

No. 644,146.

Patented Feb. 27, 1900.

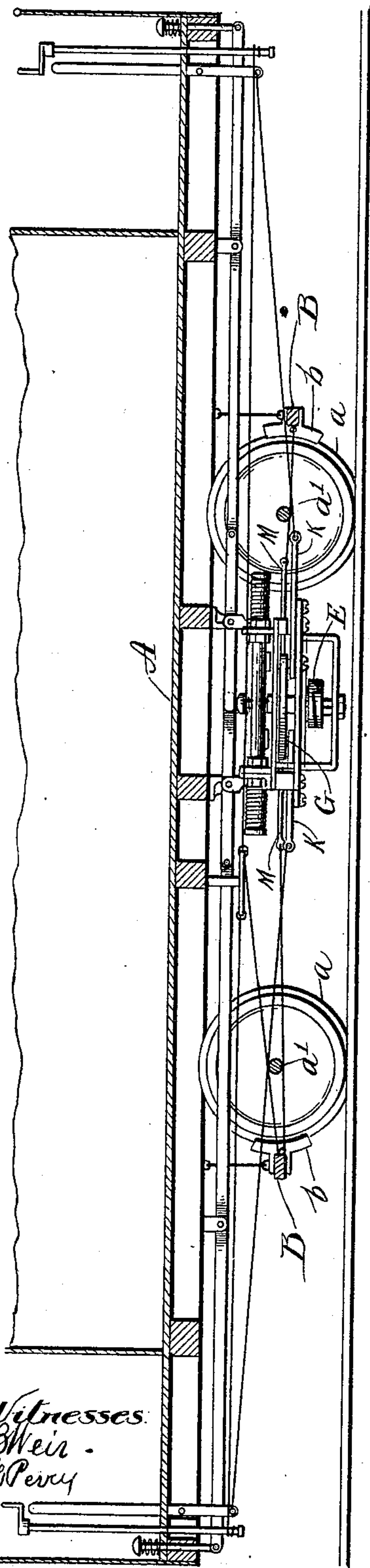
A. C. PETERSON.
CAR BRAKE.

(Application filed Sept. 5, 1899.)

(No Model.)

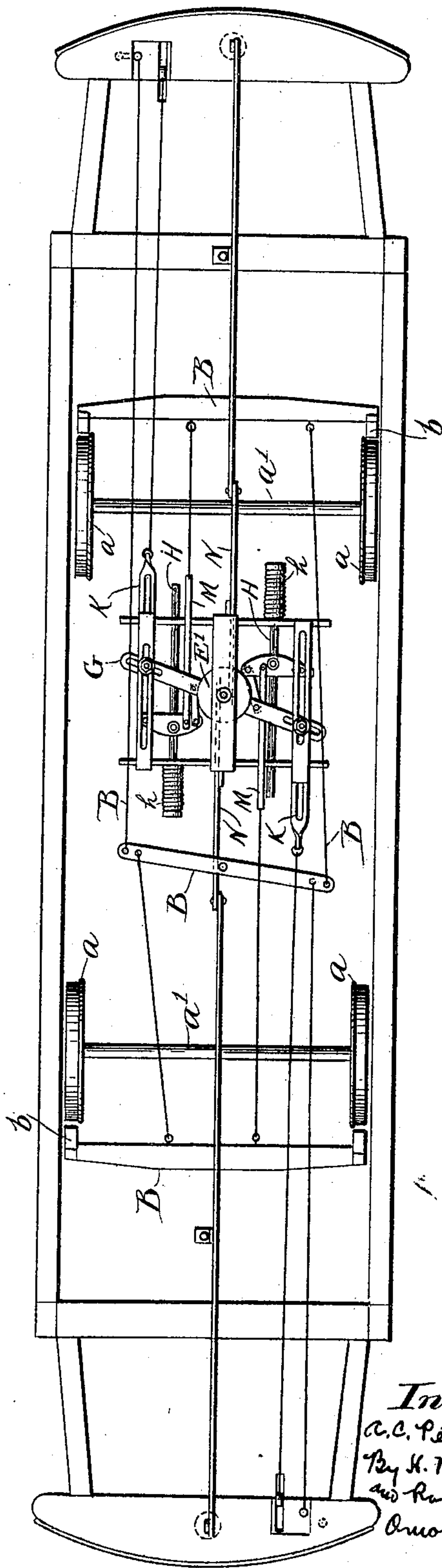
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FIG. 1



