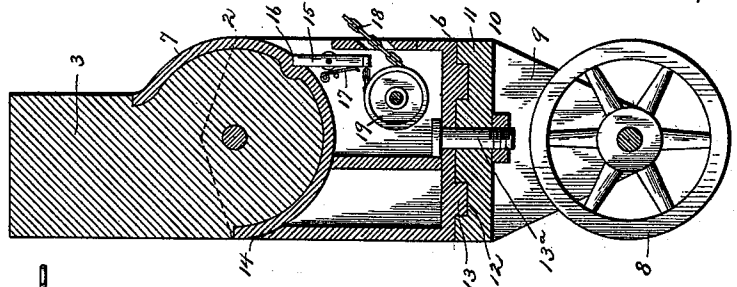
(No Model.) 2 Sheets—Sheet 1.

M. V. KINGSBERRY.

HAND CAR.

No. 536,531. Patented Mar. 26, 1895.

FIG. 5.



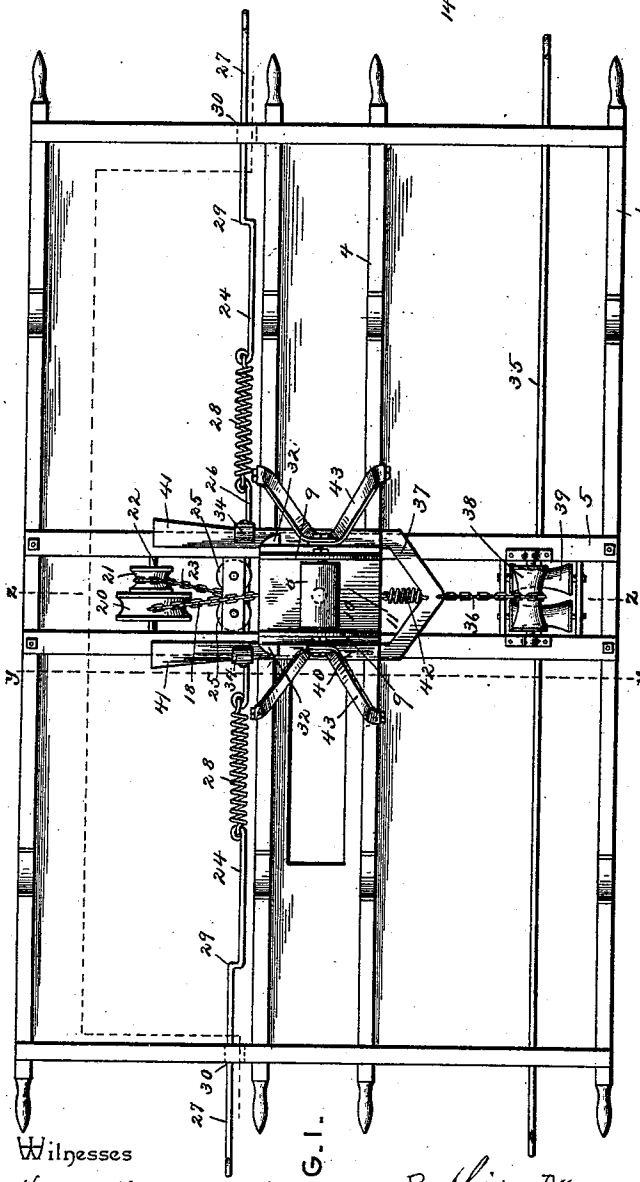


FIG. 1.

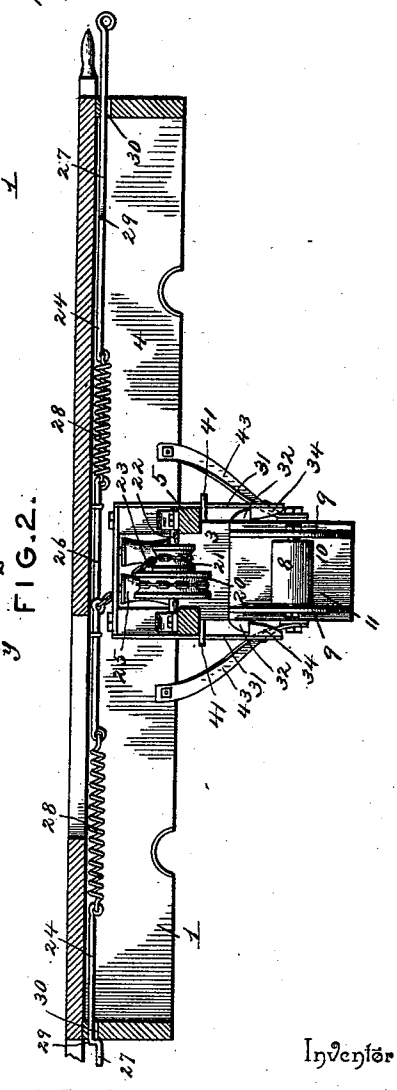


FIG. 2.

