A. WICKEY.

CART.

APPLICATION FILED MAY 24, 1913.

1,105,228.

Patented July 28, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

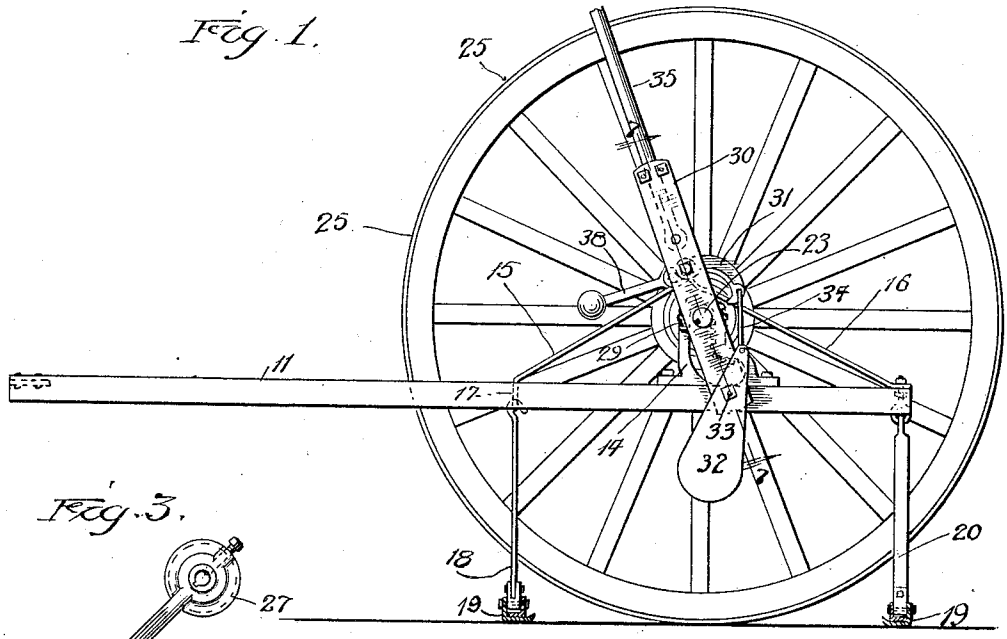
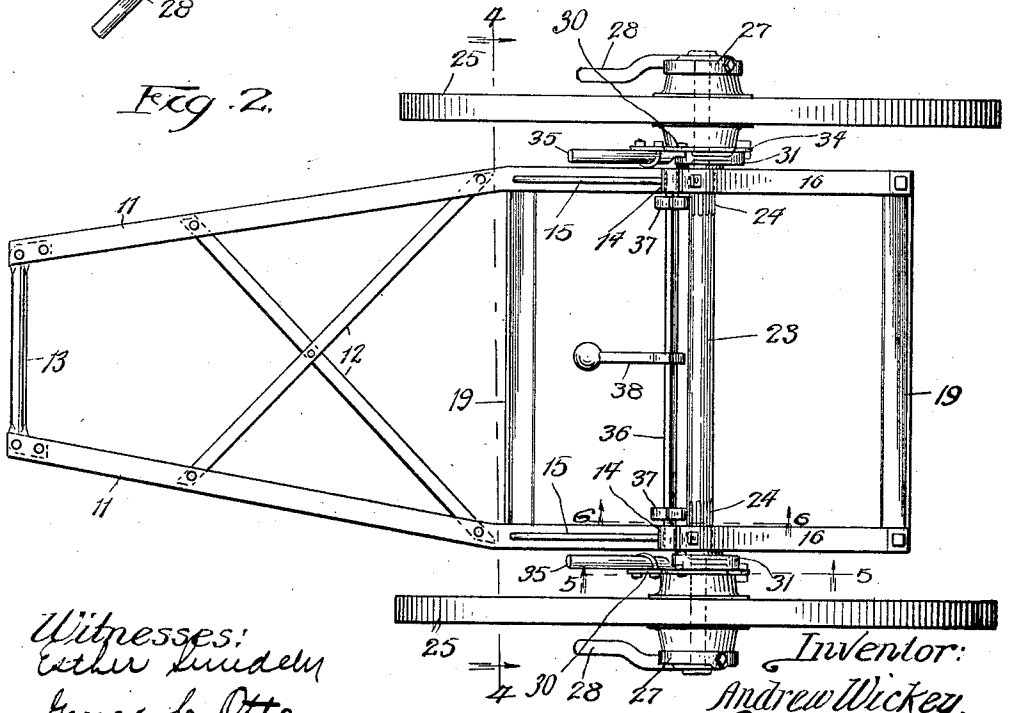


Fig. 3.

Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 4.