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FIG. 2



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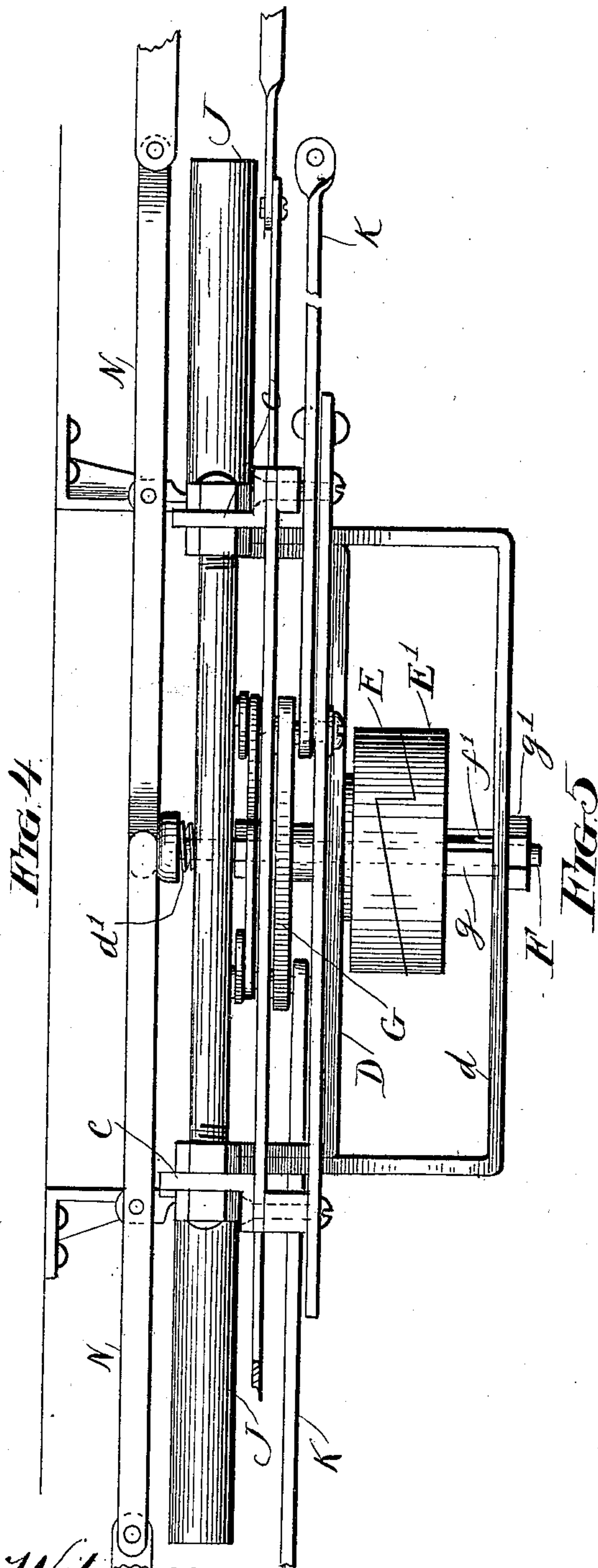
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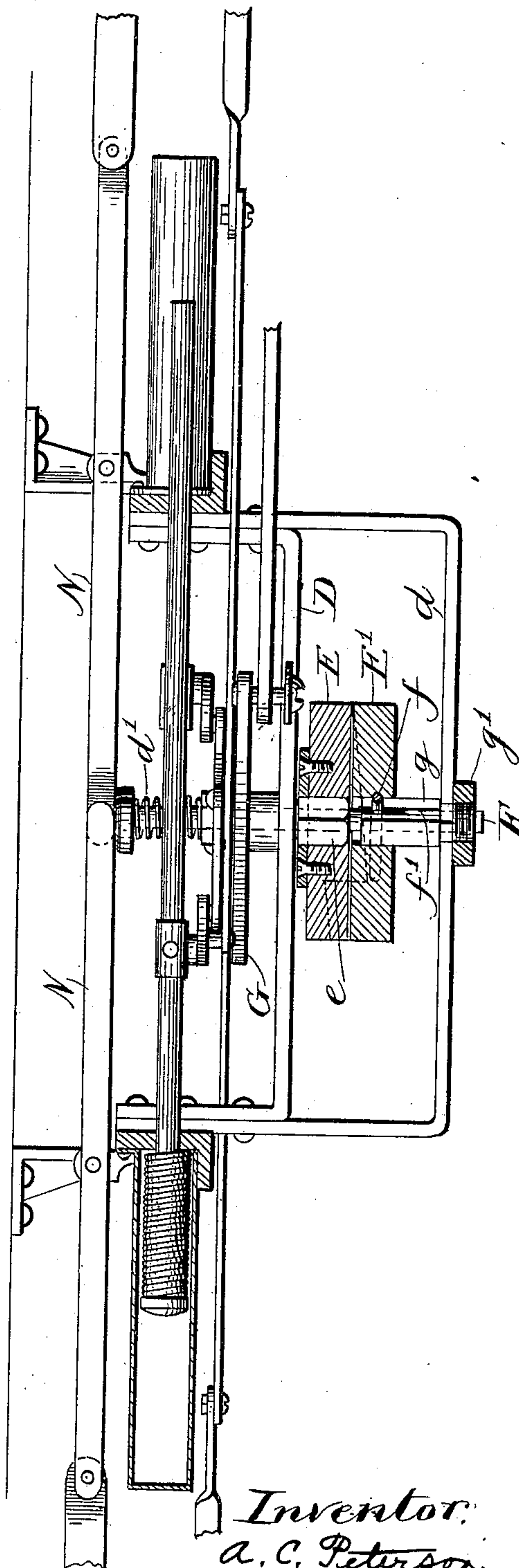
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(No Model.)

