

No. 694,393.

Patented Mar. 4, 1902.

A. L. LARSON.
BRAKE MECHANISM FOR VEHICLES.

(Application filed May 3, 1899.)

(No Model.)

Fig. 1

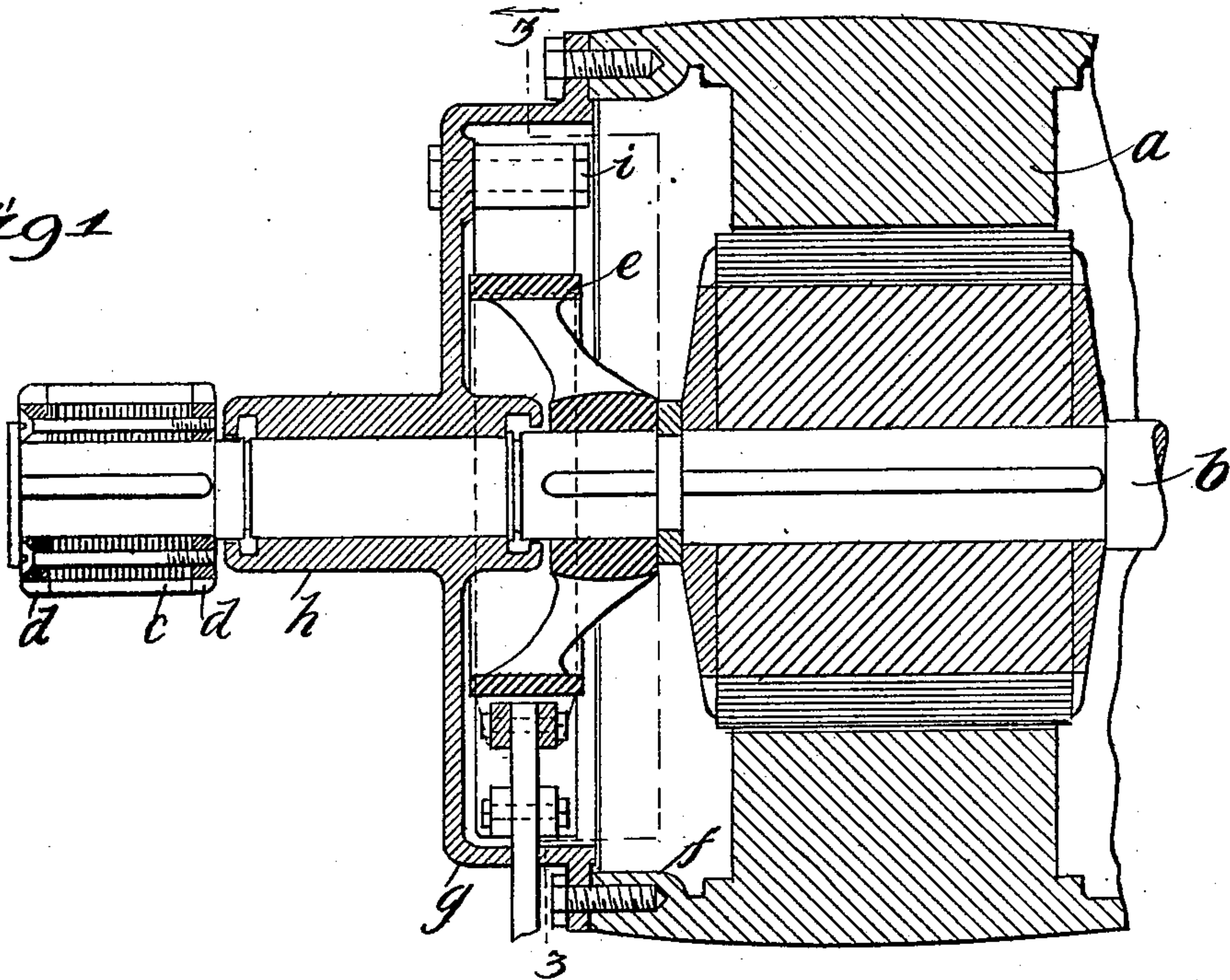


Fig. 2

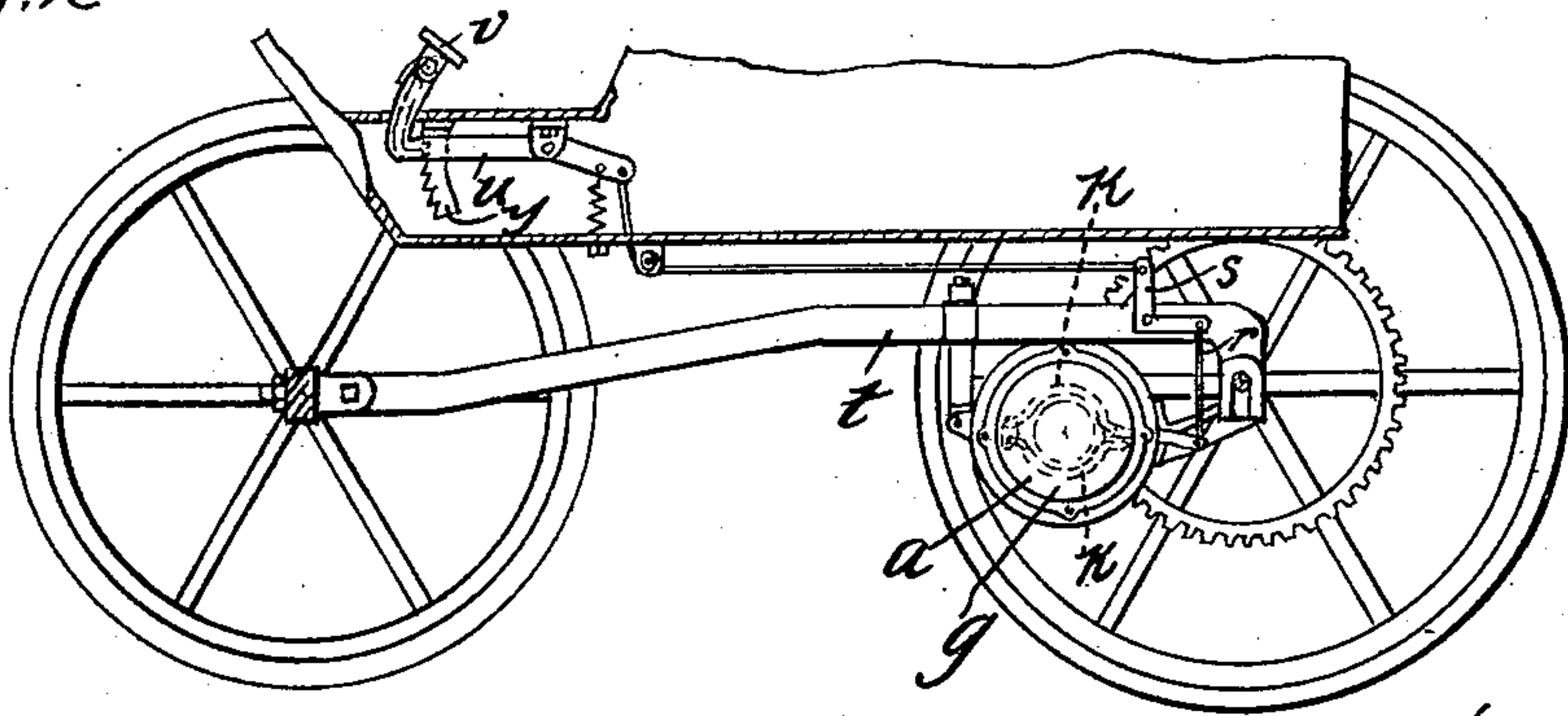


Fig. 3.

