(No Model.)

S. J. BESTHOFF.

CASH CARRIER.

No. 456,394. Patented July 21, 1891.

Fig. 2.

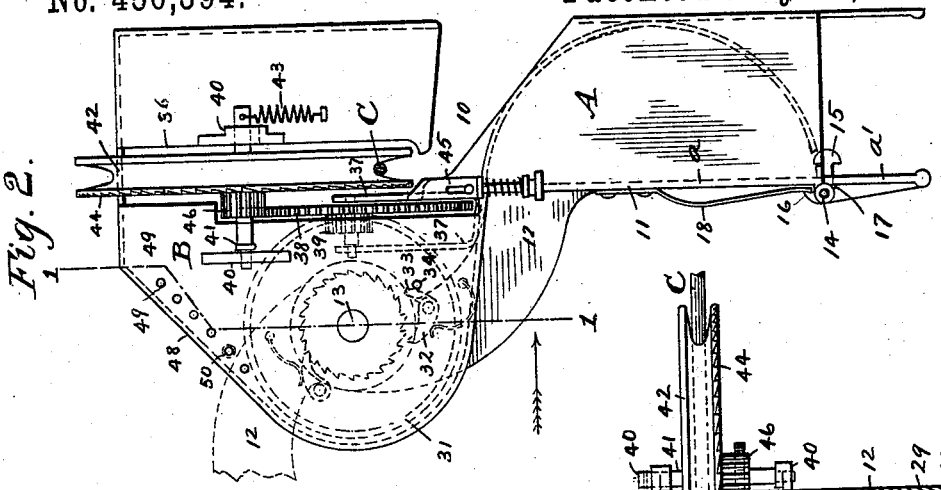


Fig. 4.

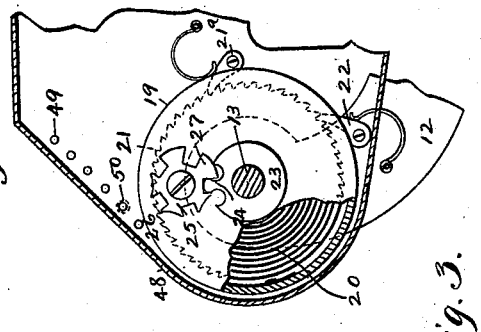


Fig. 3.