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4 Sheets—Sheet 4.

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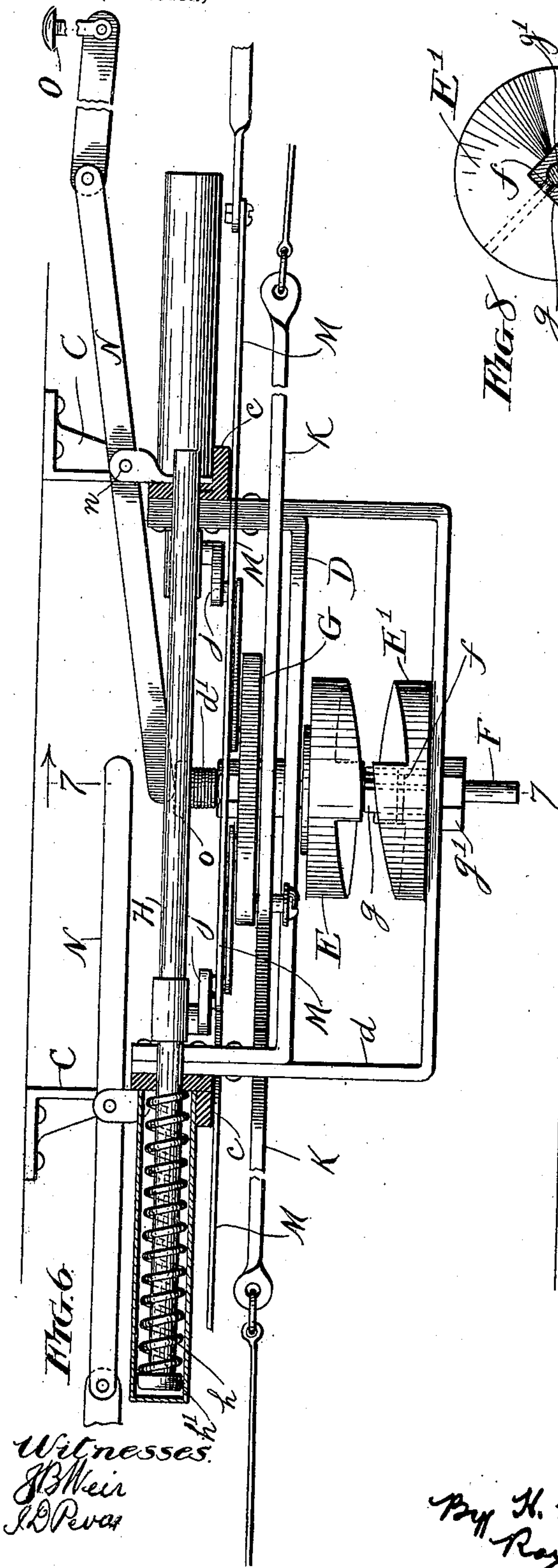