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(No Model.) 2 Sheets—Sheet 2.

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FIG. 3.

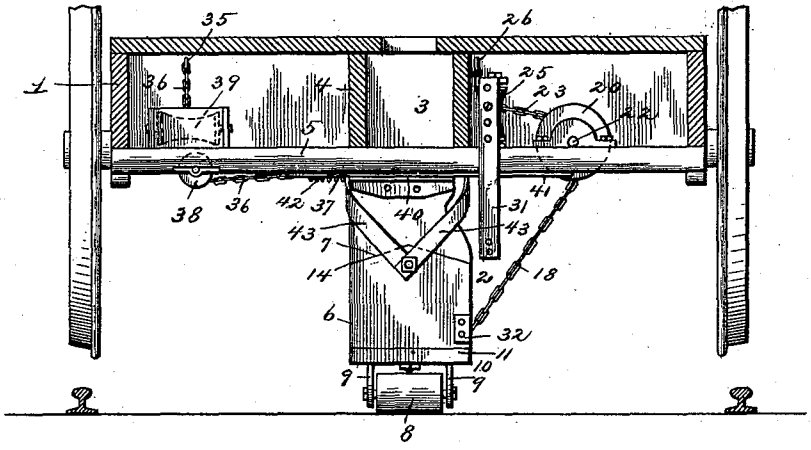


FIG. 4.

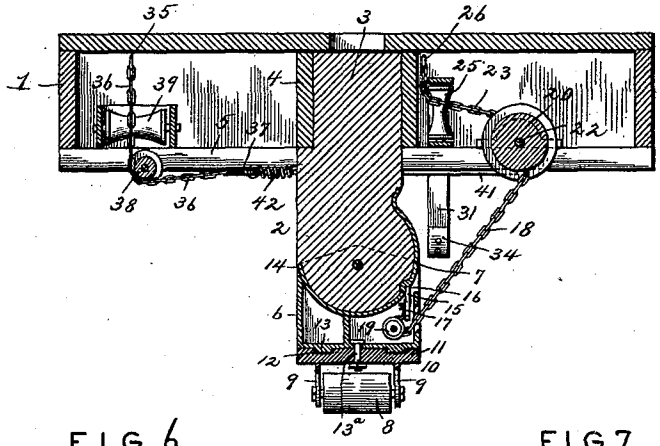


FIG. 6.

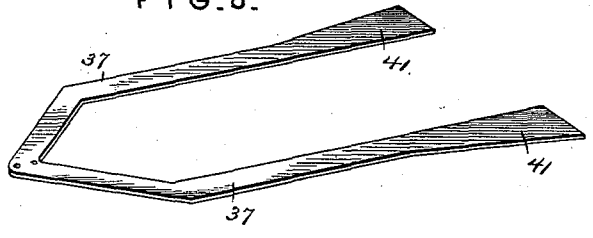
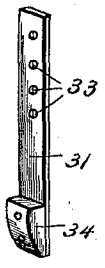


FIG. 7.



Inventor

Martin V. Kingsberry.

Witnesses

Harry L. Amer.

J. F. J. Riley

By his Attorneys.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

MARTIN V. KINGSBERRY, OF DOVER, DELAWARE.

HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 536,531, dated March 26, 1895.

Application filed October 26, 1894. Serial No. 527,053. (No model.)

To all whom it may concern:

Be it known that I, MARTIN V. KINGSBERRY, a citizen of the United States, residing at Dover, in the county of Kent and State of Delaware, have invented a new and useful Hand-Car, of which the following is a specification.

The invention relates to improvements in hand cars.

