No. 703,186. Patented June 24, 1902.

A. CLARK.

VEHICLE.

(Application filed Feb. 17, 1902.)

(No Model.) 3 Sheets—Sheet 1.

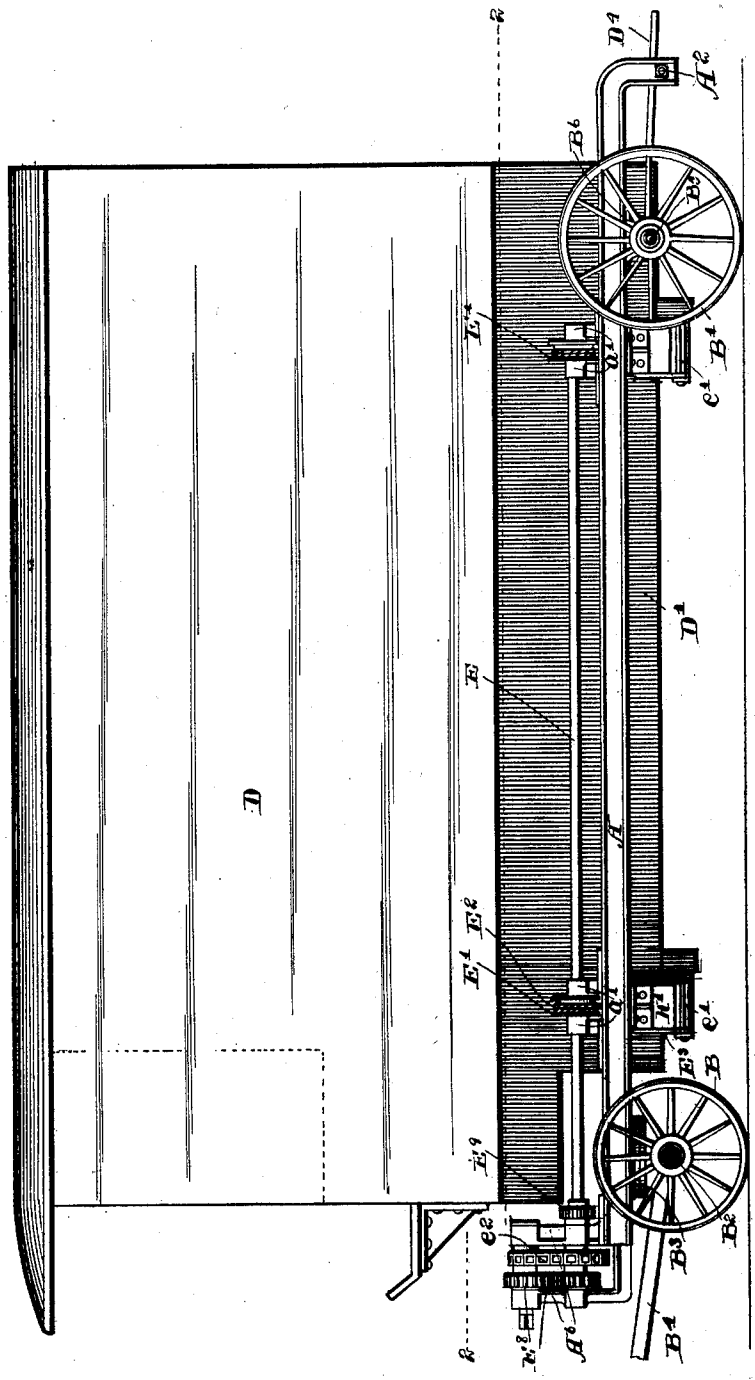


Fig 1

Witnesses:
Carl L. Crawford
William H. Hall

Inventor:-
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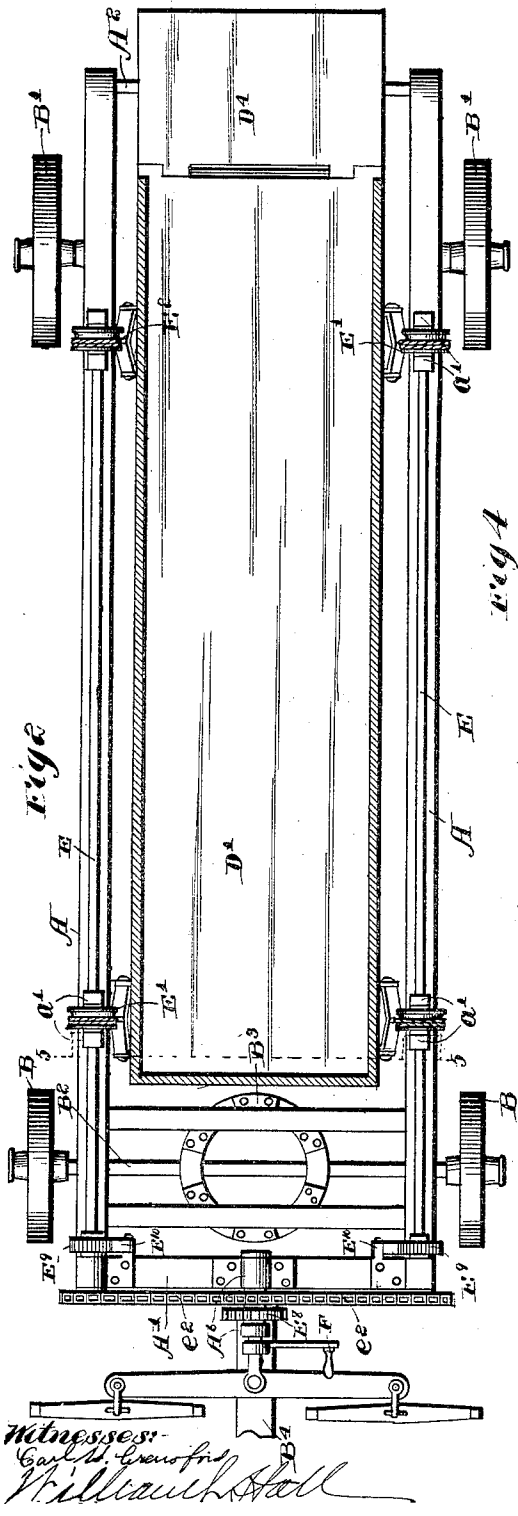