Fig. 6.

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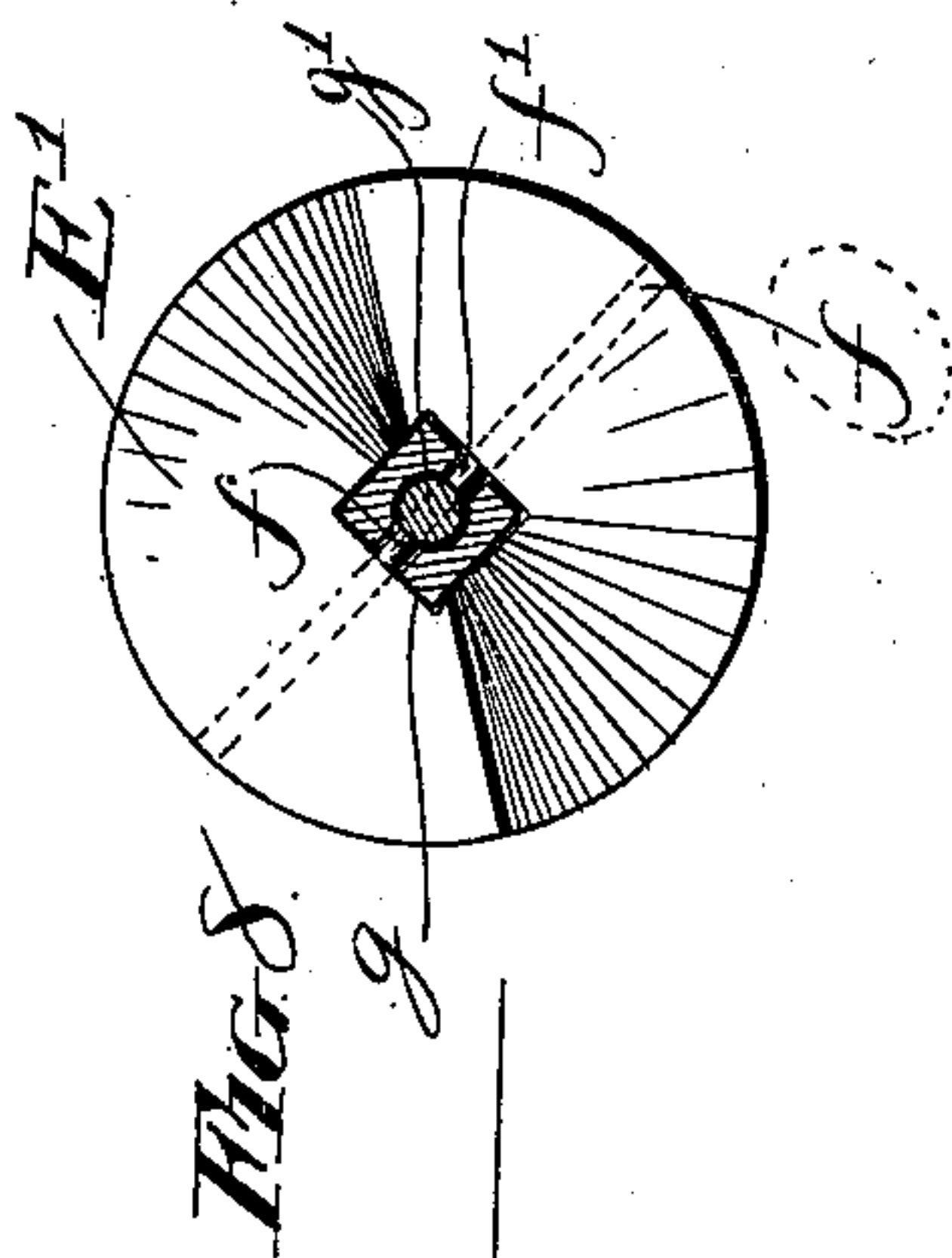