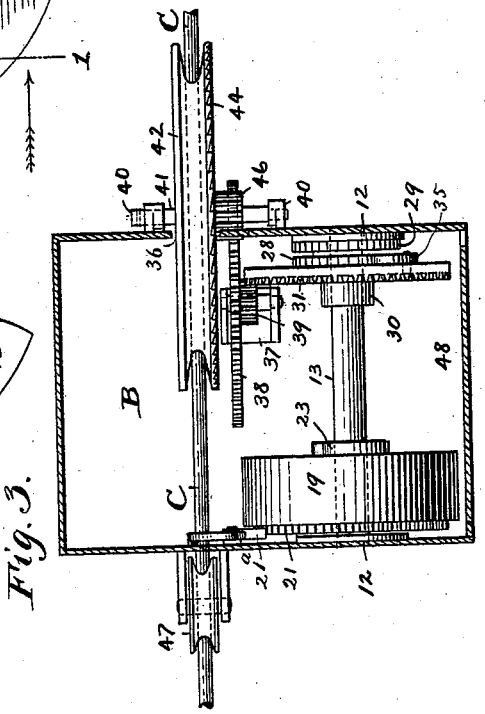
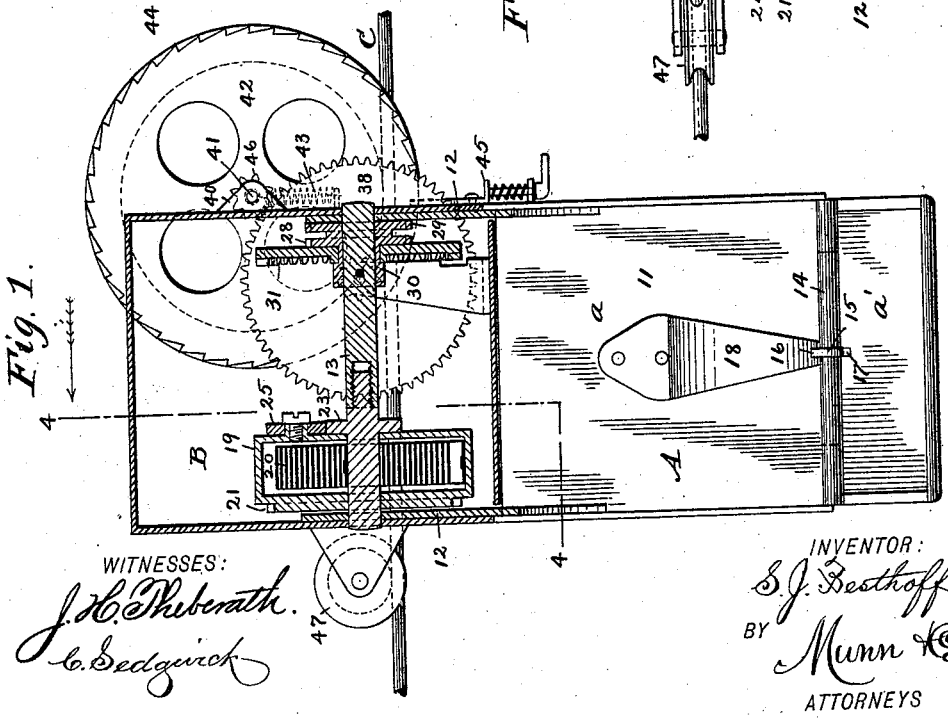


Fig. 1.



WITNESSES:

J. H. Rheberath.

C. Sedgwick

INVENTOR:

S. J. Besthoff

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

SAMUEL JAS. BESTHOFF, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO HERMAN KAHN AND AUGUST NICOLAUS, BOTH OF SAME PLACE.

CASH-CARRIER.

SPECIFICATION forming part of Letters Patent No. 456,394, dated July 21, 1891.

Application filed March 10, 1891. Serial No. 384,399. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL JAMES BESTHOFF, of New York city, in the county and State of New York, have invented a new and Improved Self-Propelling Cash-Car, of which the following is a full, clear, and exact description.

My invention relates to an improvement in cash-cars, and has for its object to provide a car which will be self-propelling and of simple and durable construction.

A further object of the invention is to provide a means whereby the propelling mechanism will be wound up and placed in operative position by manipulating the cash-receptacle of the car or its cover.

Another object of the invention is to provide a means whereby should the mechanism become too tightly wound it may be conveniently and expeditiously relieved.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of the car, partly in section, the section being taken on the line 1 1 of Fig. 2. Fig. 2 is a side elevation of the car. Fig. 3 is a plan view, the casing being in section, and Fig. 4 is a vertical section taken practically on the line 4 4 of Fig 1.

The body of the car is constructed with two compartments A and B, the compartment A being adapted for the reception of the cash, while in the compartment B the propelling mechanism of the car is located. The two compartments are separated by an angular recess 10, extending transversely from side to side in the rear face of the car.

The cash-compartment A is closed by a lid or cover 11, having an arm 12 projecting from each side at its upper or inner end. The arms are curved and are fulcrumed upon a shaft 13, journaled in the side walls of the compartment B. The cover is made in two sections *a* and *a'*, connected by a hinge 14 of any approved construction. The lower section *a'* of the cover extends beyond the outer end of the cash-compartment, and upon the pintle of the hinge 14, at or near the center thereof, a latch 15 is fulcrumed, which extends through to the under side of the cover, and the head of the latch enters an opening in the lower end of the cash-compartment, as shown in Fig. 2.