Fig. 2.

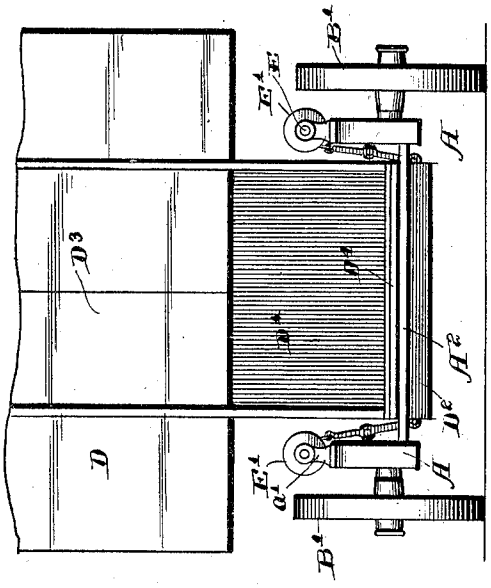


Fig. 4.

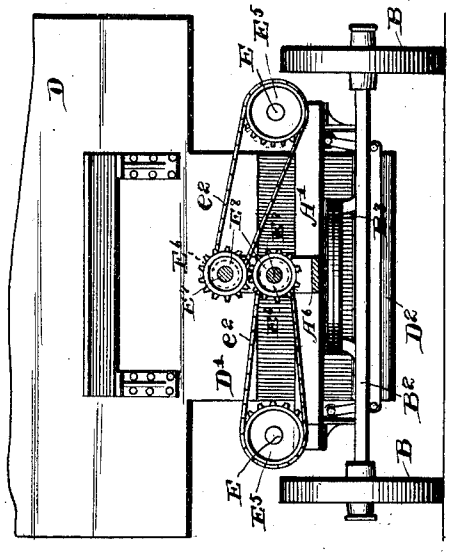


Fig. 3.

Witnesses:
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Inventor:
Alexander Clark
by Poole & Brown
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 703,186. Patented June 24, 1902.

A. CLARK.

VEHICLE.