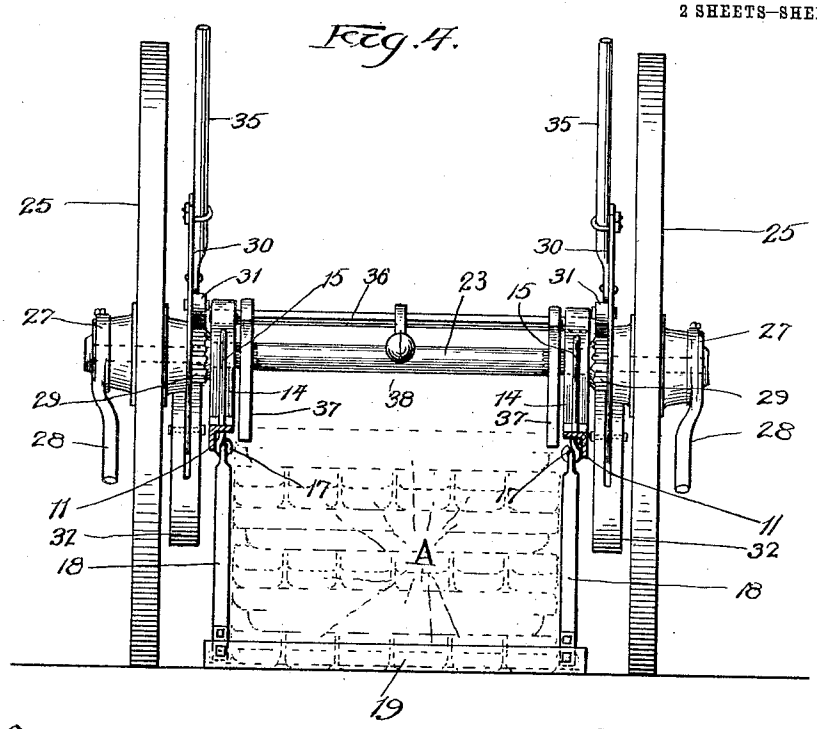


Fig. 5.

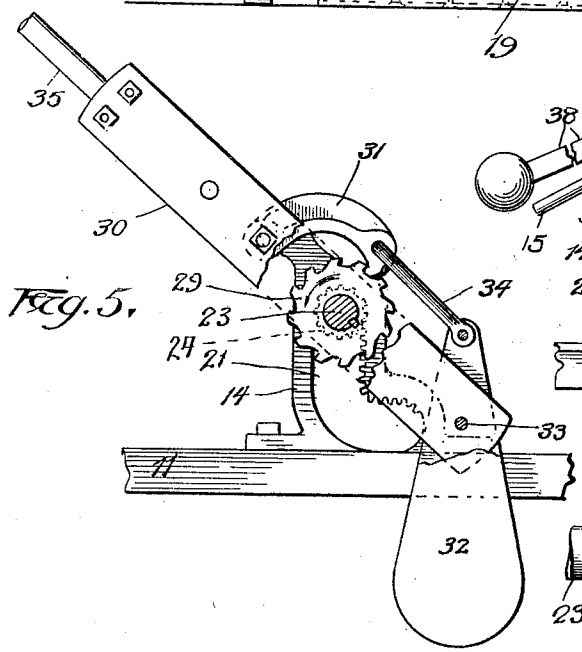


Fig. 6.

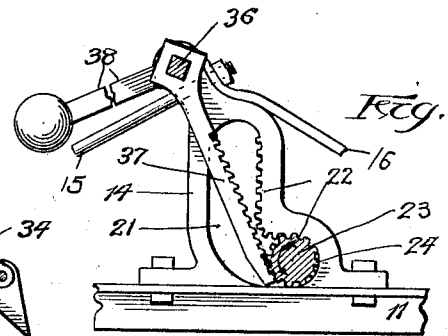
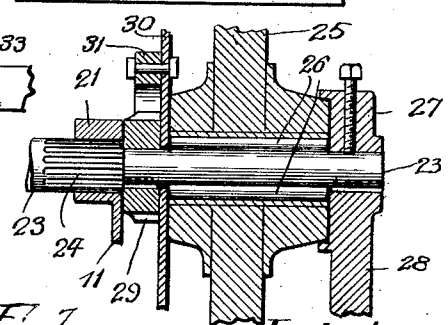


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CART.

1,105,228. Specification of Letters Patent. Patented July 28, 1914.

Application filed May 24, 1913. Serial No. 769,609.

To all whom it may concern:

Be it known that I, ANDREW WICKEY, a citizen of the United States, and a resident of East Chicago, county of Lake, and State of Indiana, have invented certain new and useful Improvements in Carts, of which the following is declared to be a full, clear, and exact description.

This invention relates to carts, and has been designed especially for transporting and more especially for loading into and out of box cars pig lead, pig iron or the like.