Fig. 8.

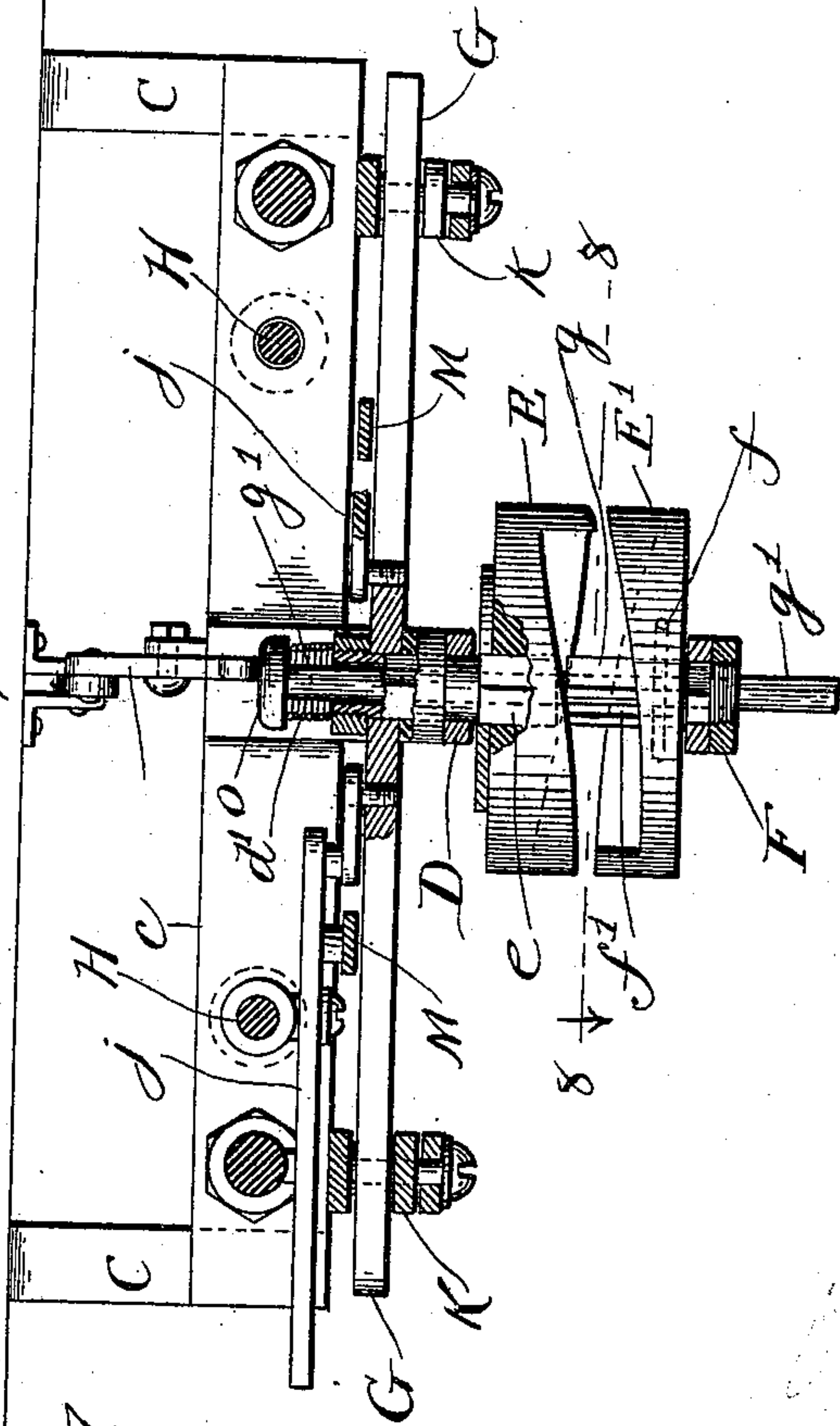


Fig. 7.