(Application filed Feb. 17, 1902.)

(No Model.) 3 Sheets—Sheet 3.

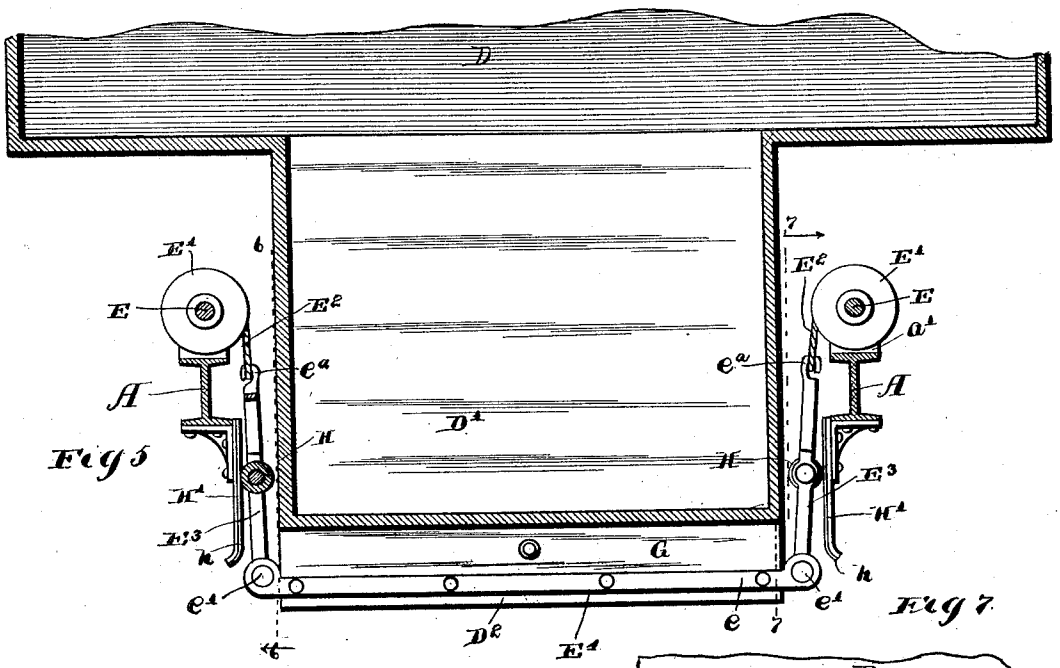


Fig 5

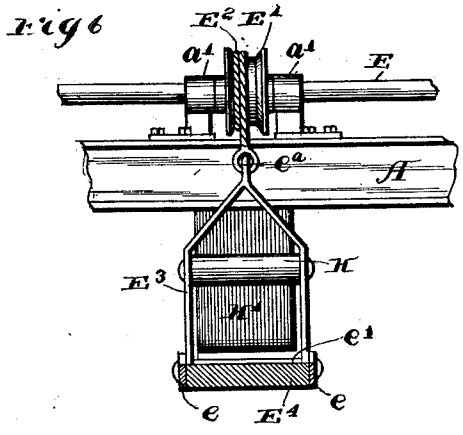


Fig 6

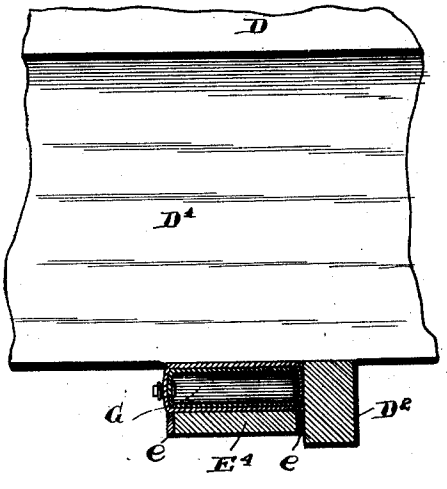


Fig 7

Witnesses:-
Earl H. Crawford
William H. Hall

Inventor:-
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UNITED STATES PATENT OFFICE.

ALEXANDER CLARK, OF CHICAGO, ILLINOIS.

VEHICLE.

SPECIFICATION forming part of Letters Patent No. 703,186, dated June 24, 1902.

