

(No Model.)

2 Sheets—Sheet 1.

H. W. B. PRING.

STARTING OR STOPPING APPLIANCE FOR RAILWAY OR OTHER VEHICLES.

No. 550,896.

Patented Dec. 3, 1895.

FIG. 1.

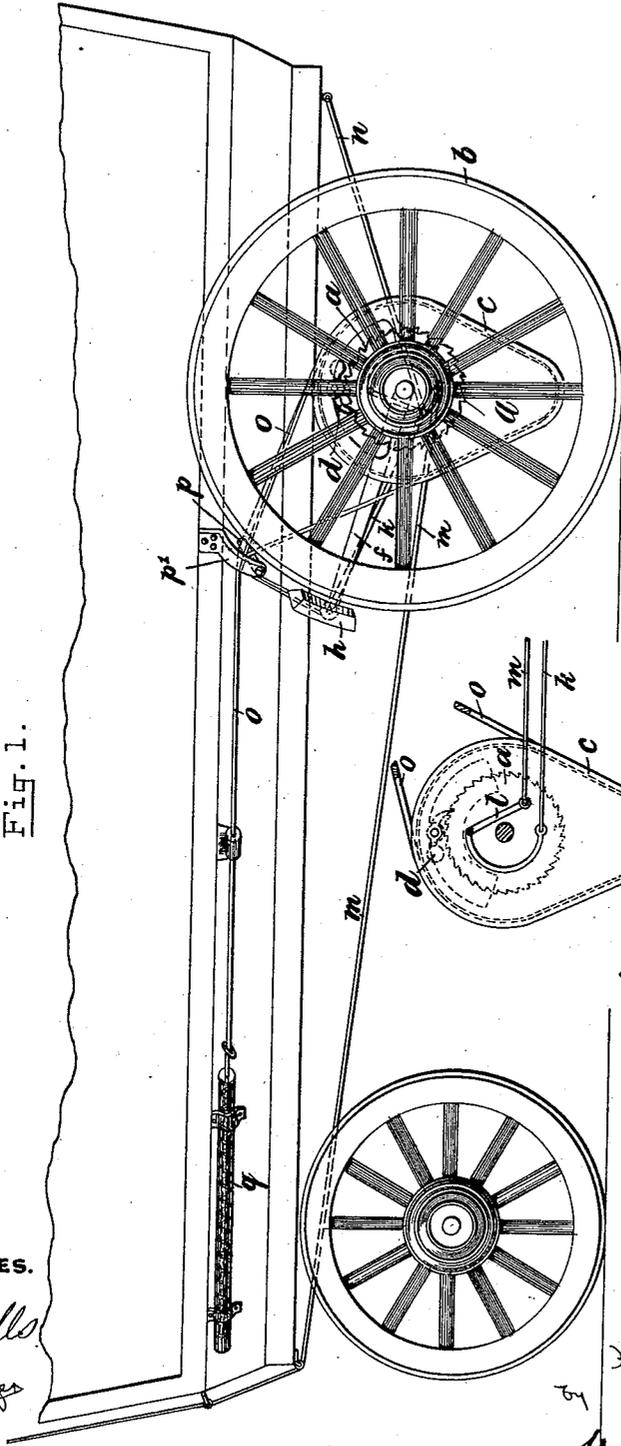
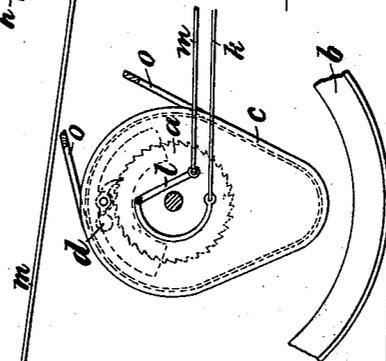


FIG. 2.



WITNESSES.

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INVENTOR.