The latch may be provided with two shoulders 16 and 17, one extending over the outer face of the body-section *a* of the cover and the other over the lower section *a'*, and a spring 18 is secured at one end upon the cover-section *a*, the opposite end of the spring, which has an upward tendency, being passed under the shoulder 16. Thus the latch-head is always held in position to lock the cover, and the upward movement of the cover-section *a'*, which unlatches it, is limited.

The shaft 13 is preferably made in two connected sections to facilitate its location in the car, and near one end of the shaft a drum 19 is loosely mounted, containing a coiled spring 20, one end whereof is secured to the shaft and the opposite end to the drum. A ratchet-wheel 21 is secured upon the outer side face of the drum, the teeth whereof are engaged by a spring-pressed pawl 21^a, pivoted upon the side wall of the compartment B, and a spring-pressed dog 22, pivoted upon one of the cover-arms 12. The pawl prevents the spring in the drum from unwinding, as it is a bar to the rotation of the drum in a direction to accomplish such result, and the dog, which slips over the ratchet-wheel when the cover is opened, forces the ratchet-wheel to revolve, and thereby partially winds the spring when the cover is closed. The spring is also wound, when the cover is opened, by a mechanism located at the other end of the shaft 13, and to be hereinafter described. The tension of the spring is regulated by forming a hub 23 upon the shaft 13, close to the inner face of the drum, having recesses produced in its periphery, forming a tongue 24, and securing an eccentric disk 25 upon the drum by means of a set-screw or similar device, as shown in Fig. 4. The eccentric disk has a

number of teeth in its periphery, sundry of which, as shown at 26, are short and have concaved faces, and others 27 are longer and provided with convexed faces. After the drum is placed in position the spring is wound up until a certain desired tension is obtained, at which time one of the longer teeth of the disk is made to enter one of the recesses in the hub 23. The spring will now be normally maintained at such a tension; but the tension will be increased when the spring is further wound, which occurs each time the cover is opened and closed. The extra tension is that required to propel the car; but when the car stops, having expended the extra force of the spring, the latter will still remain wound at the tension first imparted to it. The short or concave-faced teeth move virtually over the periphery of the hub; but when the spring unwinds to its normal tension the longer tooth first placed will assume its original position, thus preventing a further unwinding of the spring. When the spring weakens, it may be further wound to restore it to its original normal strength by removing the disk and imparting to the drum the necessary number of revolutions, and when the desired result is attained the disk is replaced.

The mechanism for winding the spring at the upward movement of the cover consists of two ratchet-wheels 28 and 29, fast upon or integral with a hub 30, which is keyed or otherwise attached to the shaft 13, near the end opposite the drum 19, and upon the hub a crown-wheel 31 is loosely mounted, the ratchet-wheels being located between the crown-wheel and the opposing sides of the compartment B. The ratchet-wheel 29, which is the outer one of the set, is engaged by a spring-pressed dog 32, which is pivoted upon the cover-arm 12, facing the wheel, as is shown in dotted lines, Fig. 2. This dog 32 is provided at its lower end with a lug 33, adapted when the cover is fully closed to engage with a stud or pin 34, secured to the inner wall of the compartment B, and when such a contact is effected the dog is disengaged from its ratchet-wheel. The crown-wheel is provided with a pivoted spring-pressed pawl 35, which engages with the inner ratchet-wheel 28 of the set, and the object of the pawl 35 is to compel the crown-wheel to revolve in one direction only. In the other direction it is free to revolve. The crown-wheel 31 being loosely mounted permits it to continue revolving after the force of the spring is spent, as only enough power is needed from the spring to carry the car half the desired distance, the remaining distance being accomplished by the momentum of the car. This fact is obvious, as after the desired speed has been imparted to the car the crown-wheel does not act to retard it, being free to turn in one direction without interference with or from the spring. If the crown-wheel was not mounted in this fashion and the force from the spring was spent, the hub and disk 23 and 25 would prevent the crown-wheel from revolving and the car would stop the moment it was not propelled by the spring.