Application filed February 17, 1902. Serial No. 94,380. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER CLARK, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vehicles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in vehicles, such as large moving-vans, market-wagons, or the like, wherein the vehicle is provided with a box or body of large capacity, which is supported on the running-gear of the vehicle, with its principal part above the same. The invention refers more specifically to a construction in vehicles of this character designed to permit the box or body to be removed from the running-gear and loaded thereon either when said box is empty or filled, whereby said box and its contents may be transported or conveyed when filled to a place, such as a storage-warehouse or market-house, and said box, together with its contents, thereafter removed from the running-gear, said running-gear being provided with means for loading and unloading the boxes in succession, whereby one running-gear may be used in connection with any number of boxes or bodies.

A further feature of the invention is to provide means for varying the level of the box or body while on the running-gear, and thereby facilitate the loading and unloading of the vehicle from the curbs of streets and like places.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of the vehicle embodying my invention. Fig. 2 is a plan section taken on line 2 2 of Fig. 1. Fig. 3 is a front end elevation of the vehicle. Fig. 4 is a rear end elevation thereof. Fig. 5 is a transverse section taken on line 5 5 of Fig. 2. Fig. 6 is a detail vertical section taken on line 6 6 of Fig. 5 looking in the direction indicated by the arrow. Fig. 7 is a similar section taken on line 7 7 of Fig. 5 looking in the direction indicated by the arrow.

As shown in said drawings, the running-gear of the vehicle consists of two parallel longitudinal side bars A A, which are connected at the front end of the running-gear by a transverse bar A′ and at their rear ends by a second transverse bar A^2. The latter bar is made removable in any suitable manner. The rear ends of said side bars are turned downwardly, and the bar A^2 extends between and is attached to the downturned ends thereof.

B B designate the front wheels, and B′ B′ the rear wheels, of the vehicle. Said front wheels are mounted rotatively on an axle B^2, which extends transversely beneath said bars A, and between said axle and the bars is interposed in any suitable manner a turntable or fifth-wheel B^3, which operates in a familiar manner to permit the front wheels to swing or change their angular position in steering.

B^4 designates a tongue connected with the running-gear.

The rear wheels are mounted on short stub-axles B^5 B^5, which are connected firmly with brackets B^6, attached to and depending from the side bars A.

D designates the box or body of the vehicle and has the general form, as herein shown, of the box of a furniture-moving van, said box being closed and provided at its rear end with doors D^3. The box D is provided on its under side with a longitudinal centrally-disposed contracted portion D′, which extends into the space between the side bars A of the running-gear and is adapted to engage the raising and lowering and supporting devices on the running-gear. The box is suspended from the running-gear through the medium of the following devices:

E E designate shafts parallel with the side bars A and rotatively mounted in suitable bearings *a*′, attached to and projecting upwardly from said bars. Said shafts E are provided with grooved pulleys E′, two pulleys being herein shown on each rod. Connected with said pulleys E′, so as to be wound thereon, are cables E^2, and said cables are attached at their lower ends to hangers E^3, as more clearly shown in Fig. 5, which are in turn pivoted at their lower ends to heavy saddle bars or boards E^4, which extend transversely beneath the central portion D′ of the box D, whereby said box is suspended or