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UNITED STATES PATENT OFFICE.

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 644,146, dated February 27, 1900.

Application filed September 5, 1899. Serial No. 729,528. (No model.)

To all whom it may concern:

Be it known that I, AUGUST C. PETERSON, a citizen of the United States, residing at Victoria, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

My invention relates to certain new and useful improvements in car-brakes, and it is more particularly intended for use as an emergency-brake for street-cars.

In the operation of street-cars it is frequently desirable that the car should be stopped suddenly and within a short distance to avoid accidents, and it is well known that with the ordinary brakes now in use, operated in some instances by a lever and in others by a crank, it requires considerable time comparatively for the operator to set the brake.

The primary object of my invention, therefore, is to provide an apparatus which can be connected with any ordinary brake-rigging and which is adapted to be operated at any time to set the brakes, the power exerted by this apparatus being supplemented simultaneously by the operation of the ordinary brake mechanism.

A further object of the invention is to provide a brake mechanism to be used preferably in emergency cases only and which can be combined with an ordinary brake-rigging of a car, the two apparatuses being capable of independent or conjoint operation.

Another object of the invention is to provide a supplemental brake apparatus for street-cars which can be set in position for operation upon the brake-shoes and remain in such position regardless of the operation of the ordinary brake-rigging of the car until said apparatus is tripped, and a further object of the invention is to provide a supplemental brake apparatus for street-cars which can be used in connection with the ordinary brake-rigging and provided with strong springs, whereby in emergency cases the apparatus may be tripped to apply the power of the springs directly upon the brake-shoes and the car-wheels immediately and while the operator is applying power to the brakes in the ordinary way.

My invention also has other objects in view,

which will be pointed out fully hereinafter in the detailed description and in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a car having my improved brake apparatus applied thereto and shown in side elevation. Fig. 2 is a bottom plan view of a street-car, showing the brake apparatus. Fig. 3 is an enlarged bottom plan view showing an embodiment of my invention, the apparatus being in set position. Fig. 4 is a side elevation of the apparatus as shown in Fig. 3. Fig. 5 is a sectional view on the line 5 5 of Fig. 3. Fig. 6 is an enlarged side elevation, partly in section, of the apparatus, showing the parts in the position they occupy when the power of the apparatus is applied to the brakes. Fig. 7 is a sectional view on the line 7 7 of Fig. 6. Fig. 8 is a detailed sectional view on the line 8 8 of Fig. 7.

Referring to the drawings, in which like letters of reference denote corresponding parts in all of the figures, A designates the body of any ordinary street-car, which is suitably supported on the carrying-wheels *a* on the axles *a'* and provided with any preferred brake-rigging, designated generally by B, and comprising brake-shoes *b* of any suitable construction.

My improved emergency-brake apparatus is attached to the bottom of the car, preferably at or about the middle thereof, and it comprises a frame consisting of the sides C and ends *c*, suitably fastened together and attached to the car. An upper arch D is secured to the ends *c*, and between this arch and a lower arch *d*, also secured to the ends *c*, the clutch mechanism by means of which the brake apparatus is set is arranged. This clutch mechanism comprises two members E and E', whose operative faces are provided with engaging lugs whereby the said members may be locked together at the proper time and released by separating the members vertically. The upper member E is rigidly secured on a collar *e*, which is mounted on the vertically-sliding pin F and rigidly connected with a two-armed clutch-lever G, which lever is arranged loosely upon the sliding pin and located, in the embodiment of my invention illustrated in the drawings, above the upper arch D. The lower clutch member E'

is loosely secured on a collar *g*, fastened immovably to the lower arch *d* by means of a nut *g'* and provided with a central opening, through which the sliding pin *F* operates.