In one side of the compartment B a vertical opening 36 is produced, which intersects the transverse recess 10, as shown in Fig. 2, and between suitable brackets 37, located in the compartment B, a spur-wheel 38 is journaled, a portion of the periphery whereof extends outward through the opening 36. The spur-wheel has integral with or attached to its outer face a pinion 39, meshing with the crown-gear 31.

At each side of the opening 36, preferably at or near the center thereof, a bearing 40 is located, and in said bearings the arbor 41 of a peripherally-grooved supporting-wheel 42 is journaled. One of the bearings 40 has produced therein a vertical slot, through which the arbor is passed, and the arbor is normally held at the bottom of the slot by a spring 43 or its equivalent. The periphery of the supporting-wheel 42 is provided with teeth 44 in one side, which teeth are normally engaged by a latch-head 45, the latch whereof is spring-pressed and adapted to slide upon one side surface of the car, as is shown in Figs. 1 and 2. The arbor 41 of the supporting-wheel 42 has keyed or otherwise attached thereto a pinion 46, which pinion meshes with the gear 38.

The car is adapted to be suspended upon a cable or track C, as heretofore stated, and the cable or track passes through the upper vertical section of the recess 10 to an engagement with the grooved surface of a pulley 47, journaled at the opposite side of the car immediately above the recess 10, as is illustrated in Figs. 1 and 3. The car is so balanced that when thus hung upon its track or cable it will occupy a vertical position, as illustrated in Fig. 2.

The compartment B is preferably inclosed by a cover 48, which is slotted to admit of the movement of the cover 11 of the cash-compartment, and in the side walls of the compartment B a series of apertures 49 is produced, in any one of which apertures a pin 50 is located, the said pin being adapted to limit the upward movement of the cover 11 of the cash-compartment. Thus the increased tension to be imparted to the spring as a propelling-power may be diminished or increased, according to the distance the car is intended to travel.

In the operation of the device, when the cover 11 is raised to place the change in the cash-compartment, the dog 32, engaging with the ratchet-wheel 29, revolves the shaft 13, and thereby partially winds the spring 20. At the downward movement of the cover the dog 32 does not act; but the dog 22 upon the opposite arm of the cover 11 forces the drum 19 to revolve, thereby further revolving the spring.

When the cover is closed, the dog 32 by engagement with the pin 34 is disengaged from its ratchet-wheel, and the driving mechanism would be started in motion were it not for the fact that the latch-head 45 is in engagement with the teeth upon the supporting-wheel 42; but the moment that the device is suspended upon the track or cable the weight of the car forces the arbor of the supporting-wheel 42 a sufficient distance upward in one of its bearings to release said wheel from the latch, and as soon as this release is effected the shaft 13 revolves and the pawl 35 acts as a dog to impart movement to the crown-wheel 31 and said wheel in turn to the supporting-wheel 42.

In the event that the mechanism of the car should be overwound by frequently opening and closing the cover of the cash-compartment before it is placed upon the track the spring may be permitted to uncoil a sufficient amount to admit of the lid 11 being closed or to reduce the speed of the car by sliding the latch 45 out of engagement with the teeth of the supporting-wheel.

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

1. The combination, with a cash-car having a swinging door over its cash-compartment and a spring-actuated propelling mechanism, of a pawl-and-ratchet winding mechanism connected with and operated by the hinged end of said door, substantially as set forth.

2. In a cash-car, the combination, with a drive-shaft, a drum loosely mounted upon said shaft, a spring located in the drum and attached to said drum and to the shaft, and a ratchet-wheel secured to the shaft, of a lid or cover pivoted at one end and dogs attached to the cover engaging with the ratchet-wheel and a ratchet-surface upon the drum, said dogs being adapted to operate in opposite directions, whereby when the cover is raised or lowered the spring is partially wound.