hung from said bars. The cables E^2 are connected by hooks e^a with the hangers to permit detachment or separation of said parts. As herein shown, the lower ends of the hangers are pivoted, through the medium of bolts e', to side straps $e\,e$, which are attached to the side margins of the boards E^4. The saddle-boards each engage transversely-arranged bars D^2, attached to the lower side of the contracted portion of the box, said bars acting to prevent the box from slipping endwise with respect to the saddles. The shafts E extend forwardly to the forward end of the running-gear and are provided at their forward ends with means for simultaneously rotating the same in a manner to raise and lower said suspending devices and the box. For this purpose the shafts are provided at their front ends with rigidly-affixed sprocket-wheels E^5, which are connected by sprocket-chain belts e^2 with sprocket-pinions E^6 E^6 (shown in dotted lines in Fig. 3) and which pinions are affixed to upper and lower parallel shafts E^7 E^7, rotatively mounted in inner and outer bearing-brackets A^6, extending upwardly from the transverse connecting-bar A′ at the front end of the running-gear. Said shafts E^7 E^7 are operatively connected by means of intermeshing gear-wheels E^8 E^8, whereby rotation of one of said shafts E^7 causes rotation of the other shaft in an opposite direction, thereby imparting opposite rotative movement to the raising and lowering shafts E. Power is applied to said raising and lowering devices through the medium of the upper shaft E^7, which is constructed for engagement with a suitable manually-operated implement, such as a crank F. (Shown in Fig. 2.) The suspending devices or saddles are held in adjusted positions, and the body supported by means of ratchet-wheels E^9, affixed rigidly to the shafts E, at the front ends thereof, and pawls or clicks E^{10}, pivoted on the adjacent bearing-brackets and engaging said ratchet-wheels. Other means may be employed for supporting the box in its uppermost position—such, for instance, as braces interposed between the box and running-gear. Any suitable spring or cushioning devices may be interposed between the supporting-saddles or other equivalent devices and the vehicle-body. As herein shown, said cushioning devices consist of pneumatic cushions G, which are interposed between the saddle-boards and the box or body. Said cushions are fastened to the saddle-board in any suitable manner and are adapted to be inflated in a manner usual in such cushions. Said cushions are preferable to the usual carriage or wagon springs for the reason that they occupy less space and are very sensitive to shocks and vibration.

In order to prevent the box or body from shifting or swaying, horizontal antifriction-rollers H are interposed between the box and bearing-plates H′, depending from the side bars A, as shown in Figs. 1, 5, and 6, said rollers H being rotatively mounted in the hangers E^3, between the arms thereof. Said bearing-plates are provided with yielding contact-faces h, such as rubber, and the rollers have like yielding peripheral surfaces, so as to minimize wear and prevent rattling of the parts.

The doors D^3 at the rear of the box extend at their lower ends to the lower part of the widest portion of the body. The rear end of the central contracted portion of the body is closed by means of a swinging leaf or door D^4, which is hinged at its lower margin to the body in the manner clearly shown in Fig. 2 and when swung upwardly closes said rear end of the lower part of the body. Said leaf or door when swung downwardly constitutes a platform over which a person may pass when entering the box of the van for the purpose of loading or unloading the vehicle, the outer or free end of said swinging leaf or door when open resting on the transverse bar or rod A^2, which connects the rear ends of the side bars of the running-gear. When said box or body is to be released, the cross-bar A^2 at the rear end of the running-gear is removed and the raising and lowering mechanism is actuated to lower the box until the transverse bars D^2 at the under side thereof rest on the floor and the saddle-boards are lowered sufficiently farther to free the same from the box. The rearmost saddle-board is detached from the side bars by unhooking its hangers from the cables E^2, so that said saddle-board may be entirely removed from the other parts. Thereafter the running-gear is moved forwardly away from the box, and as the same moves from the box the foremost saddle-board, which is not detached from the running-gear, passes forwardly from under the box, so that said running-gear is completely removed or dismembered from the box or body. Obviously the connection of the running-gear to the box when the box is to be loaded on the running-gear is the reverse from the operation of unloading just described.

The advantages and purposes of the vehicle above described will be understood from the following description of one example of its use: It is proposed to employ the said vehicles in connection with furniture and household-goods storage-warehouses, and it is intended that the body or box of said van shall be loaded while on the running-gear at a residence or like place and that after being conveyed to the warehouse the said body of the van shall be removed, together with its contents, from the running-gear and deposited in said warehouse. The contents of the box shall remain therein until the end of the storage period, so that said van-body constitutes, in effect, when deposited in the warehouse in the manner stated a closed compartment or chamber of the storage-warehouse in which the goods are stored and which is adapted, without transferring or otherwise disturbing

the contents thereof, to be reloaded on a running-gear and conveyed from the warehouse to a point or points at which the goods are to be delivered. In this manner the goods stored need be handled but twice in delivering the same from a residence to a warehouse and redelivering the same from the warehouse—that is to say, at the time the same are loaded at the residence or other place from whence the goods are taken and at the time the same are again discharged from the van when returned from the warehouse to the residence or other place. The work of transferring the goods from the van to a compartment in the warehouse at the beginning of the storage period and from said compartment to the van at the end of said storage period, as has heretofore been common, is entirely avoided.

