially or fully depressed by a twisting movement of
65 the driver's foot.

To the end of the horizontal arm *d* of the lever D' is pivotally connected one end of a link, G, which is made in two parallel sections inclosing an open space between them. 70 To the opposite end of the link G is attached one end of the brake-band H, which passes beneath and up over the contiguous disk C, within its groove *c*, and thence over through the link G and beneath the companion disk C
75 of the other axle, and finally to a connection with the end of the opposite arm, *d*², of the lever D'.

I have thus described the arrangement of my improved brake as applied to street or
80 horse cars, and I will state that it will be readily seen that when one of the foot-levers F is in use the other corresponding lever must be thrown to the upper limit of its movement, in order that any depression of the foot-lever in
85 use may not be resisted by that not in use, in which event the free movement of the lever D' will be unimpeded.

I deem the further operation of the devices self-evident, and that consequently no particular description of their actions is necessary.

In Figs. 3, 4, and 5 I have illustrated my improved brake as adapted to the requirements of steam-railway cars. In this instance, probably, two friction-disks, C, each having a
95 groove, *c*, would be required for each axle, because the speed being greater the braking-pressure would necessarily have to be corre-

spondingly greater. For this reason I place the friction-disks of each axle close to or form them integrally with each corresponding wheel, B, as shown in Fig. 5. This duplicate form of disks may be dispensed with, and the single form, previously described, may be employed. In railway-cars the lever D' is dispensed with and the levers D² are employed. Each of these levers is pivoted at a point above its lower extremity in a hanger, I, mounted upon the cross-beam B' of the truck, there being two such levers and hangers, respectively, for each axle and hanger, in case two disks are used for each axle. The brake-rods for the front axle on one truck extend, as indicated in dotted lines in Fig. 3, from the corresponding brake-beams of the forward trucks to the forward brake-beams of the rear trucks, there being the usual unison of rods between the direct and return brake-lines with a brake-wheel staff at each end of the car, so that the winding up of a brake-rod at either end of the car shall apply all of the brakes on that car. When the car is running in any given direction, the brake-staff upon end of the car must be thrown off, in order not to impede the action of the brake-staff upon the opposite end.

In Fig. 4 I have shown my improved spring attachment for throwing the brake-shoes off when the brakes are released. In this figure J designates the shoe, which is of metal and formed in segmental sections concentric with the periphery of the disk C. The sections of the shoe J are suitably secured to the band upon its inner side, and the said shoe is thrown off from the disk when the brakes are released by the heads K. These heads are made flaring, and pass through the band or shoe, and are mounted upon the ends of movable shanks k, which latter are provided with collars k', between each of which and a semicircular rim,

L, is placed an expansively-acting spring, k², the tendency of which is to throw the brake-shoes off from the disk C. The end of the upper shank k is movably secured within a socket, M, secured beneath the car-frame, while the intermediate and lower shanks k are held merely by the rim L.

I do not deem any particular description of the operation of this part of my apparatus necessary, as it, like the former part, is evident in its operation from the drawings and description given. The spring attachments just described may be also applied to the street-car brake herein described.

I do not wish to be construed as confining myself exclusively to the precise arrangements herein shown and described, as I appreciate the fact that many modifications may be warranted under the spirit of my invention.

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

1. An improved car-brake consisting of a band passing continuously from one axle to another, and provided with the foot-levers a, arranged and operating as described.

2. The combination, with the axles carrying the grooved friction-disks, and the brake-band, arranged as described, of the lever D', the link G, the brake-rod, and the eccentric foot-levers, mounted upon the platform and operating as described.

3. The combination, with the brake-band, arranged as described, and the operative connections therefor, of the sectional shoe, the spring-releasing connections, and the axles provided with the grooved disks.

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Witnesses:

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