3. In a cash-car, the combination, with a drive-shaft journaled in the car, a drum loosely mounted upon the shaft, containing a spring attached to the shaft and drum and provided with a ratchet-surface, ratchet-wheels secured to the shaft, a supporting-wheel journaled at one side of the drive-shaft, a gear-wheel loosely mounted upon the shaft adjacent to the ratchet-wheels, and a gear connection between the loosely-mounted wheel and the supporting-wheel, of a cover adapted to close the cash-compartment of the car, arms projected from the cover, dogs pivoted upon the arms of the cover and adapted to operate in opposite directions, one dog engaging the ratchet-surface of the drum and the other one of the fixed ratchet-wheels, and a pawl pivoted to the loose gear and engaging the other fixed ratchet, as and for the purpose specified.

4. In a cash-car, the combination, with the body thereof provided with a cash-compartment, a shaft journaled above the cash-compartment, a drum loosely mounted upon the shaft and provided with a ratchet-surface, a spring coiled within the drum, attached to the latter and to the shaft, ratchet-wheels provided with a single hub secured to the shaft, and a crown-wheel loosely mounted upon the hub of the fixed ratchet-wheels, of a supporting-wheel adapted to travel upon the track or cable, a gear connection between the supporting-wheel and crown-wheel, a stop attached to the car and engaging with the supporting-wheel, a cover for the cash-compartment pivoted upon the shaft, the said cover being provided with dogs oppositely operated and engaging with the ratchet-surface of the drum and one of the fixed ratchet-wheels, and a dog pivoted upon the crown-wheel, engaging with the other fixed ratchet-wheel, as and for the purpose specified.

5. In a cash-car containing a spring-controlled propelling mechanism, the combination, with said mechanism, of a toothed supporting-wheel driven by the mechanism, having one of its bearings spring-controlled, and a stop located upon the casing of the car and normally engaging with the teeth of the supporting-wheel, substantially as shown and described, whereby when the car is supported upon the cable by the supporting-wheel said wheel will be automatically thrown out of engagement with the stop, as set forth.

6. In a cash-car provided with a propelling mechanism, a toothed supporting-wheel driven by the said mechanism, having a spring-controlled bearing, and a spring-latch located upon the frame of the car and normally engaging with the teeth of the supporting-wheel, as and for the purpose specified.

7. In a cash-car, a cover for the cash-compartment, constructed in two hinged sections, a latch fulcrumed upon the pintle of the hinge, the head whereof extends beyond one side of the cover, the other end being provided with oppositely-extending shoulders, and a spring secured upon one section of the cover at one end, the other end whereof extends beneath one of the shoulders of the latch, as and for the purpose specified.

8. In a cash-car, the combination, with the drive-shaft, a cover for the cash-compartment pivoted upon said shaft, a drum loosely mounted upon the shaft, containing a spring secured to the shaft and to the drum and provided with a ratchet-surface, ratchet-wheels having a single hub secured to the shaft, and a gear-wheel loosely mounted upon the hub of the fixed ratchet-wheels, of a dog pivoted upon one side of the cover and engaging with the ratchet-surface of the drum, a pawl also engaging with said surface, a dog pivoted upon the opposite side of the cover, engaging with the outer fixed ratchet-wheel and provided with an extension at its pivotal end, a pin secured to the casing of the car

and adapted to be engaged by the extension of the dog, a dog pivoted upon the loosely-mounted gear and engaging the inner fixed ratchet-wheel, a supporting-wheel, a stop for the supporting-wheel, and gearing, substantially as described, connecting the supporting-wheel and the loosely-mounted gear of the drive-shaft, as and for the purpose set forth.

SAMUEL JAS. BESTHOFF.

Witnesses:
J. FRED ACKER,
C. SEDGWICK.