It is common in large storage-warehouses to provide elevators of sufficient size to raise the moving-vans from the ground-floor to any of the storage-floors, so that said vans may be driven directly to the space on the floor at which the box and its contents are to be deposited. After the box is detached from the running-gear, therefore, it is not necessary to handle the same, nor is it necessary to handle the box by hand or machinery to load the box on the running-gear at the termination of the storage period.

Reference has been hereinbefore made to the use of the vehicle herein described for transporting market products. In this use of the vehicle the vehicle is employed to gather the products from a territory tributary to a central market, such as a large city, and the loaded boxes or bodies are deposited in the market-house and the products sold therefrom. In this adaptation of the vehicle the body or box is made to serve as a convenient selling-booth, so that said bodies become, in effect, removable booths or sections of the market building.

Other special uses of the vehicle will suggest themselves, and the construction of the box or body may be varied to adapt the same to such additional or special uses. Moreover, the construction of the running-gear and the means for suspending the box-body and for detaching the same therefrom may be varied without departing from the spirit of my invention, and I do not wish to be limited to such details, except as hereinafter made the subject of specific claims. For instance, the vehicle may be propelled by motor-power instead of drawn by horses, as herein shown, and in such event the raising and lowering devices may be operated by the propelling-motor.

I claim as my invention—

1. A vehicle consisting of a running-gear embracing longitudinal side bars, a box or body supported on said running-gear having a reduced part which extends downwardly between said side bars, and the upper or enlarged part of which overhangs said side bars, and means on said running-gear for detaching the box from the running-gear and loading the same thereon.

2. A vehicle consisting of a running-gear embracing longitudinal side bars, a box or body supported on said running-gear and having a reduced lower part which extends downwardly between said side bars, means for lowering said box to rest upon the surface which supports the vehicle, the upper or enlarged part of said box or body projecting over or overhanging the side bars, and means for removing the box or body from the running-gear when the same is resting on the surface which supports the vehicle.

3. A vehicle consisting of a running-gear comprising longitudinal side bars connected at their ends by transverse bars, a box or body located principally above the running-gear and having a part which extends between said bars and means for suspending said box or body from said bars constructed to permit detachment of said box therefrom, one of said transverse bars being removable from the side bars to permit the running-gear to be moved away from the box when the latter rests on the surface which supports the running-gear.

4. A vehicle consisting of a running-gear comprising longitudinal side bars connected at their ends by transverse bars, a box or body having a part which extends between said side bars, saddles suspended from said side bars and extending transversely beneath the box or body, and means for disengaging the saddles from the box or body, one of said transverse bars being detachable to permit removal of the box or body from the running-gear.

5. A vehicle consisting of a running-gear embracing longitudinal side bars, saddles supported on said side bars and extending transversely between the same, means for raising and lowering said saddles, a box or body supported on said saddles and having a reduced lower part which extends downwardly beneath said side bars to engage the saddles, the upper part of said box or body overhanging the side bars of the running-gear, and means for detaching the box or body from the running-gear or attaching the same thereto when said box or body is lowered to rest upon the surface which supports the vehicle.

6. A vehicle consisting of a running-gear, permanently-attached axles thereon upon which the supporting-wheels are mounted, a box or body supported on said running-gear, and means for raising or lowering said box-body, said running-gear being capable of being opened at one end, whereby the running-gear may be moved away from the box or body when the latter is resting on the surface which supports the running-gear.

7. A vehicle consisting of a running-gear, comprising longitudinal side bars, axles permanently attached to said side bars and sup-

porting-wheels mounted on said axles, a box or body supported on said running-gear and having a part extending downwardly between said side bars and means for raising or lowering said box or body, said side bars being permanently connected at one end of the running-gear by means of a transverse member or members, but not permanently connected at the other end of said running-gear, whereby the running-gear may be moved away from the box or body when the latter is resting on the surface which supports the running-gear.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 11th day of February, A. D. 1902.

ALEXANDER CLARK.

Witnesses:
WILLIAM L. HALL,
GERTRUDE J. BRYCE.