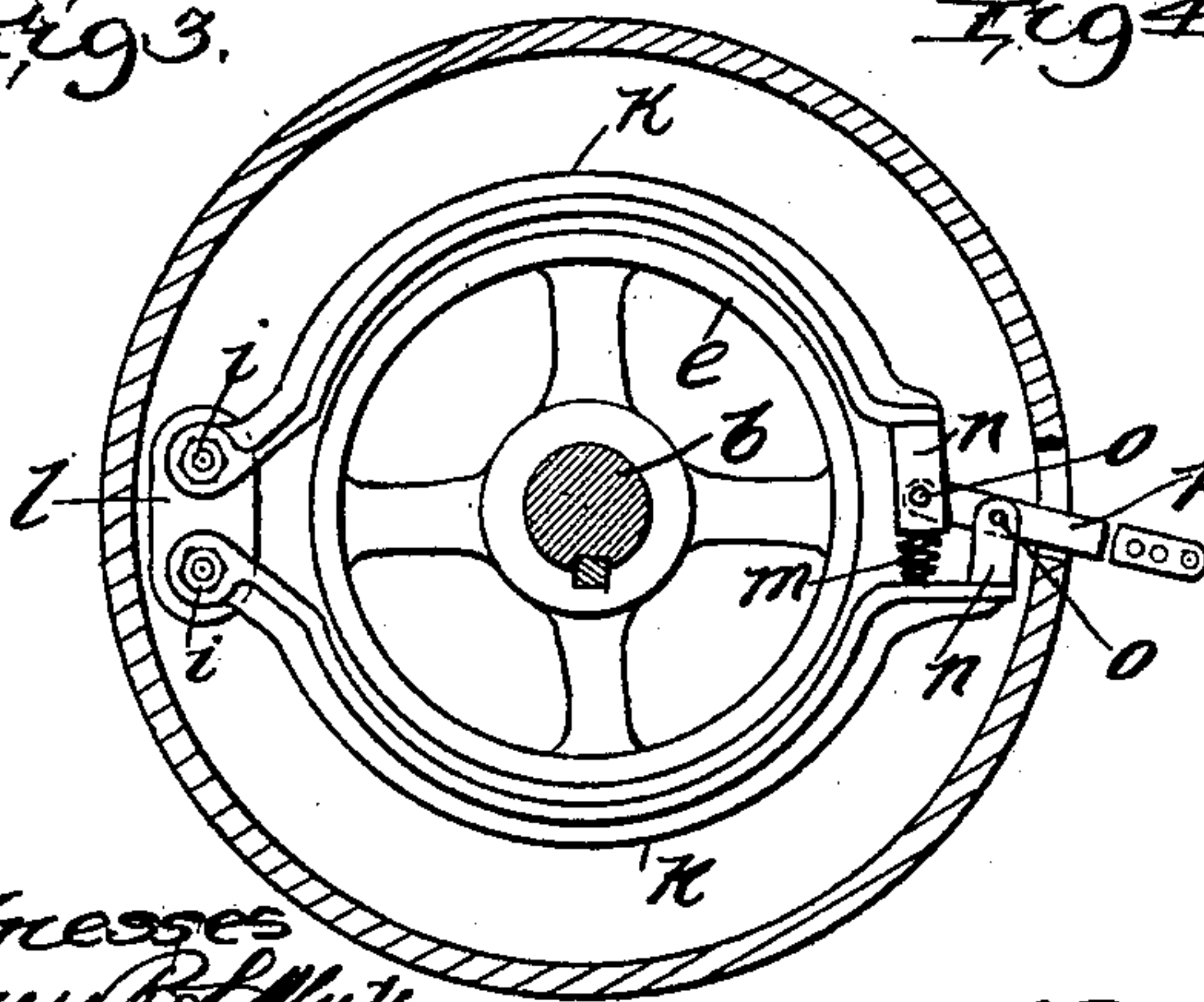


Fig. 4.