The object of the present invention is to provide simple and efficient means for enabling hand cars to be readily removed from a track, without lifting the entire weight of the car.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings: Figure 1 is a reverse plan view of a hand car provided with my improvements. Fig. 2 is a longitudinal sectional view, the central folding pivot leg being shown folded. Fig. 3 is a transverse sectional view on line *y*—*y* of Fig. 1. Fig. 4 is a similar view on line *z*—*z*. Fig. 5 is an enlarged detail sectional view of the pivot leg. Fig. 6 is a detail perspective view of the sliding wedge. Fig. 7 is a detail view of one of the resilient catches.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a hand car, which may be of any desired construction, and which has centrally secured to it, the upper end of a folding leg 2, adapted to form a pivot for the hand-car, to enable the same to be turned clear of the rail, when it is desired to remove the hand car from the track. The folding leg 2 consists of a rigid upper portion 3, which is secured to the frame of the hand car, between longitudinal and transverse beams 4 and 5, and a lower portion 6, which is connected with the rigid upper portion by a knuckle joint 7, and which is adapted to swing upward, as illustrated in Fig. 2 of the accompanying drawings, to clear the track, when it is not in use. The upper portion of the leg may be constructed of wood, and the lower portion preferably consists of a hollow casting, and has swiveled to it a wheel or roller 8, which is journaled in depending sides 9 of a swiveled yoke 10. The yoke consists of substantially triangular sides, and a plate 11, provided with an annular groove 12, receiving a corresponding rib 13 of the bottom of the portion 6 of the leg. The bottom of the hollow casting 6 is provided with a perforation, and the plate 11 has a corresponding one, to receive a pivot bolt 13^a, whereby the yoke of the caster wheel is swiveled to the leg. When the leg is extended, and is in a vertical position, as illustrated in Figs. 3 and 4 of the accompanying drawings, the wheels of the hand car are adapted to swing clear of the rails, the length of the leg being sufficiently greater, and the distance between the deck of the car and the cross-ties, to permit such. There should be about three inches clearing distance between the car wheels and the rails, to prevent all gripping or strain on the axle wheels, or any gearing of the car; and when the hand car is supported by the leg, it is adapted to be readily turned at any desired angle to the track.

The lower folding section of the leg is maintained in a vertical position when in operation by the shoulder 14 of the knuckle joint at one side of the leg, and by a spring catch 15, located at the opposite side of the leg. The spring catch 15 is pivoted intermediate of its ends on the swinging portion of the leg within the same, and it engages a shoulder 16 of the lower end of the upper portion 3 of the leg, and it is retained in such engagement by a spring 17. The lower rounded end of the upper portion 3 of the leg is preferably lined with metal at the joint, and the shoulder 16 is formed by a notch in the metallic lining. The lower end of the pivoted spring actuated catch 15 has attached to it a chain 18, which passes around a guide pulley 19, located within the hollow lower portion of the leg, and adapted to cause the chain to withdraw the pivoted spring actuated catch out of engagement with the upper portion of the leg, to permit the latter to fold. The chain passes through an opening in one side of the hollow lower portion 6, and extends upward in the direction of one side of the car, and is attached to a pulley 20, which has fixed to it a smaller pulley 21. The pulleys 20 and 21 are mounted on a shaft 22, and the smaller pulley 21 has attached to it a chain 23, extending to a longitudinally disposed operating rod 24, whereby when the latter is moved longitudi-

nally of the car, in the manner hereinafter described, the pulleys will be caused to rotate to wind up the chain 18, thereby raising the hinged portion of the leg. The chain 23 passes between a pair of guide pulleys 25, and is attached to a central section 26 of the operating rod 24, which is provided with opposite end sections 27, connected by spiral springs 28 with the central section 26. Each end section 27 is provided with a shoulder formed by a bend 29, and it is arranged in a slot 30 of the adjacent end beam of the frame of the car, and it is adapted to be pulled outward, and partially rotated to engage its shoulder 29 with the end beam, as illustrated in Fig. 2 of the accompanying drawings. After the operating rod has been distended in this manner, the hand car is lifted at one end to take its weight from the folding leg, and the spring 28, being thus free to act, will contract and automatically swing the leg upward.

When the leg is swung upward, as illustrated in Fig. 2 of the accompanying drawings, it is retained in that position by oppositely disposed resilient catches, 31, engaging projections or lugs 32 of the leg. The resilient catches 31 depend from the frame of the car, and are vertically adjustable, being provided at intervals with perforations 33, to receive suitable fastening devices, to permit such adjustment. The lower ends of the resilient catches 31 are provided with beveled lugs or teeth 34, shouldered at their upper ends and adapted to engage the lugs 32 of the hinged lower portion of the leg. The leg is lowered for use by means of an operating rod 35, mounted longitudinally of the car at one side thereof and connected by a chain 36 with a sliding wedge 37, arranged to spread the resilient catches to disengage them from the lugs of the lower portion of the leg. The chain 36 passes over a guide pulley 38, and between a pair of guide pulleys 39; and the sliding wedge is composed of a frame, having opposite wedge-shaped sides arranged in suitable ways or guides 40 of the frame of the car, and disposed at the inner sides of the resilient catches. As the wedge is drawn outward, its tapering portions 41 are interposed between the catches, which are forced outward. This allows the leg to fall; and the sliding wedge is returned to its normal position by a spiral spring 42, connected with the framework of the car adjacent to the leg, and to the cross or end piece of the frame of the sliding wedge.