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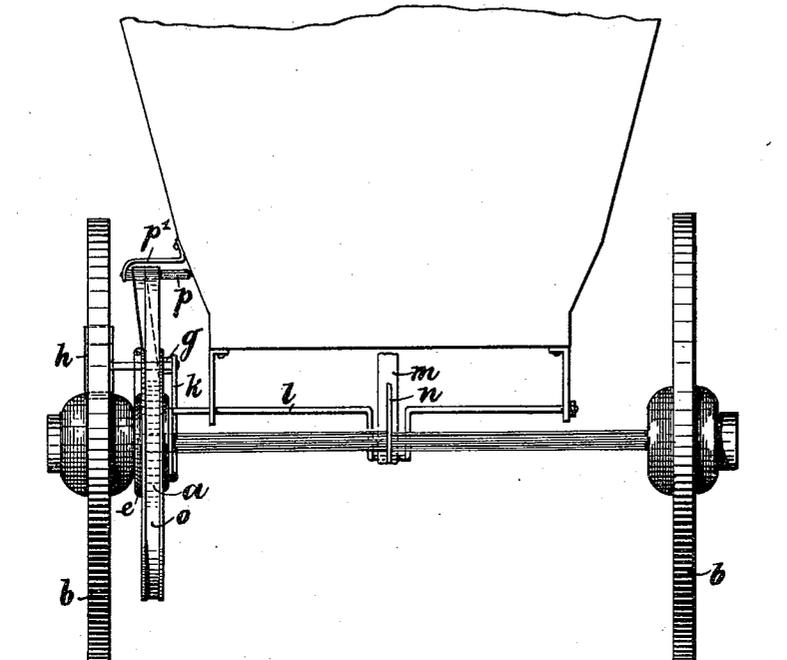
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Fig. 2.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

HENRY WILLIAM B. PRING, OF LONDON, ENGLAND.

STARTING OR STOPPING APPLIANCE FOR RAILWAY OR OTHER VEHICLES.

SPECIFICATION forming part of Letters Patent No. 550,896, dated December 3, 1895.

Application filed May 13, 1895. Serial No. 549,170. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY WILLIAM BURGOYNE PRING, clerk, a subject of the Queen of Great Britain, residing at 8 Alexandra Villas, Lonsdale Road, Barnes, London, in the county of Surrey, England, have invented new and useful Starting and Stopping Appliances for Railway, Tramway, or Road Vehicles, of which the following is a specification.

10 This invention relates to starting and stopping appliances for railway, tramway, and road vehicles, by means of which the momentum of the vehicle from the moment the brake is applied to that when the vehicle comes to a standstill is stored up and given out again, as soon as the brake is removed, for the purpose of starting the vehicle, so relieving the horses or other tractive power at the severest portion of the work.

20 In order that my invention may be more fully understood and carried into practice, I will now proceed to describe the same with reference to the accompanying drawings, of which—

25 Figure 1 is a side and Fig. 2 an end elevation of the lower portion of a road-vehicle provided with a stopping and starting appliance constructed according to my invention, and Fig. 3 an elevation of the opposite side to that shown in Fig. 1 of some parts of said appliance.

30 Referring to Figs. 1, 2, and 3, a ratchet-wheel *a* is keyed or otherwise fastened on the hub of the brake-wheel *b* concentrically, and on this hub is also mounted loosely a drum *c*, preferably of the eccentric form shown. This drum *c* has pivoted in it or to it a pawl *d*, so counterbalanced that it normally occupies a position, Fig. 3, in which it is out of gear with the ratchet-wheel *a*; but when the drum *c* is revolved it gradually assumes a position in which it gears with said ratchet-wheel. A loose collar *e* is also mounted on the hub of the wheel *b*, and from this projects an arm *f*, having pivoted to its outer free end a lever *g*, carrying on one end thereof the brake-block *h* and connected at its opposite end through a rod *k*, Fig. 2, to the cranked end of a rod *l*. This rod *l* is journaled in the frame of the vehicle, so that it may be revolved sufficiently to throw the brake-block into or out of contact with the tire of the wheel *b*, the move-