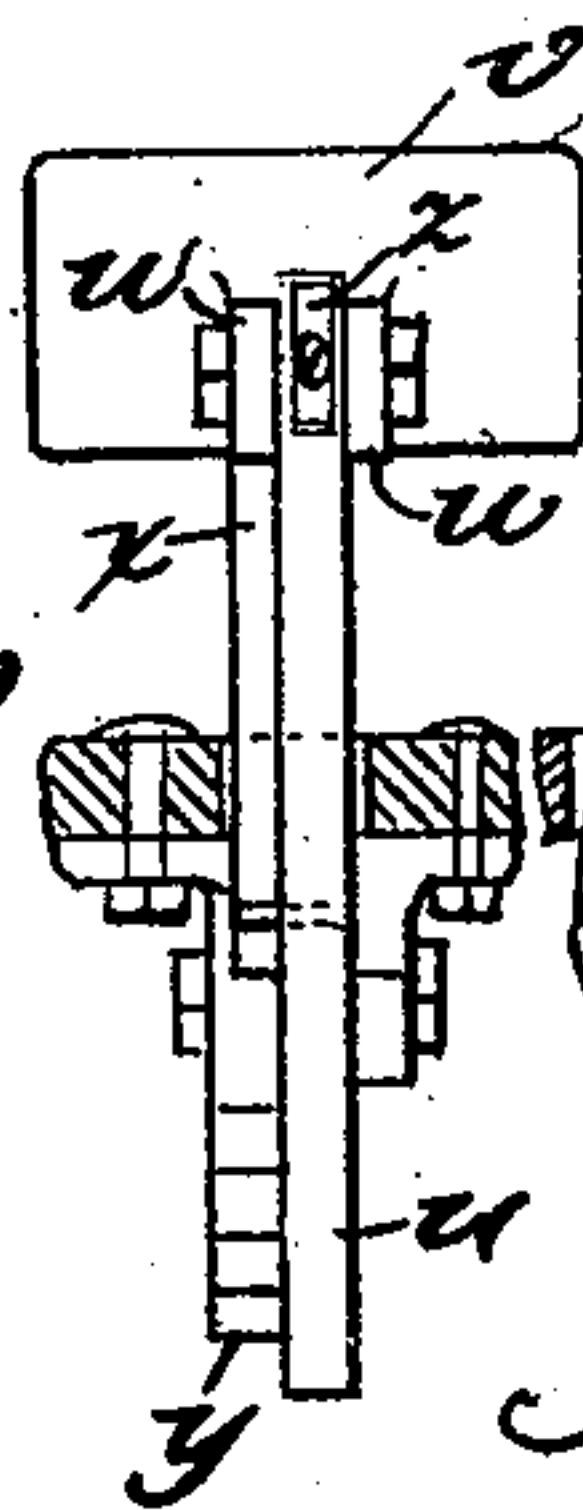
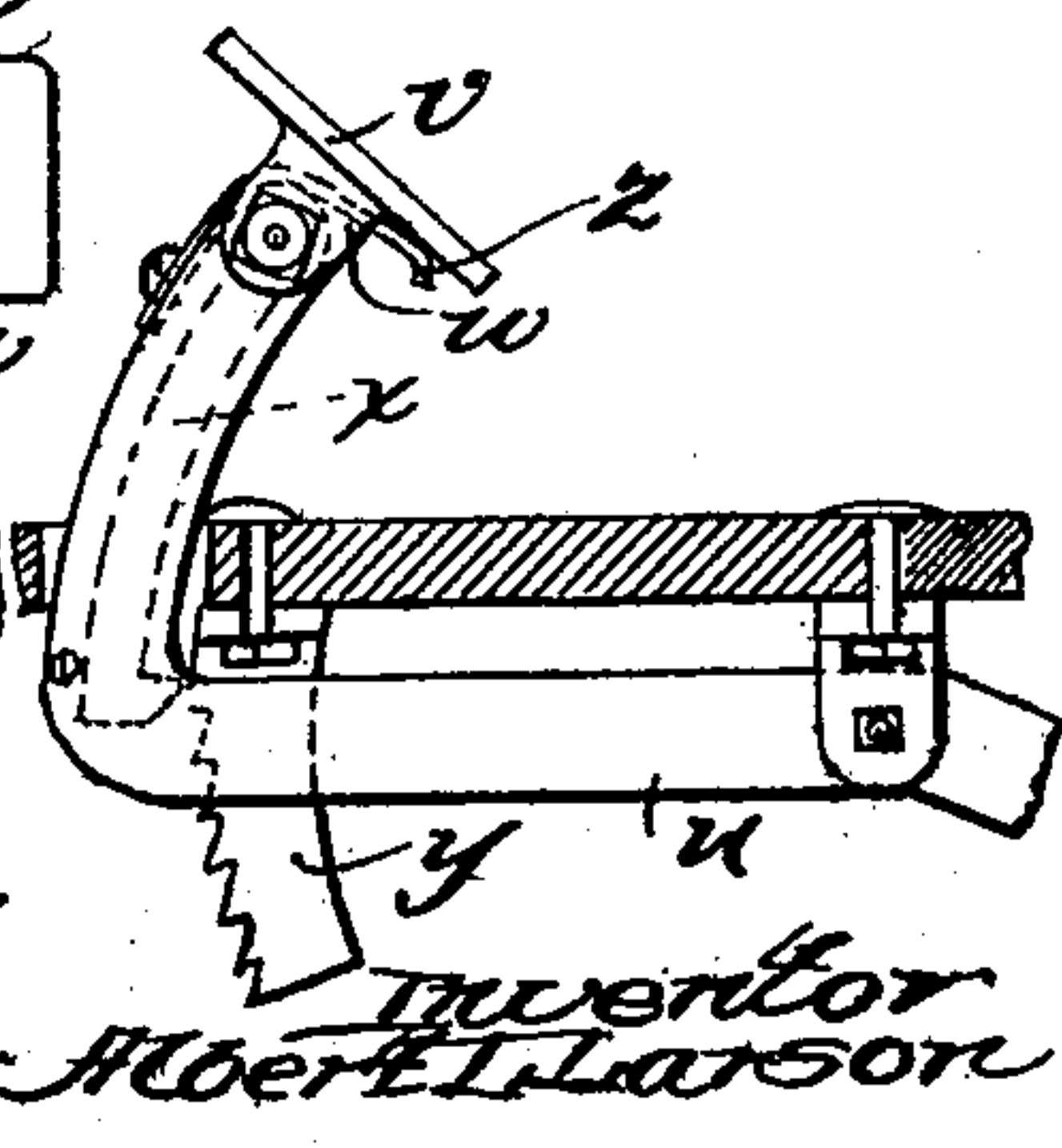