The folding leg is readily applicable to all kinds of hand cars, and the resilient catches are adjustable to facilitate such application, and the upper portion of the folding leg is supported by substantially V-shaped braces 43, secured to the longitudinal beams 4, and to the leg.

It will be seen that the construction, for enabling hand cars to be removed from a track, is simple and comparatively inexpensive in construction, that it is strong and durable, and that it is capable of being readily applied to all forms of hand cars. It will also be seen that it obviates the necessity of lifting the entire weight of a hand car, and that it prevents the wheels from gripping the rails and straining the axles or the gearing of a hand car.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. A hand car provided with a folding leg having a swiveled wheel, and arranged when extended to form a pivot for the hand car, and having a length sufficient to cause the wheels of the hand car to clear the rails in turning, substantially as described.

2. The combination with a hand car, of a folding leg having a hinged lower portion and secured to the car, opposite catches mounted on the car and arranged to engage the lower portion of the leg for holding the same elevated, a sliding wedge interposed between the catches and arranged to spread the same for releasing the leg, and means for operating the sliding wedge, substantially as described.

3. The combination with a hand car, of a folding leg secured thereto and having a hinged lower portion, resilient catches mounted on the car and arranged to engage the lower portion of the leg for holding the same elevated, a sliding wedge provided with opposite sides receiving the leg between them and arranged in suitable ways and interposed between the catches, said sides being provided with tapering portions adapted to spread the catches, and means for operating the sliding wedge, substantially as described.

4. The combination with a hand car, of a folding leg mounted thereon and having a hinged lower portion adapted to swing upward, the opposite catches arranged to engage the lower portion of the leg, the sliding frame composed of sides located at opposite sides of the leg, and interposed between the catches and provided with tapering portions to spread the same, a spring for returning the sliding frame to its normal condition, an operating rod mounted on the car, a chain connecting the operating rod with the frame, and guide pulleys, substantially as described.

5. The combination with a car, of a folding leg secured thereto and having a hinged lower portion, an operating rod disposed longitudinally of the car and having a spiral spring adapted to be distended, gearing for connecting the operating rod with the leg, and means for locking the operating rod when drawn outward, whereby the spring will be caused to swing the leg upward, substantially as described.

6. The combination with a car, of a folding leg secured to the same and having a hinged lower portion, an operating rod disposed longitudinally of the car and provided with spiral springs, and having shoulders at its ends for engaging the car, and gearing for

connecting the rod with the swinging portion of the leg, substantially as described.

7. The combination with a car, of a folding leg mounted thereon and having a hinged lower portion, a spring actuated catch mounted on the hinged portion of the leg and engaging the other portion for locking the leg in operative position, a pulley mounted on the folding portion of the leg, a chain passing around the pulley and having one end connected to the catch, and an operating rod connected with the other end of the chain and adapted to disengage the catch and swing the leg upward, substantially as described.

8. The combination with a car, of a folding leg secured thereto and having a hinged lower portion arranged to swing upward, a catch mounted on the swinging portion of the leg and locking the same in operative position, depending catches mounted on the car and arranged to support the hinged portion of the leg when folded, a chain extending from the swinging portion of the leg and connected with the catch thereof, the pulleys fixed together, one of the pulleys receiving said chain, a chain 23 connected with the other pulley, a yielding operating rod connected with the chain 23, and means for disengaging the depending catches for releasing the leg, substantially as described.

9. The combination with a car, of a folding leg comprising a rigid upper portion secured to the car, a hollow lower portion connected with the upper portion by a hinge joint and provided at its bottom with an annular rib, a yoke having an annular groove receiving said rib, a central pivot swiveling the yoke to the lower portion of the leg, and a wheel journaled between the sides of the yoke, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MARTIN V. KINGSBERRY.

Witnesses:
THOMAS KINNAMON,
ENOCH CLARK.