5 The sliding pin *F* is provided with a spline *f*, which extends through a groove *f'* in the collar *g* and carries the lower clutch member *E'*, so that said lower clutch member will be moved by and simultaneously with the pin,
10 as hereinafter described.

The sliding pin *F* extends through the lower arch *d*, the collar *g* and lower clutch member *E'*, the collar *e* and upper clutch member *E*, the upper arch, the clutch-lever *G*, and is
15 provided on its upper end with a spring *d'*, the tendency of which is to hold the lower clutch member up in engagement with the upper clutch member and the apparatus in set position.

20 The clutch-lever *G* has two arms extending to opposite sides of the frame of the apparatus, each arm being connected with mechanism of the same general character, only one of which need be described specifically. A
25 bolt *H* is arranged to slide in the ends *c* of the frame, and it is provided at one end with a spring *h*, which is inclosed between the headed end *h'* of said bolt and one end *c* of the frame, and preferably inclosed within a casing *J* to
30 protect the spring from injury and dirt. A plate *j* is pivotally secured on a collar *I*, rigidly fastened to the bolt *H* between the ends of the frame, one end of said plate being connected by a link *j'* with the clutch-lever *G* and the
35 other end of said plate being provided with a groove and operating on the guiding-pin *i*.

The clutch-lever is operated by means of the pull-bar *K*, said pull-bar being provided with a slot *k*, and the end of the clutch-lever
40 also having a slot *k'*, through which slots a bolt *L* passes. The pull-bar is held in place by means of a guiding-plate *l*, also provided with a slot *l'*, this plate being secured in place at the sides of the frame and below the pull-
45 bar, so that in the operation of setting the apparatus when the pull-bar is drawn out it will slide along above the guide-plate *l* and carry with it the clutch-lever *G*, by reason of the connection formed by the pin *L*, which
50 passes through the slots in the plate *l*, the pull-bar *K*, and the clutch-lever *G*. After the apparatus is set in position for operation—that is to say, when the upper clutch member *E* has been turned to such position that the spring
55 *d'* will carry up the pin and the clutch member *E'* into engagement with the upper clutch member *E*—the pull-bar *K* can be released and return to its normal position, the slot *k* therein providing for its return without disturbing
60 the position of the clutch-bar, which bar and its connected parts are locked in position by the clutch members.

A bar *M* is connected to the plate *j* and to the brake-rigging in such a way that whenever
65 the clutch mechanism is released and the bolt *H* is thrown backward by the spring *h* the power of said spring will be communicated

through the bolt, plate, and connecting-bar to the brake-rigging and the brake-shoes to set
70 the shoes into contact with the wheels. The mechanism for releasing the clutch and throwing the apparatus into action consists of a lever *N*, pivoted at *n* and having one end provided with a push-bar *O* and its other end
75 bearing upon the head *o* of the sliding pin *F*.

The operation of my improved apparatus is very simple and will be readily understood from the foregoing description, taken in connection with the drawings. To set the apparatus, it is only necessary to draw the pull-bar
80 *K* forward, and this can be done in any way by means of a lever or crank device or in any manner preferred. In drawing the pull-bar forward the end thereof engages the pin *L* and carries it forward, thereby swinging the lever
85 *G* and carrying the upper clutch member *E* around from the position shown in Fig. 6 to such position as will permit the faces of the clutch members to interlock, as shown in Fig. 4, the spring *d'* carrying the pin and the lower
90 clutch member rigid thereon upward until said members are locked together. When the parts have been locked together in this position, the pull-bar may be released and returned to its normal position.
95

To apply the power of the apparatus to the brakes, it is only necessary to disengage the clutch members, which is accomplished by pressing on the push-bar *O* and depressing the other end of the lever *N* to force the sliding
100 pin downward, overcoming the tension of the spring *d'* and disengaging the lower member from the upper member of the clutch. When this is done, the clutch-lever swings back to its normal position under the influence of the
105 springs *h*, and these springs also carry back the bolts *H* and the plates *j*, and through the medium of the connecting-bars *M* their power is applied directly to the brake-rigging and the brake-shoes.
110

It will be observed that this apparatus can be operated from either end of the car, as it is provided with pull-bars on opposite sides, attached to the same mechanism and adapted to be operated at any time independently of
115 each other. When the clutch is unlocked, both of the springs *h* exert their power upon the brake-shoes.