Fig. 5.



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ALBERT L. LARSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO OSCAR J. FRIEDMAN.

BRAKE MECHANISM FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 694,393, dated March 4, 1902.

Application filed May 3, 1899. Serial No. 715,458. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. LARSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Braking Mechanism, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to braking mechanism, and has for its particular object the improvement in the construction of braking appliances employed upon motor-vehicles, although I do not wish to be limited to the precise use to which the devices of my invention are put.

My invention has for its object the provision of an improved foot-lever for operating the brake-cable, and thereby the brake-shoes, improved mechanism being associated with the foot-lever for locking the foot-lever in position to maintain the brake-shoes in engagement with the brake wheel or pulley, the foot-plate being so associated with the locking device that by properly directing the force applied to the foot-plate the parts of the locking device may readily be released or engaged.

I will explain my invention more particularly by reference to the accompanying drawing, in which—

Figure 1 is a horizontal sectional view of my improved braking appliance operatively associated with an electric motor. Fig. 2 is a side elevation showing my improved braking appliance and the parts immediately associated therewith. Fig. 3 is a sectional view on line 3 3 of Fig. 1. Fig. 4 is an end elevation of the foot-lever mechanism shown in Fig. 2. Fig. 5 is an enlarged elevation of the mechanism shown in Fig. 4.

Like letters indicate like parts in the different figures.

The motor *a* (in this instance an electric motor) may be of any suitable construction. In this instance the shaft *b* of the motor is provided with a pinion *c*, whose teeth are formed, preferably, of rawhide inclosed by end plates *d d*, preferably of brass. The shaft *b* has a rotating element or brake-pulley *e*, made, preferably, of low-grade steel, secured

thereto and rotatable therewith. This brake-pulley is preferably inclosed in the same casing with the motor, the longitudinal portion *f* and the end portion *g* of the said casing only being shown, the end portion *g* being in the form of a cap secured to the longitudinal portion *f*. An extension *h* of the cap *g* also forms a bearing for the shaft. The journal-bolts *i i* pass through the cap *g* and constitute shafts for the segmental brake-shoes *k k*, made, preferably, of gun-metal, a raised portion *l* being provided to remove the opposing surfaces of the brake-shoes from the inner radial wall of the cap.

I prefer to provide individual separated axes of rotation for the brake-shoes, as by this means I am enabled to simplify the construction of the pivoted ends of the brake-shoes; but I do not desire to be limited to this precise arrangement. Spring mechanism *m* is employed for normally maintaining the brake-shoes *k* out of engagement with the friction-pulley *e*. Opposed extensions *n n* are provided upon the contiguous free ends of the brake-shoes, these extensions being provided with displaced pivotal connections *o o* with a link *p*. The spring *m* is heavy and is interposed between the free ends of the brake-shoes, the said spring preferably engaging at one end an inner extension *n* and at the other end directly with the free end of the opposed brake-shoe. The link *p* is elongated and extends through a slot in the peripheral wall of the cap *g*, the other free end of the extension of the said link being connected with a suitable actuating means.