ment to throw the brake-block into gear being effected by the usual lever situated on the foot-board or other portion of the vehicle and connected by a chain or cord *m*, passing over suitable pulleys, to a middle cranked portion of said rod, while the return movement is effected by a spring *n*, connected at one end to this middle cranked portion of the rod *l* and at its opposite end to the body of the vehicle. The brake-block is connected to one end of and normally supported in the position shown by a strap, chain, or cord *o*, which is passed over a loose pulley *p*, mounted in the bracket *p'*, projecting from the side of the vehicle, and from thence travels around the drum *c*, over a second pulley in the bracket *p'*, and is connected at its opposite end to the end of a powerful spring arranged within a tube *q*, secured to the side of the vehicle. The result of such an arrangement is that when the brake-block is forced against the tire of the wheel, while the vehicle is still in motion, it is carried around a certain distance by said wheel and the momentum of the vehicle absorbed by the compression of the spring on the tube *q* through the medium of the strap, chain, or cord. At the same time the drum *c* is partly revolved and the pawl *d* brought into a position that it gears with the ratchet-wheel *a*, the result being that the parts remain stationary, as the force of the compressed spring tends to turn the brake-block in one direction and the wheel in the opposite, until the brake-block is moved out of contact with the wheel-tire, when the energy stored up in the spring tends to restore the parts to their original position, and in doing so revolves the drum *c*, and with it the wheel *b*.

90 In the modified appliance shown the ratchet-wheel *a* is keyed onto the axle of one pair of wheels, and the drum *c*, which in this case is preferably concentric, mounted loosely thereon, with the ratchet-wheel within it. Said drum carries the pawl *d*, which is counterbalanced, as above described, and has the cranked outer end of the pivot carrying it connected by a spring or elastic band *r* to a fixed part *r'*, so that it is moved into engagement with the ratchet-wheel only when the drum is revolved in the direction in which it compresses the spring in the tube connected to the carriage through the medium of the rope,

chain, or band *o*, which is connected at one end to the drum and at its opposite end to said spring. This drum *c*, instead of being connected to and revolved by the movement of a  
 5 brake-block, as above described in reference to Figs. 1, 2, and 3, is connected to one end of a second rope, chain, or band *o'*, the opposite end of which is wound around one or more times and connected to a second smaller drum *c'*,  
 10 mounted loosely on the axle of the second pair of wheels and which takes the place of the brake-block. This second drum *c'* has a number of removable friction-blocks *s* attached to one end thereof, which may be moved into or  
 15 out of contact with the inner surface of one of the wheels by sliding said drum along the axle on which it is mounted, either by the aid of a lever *t*, pivoted at *t'* and connected at one end to said drum, while its opposite end is con-  
 20 nected by a chain or the like to the lower end of the usual brake-handle situated on the front of the vehicle and normally so held by spring *w* that said friction-blocks are out of contact with the vehicle-wheel, or, as shown  
 25 in Fig. 3, by a bell-crank lever normally held in the position shown by spring *w*, and connected at one end to said drum and at its opposite end to one end of a chain *x*, whose op-

posite end is secured to the lower end of the usual brake-handle.

Where the vehicle is intended to run in both  
 30 directions, the starting and stopping appliance is duplicated, with the exception of the spring or spring-seated plunger, which might be used for both sets, the sets being arranged  
 35 to operate in opposite directions.

What I claim is—

The combination of a brake block capable of being thrown into and out of gear with one  
 40 of the wheels of the vehicle, and of moving with said wheel for a suitable distance, a ratchet wheel secured on the hub of said wheel or its axle where this revolves, a drum  
 45 mounted loosely on the hub of said wheel or its axle where this revolves, and carrying a balanced pawl, which, when said drum is partly revolved, is moved into a position in which it  
 50 gears with the ratchet wheel, and a spring, the latter being connected to the brake block by a rope, passing around the loose drum on the hub or axle of the wheel substantially as described and illustrated.

HENRY WILLIAM B. PRING.

Witnesses:

HORACE E. COULSON,  
 T. F. BARNES.