Having thus fully described my invention, what I claim, and desire to secure by Letters
120 Patent, is—

1. The combination with a brake-rigging, of a spring and means for compressing the same, connections between said spring and the brake-rigging and means for locking the
125 spring in its compressed condition, comprising a clutch device consisting of interlocking members, and a spring-controlled pin extending through the clutch members, substantially as and for the purpose described.
130

2. The combination with a brake-rigging, of a spring and means for compressing the same, connections between said spring and the brake-rigging, means for locking the

spring in its compressed condition, comprising a clutch device consisting of interlocking members, and a spring-controlled pin extending through the clutch members, and means
5 for depressing said pin to disengage the clutch members, substantially as and for the purpose described.

3. The combination with a brake-rigging, of a spring and means for compressing the
10 same, connections between the spring and the brake-rigging, and a clutch mechanism adapted to lock the spring in its compressed condition, and comprising a fixed member and a
15 vertically-movable member, and a spring-controlled pin extending through said clutch members and having the movable clutch member secured thereto, substantially as and for the purpose described.

4. The combination with a brake-rigging,
20 of a spring and means for compressing the same, connections between said spring and the brake-rigging, a clutch mechanism for locking said spring in its compressed condition and comprising a fixed member and a
25 vertically-movable member adapted to interlock with the fixed member and devices for operating said movable member to disengage the same from the fixed member to release the spring, substantially as and for the purpose
30 described.

5. The combination with a brake-rigging, of a spring and means for compressing the same, connections between said spring and the brake-rigging, a clutch mechanism for
35 locking the spring in its compressed condition and comprising a fixed member and a vertically-movable member, a spring-controlled sliding pin rigidly connected with the movable member of the clutch and devices
40 for engaging said pin and operating the same to release the movable member from the fixed member of the clutch, substantially as and for the purpose described.

6. The combination with a brake-rigging,
45 of a spring, connections between the spring and the brake-rigging, a lever connected with the spring; a pull-bar adapted to be operated to move the lever and compress the spring, and a clutch device comprising outer locking
50 members, one of which is connected to said lever, substantially as and for the purpose described.

7. The combination with a brake-rigging, of a spring, connections between the spring and said brake-rigging, a lever connected with
55 the spring, a pull-bar adapted to be operated to move the lever and compress the spring, and a clutch device connected with said lever to lock the spring in its compressed condition, said clutch device comprising two inter-
60 locking members and a spring-controlled pin extending therethrough, substantially as and for the purpose described.

8. The combination with a brake-rigging, of a spring, connections between said spring
65 and the brake-rigging, a lever connected with the spring, a pull-bar adapted to be operated to move the lever and compress the spring and means for locking the lever and spring in its compressed condition, comprising a
70 fixed clutch member rigid with the lever, a movable clutch member, a spring-controlled pin extending through the clutch members and means for operating said pin to move the movable clutch member to disengage the
75 same from the fixed clutch member, substantially as and for the purpose described.

9. The combination with a brake-rigging, of a spring, a bolt carrying said spring, a plate carried by said bolt and connected with
80 the brake-rigging, a lever connected with said plate, a pull-bar adapted to be operated to move the lever and compress the spring, and a clutch device comprising two interlocking members one of which is connected to said
85 lever, substantially as and for the purpose described.

10. The combination with a brake-rigging, of a spring, a bolt carrying said spring, a plate carried by said bolt and connected with
90 the brake-rigging, a lever connected with the plate, a pull-bar adapted to be operated to move the lever and compress the spring, and a clutch mechanism for locking the lever and the spring in its compressed condition,
95 comprising two interlocking members, and a spring-controlled pin extending through the clutch members, substantially as and for the purpose described.

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