I will now describe my improved means for actuating the brake-shoes. A cord or connection *r* is attached at one end to the extension of the link *p* and at the other end to a bell-crank lever *s*, pivoted at its elbow to the perch member *t* of a motor-vehicle. The upper end of the bell-crank lever is connected by means of a cord or cable passing over an idler secured to the bottom of the vehicle-body, this cord being connected at the other end to a foot-lever *u*, which may be bent, a portion of this foot-lever extending through an opening in the floor of the vehicle, a foot-plate *v* being pivotally secured to the upper end of the said extension of the foot-lever.

A coiled spring is employed to thrust the foot-plate and the contiguous end of the foot-lever upwardly. For the purpose of securing the foot-lever in position and also to enable it readily to control the locking mechanism, to be hereinafter described, I provide two ears *ww*, between which the extension of the foot-lever is placed, suitable means being provided for pivotally connecting the foot-lever with the said ears extending from the foot-plate. One of the ears *w* is extended to form a locking-dog *x*. A segmental rack *y* is secured beneath the floor of the vehicle, the teeth of which are opposed to the engaging nose of the dog or pawl *x*. A leaf-spring *z* may be employed positively to exert a turning effort upon the foot-plate in a direction which tends to cause the engagement between the locking-dog and rack, so that when the brake is applied to the brake-pulley or other rotating portion the said spring positively maintains the engagement between the locking-dog and rack, whereby the brake is maintained in its applied position. In order to release the brake, the foot-plate is rotated in a direction to counteract the action of the leaf-spring, in which movement the disengagement between the dog and rack is effected, permitting the elevation of the foot-plate, and thereby the release of the brake-shoes.

By employing a bell-crank *s* upon the perch of the vehicle and connecting the said bell-crank with the foot-lever by means of a cord which passes over a pulley mounted underneath the floor of the vehicle no allowance need be made for relative movement between the vehicle and the perch, whereby the cable uniting the said bell-crank and foot-lever may be made taut. The foot-lever mechanism may be employed in connection with other styles of braking mechanism than that shown, and the precise construction of the foot-lever mechanism, and particularly the construction of the lever *u*, may be modified, and I do not, therefore, wish to be limited to the precise construction shown.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a brake-actuating mechanism, the

combination with a brake-actuating lever, of a foot-receiving portion *v* having pivotal connection therewith, a locking member *x* secured to the portion *v* and rotatable therewith about the axis of rotation thereof and thereby with relation to the brake-actuating lever, and a second locking member *y* opposed to the locking member *x*, said portion *v* serving when rotated to rotate the locking member *x* with relation to the said lever away from or toward the locking member *y*, substantially as described.

2. In a brake-actuating foot-lever, the combination with a lever *u*, of a plate *v* having pivotal connection with the said lever, a locking-dog *x* carried by the foot-plate, and a locking-rack *y* opposed to the said dog, the said dog being adapted by the rotation of the foot-plate upon the said lever to bring the said dog into and out of engagement with the said rack, substantially as described.

3. In a brake-actuating foot-lever, the combination with a lever *u*, of a plate *v* having pivotal connection with the said lever, a locking-dog *x* carried by the foot-plate, a locking-rack *y* opposed to the said dog, the said dog being adapted by the rotation of the foot-plate upon the said lever to bring the said dog into and out of engagement with the said rack, and a spring for thrusting the said dog into engagement with the said rack, substantially as described.

4. In a brake-actuating foot-lever, the combination with a lever *u*, of a plate *v* having pivotal connection with the said lever, a locking-dog *x* carried by the foot-plate, a locking-rack *y* opposed to the said dog, the said dog being adapted by the rotation of the foot-plate upon the said lever to bring the said dog into and out of engagement with the said rack, and a spring for thrusting the foot-plate and the contiguous end of the said lever upwardly, substantially as described.

In witness whereof I hereunto subscribe my name this 1st day of May, A. D. 1899.

ALBERT L. LARSON.

Witnesses:

GEORGE L. CRAGG,
CHARLES E. HUBERT.