The primary object of this invention is to provide a cart of simple and substantial construction having mechanism for raising a heavy load of pig lead, pig iron or the like, from the floor, and means for locking said load raising mechanism in raised position.

Other objects and advantages will appear in the course of this specification, and with all of said objects and advantages in view, this invention consists in the several novel features of construction and arrangement hereinafter fully set forth and more particularly defined in the claims.

The invention is clearly illustrated in the drawings furnished herewith, of which—

Figure 1, is a side elevation of a complete cart, embodying the preferred form of my invention, the near wheel having been removed in order to more clearly illustrate the parts immediately behind the same; Fig. 2, is a plan of the cart; Fig. 3, is a detail side elevation of a certain lever used in lowering the load; Fig. 4, is a vertical cross section taken on the line 4—4 of Fig. 2; Fig. 5, is a detail view, partly in side elevation and partly in vertical, longitudinal section, of the load raising mechanism, the line of section being indicated at 5—5 in Fig. 2; Fig. 6, is a detail view, partly in side elevation and partly in vertical, longitudinal section of certain parts of the load raising mechanism, the line of section being indicated at 6—6 in Fig. 2, and Fig. 7, is a detail, cross section taken on the line 7—7 of Fig. 1.

Referring to said drawings, 10, designates the main frame of the cart, here shown as comprising two angle iron bars 11, 11, connected by diagonal brace bars 12, and having a transversely extending handle-bar 13, connecting the two forward ends of said angle iron bars 11. Near the rear ends of said angle iron bars 11, are two brackets 14, which are bolted to the upper sides of the angle iron bars; diagonal braces 15, 16, extend from the upper ends of said brackets to the angle iron bars 11, and are secured thereto. The braces 15, pass through the angle iron bars, and are formed with eyes 17, therebelow, through which are hooked links 18, which carry a horizontal load carrying bar 19, which is arranged to engage with the underside of the lowermost pigs of lead in the pile to be transported. The other braces 16, are bolted to the angle iron bars 11, by eye bolts, and hooked links 20, connect said eye bolts, with a companion load carrying bar 19. Both load carrying bars are of angle iron formation having their horizontal flanges bent up slightly and sharpened on the edges so as to bite into the pigs of lead, and thereby prevent slipping. The proportions are such, that when in unloaded position, the load carrying bars 19, rest upon the ground, and the links 18, serve to support the forward end of the main frame 10.

The brackets 14, are formed with L-shaped slots 21, having gear racks 22, upon the rear vertical, and upper horizontal edges of the slots; as clearly indicated in Fig. 6, and extending through said L-shaped slots is an axle or shaft 23, which is formed with circumferentially disposed teeth 24, adapted to intermesh with the teeth of the gear racks 22; said axle or shaft 23, carries supporting wheels 25, upon its ends, and it is preferred to employ roller bearings 26, between the wheels and axle to reduce the friction therebetween to a minimum. Beyond said wheels, caps 27, are keyed or otherwise fastened to the axle or shaft 23, and said caps are formed with handles 28, which are used in dropping the load, as will be hereinafter more fully set forth.

Between each angle iron bar 11, and adjacent supporting wheel 25, is a ratchet-wheel 29, which is secured to the axle or shaft 23; and pivotally mounted on the axle adjacent to each ratchet-wheel 29, is a lever 30, which carries a pawl 31, which may engage with said ratchet-wheel 29, but which is normally held out of engagement therewith by a weighted arm 32, pivotally carried by the lever 30, as at 33, and connected at its upper end with the end of the pawl 31, by a link 34. The proportions and arrangement of the parts just described are such that when the lever 30, extends in its normal position (as indicated in Fig. 1) the weight-

ed arm 32, acts to hold the pawl 31, out of engagement with the teeth of the ratchet-wheel 29, but when said lever 30, has been moved to the position, indicated in Fig. 5, then the weighted arm 32, changes its position relative to the lever 30, straightens out the pawl and link connection, and thereby moves the pawl into engagement with the teeth of the ratchet-wheel 29; the further downward movement of the lever 30, imparts a partial revolution to the ratchet-wheel 29, and the axle or shaft upon which it is fastened. The lever 30, has an upper extension 35, in the form of a round handle, which may be grasped in rocking the lever 30, back and forth.

Journaled in the upper ends of the brackets 14, is a shaft 36, which extends across the frame of the machine, and has two detents 37, rigidly secured thereto, which detents engage the teeth 24, of the axle or shaft 23, and operate to prevent retrograde movement thereof. Said detents are held in engagement with the teeth of the axle or shaft 23, by a weighted arm 38, which is fixedly secured to the shaft 36, at some point between its ends. To disengage the detents from the axle or shaft 23, the weighted arm 38, is swung over beyond the center of the shaft 36, and this may be done after the load has been raised to its fullest extent.

In normal or unloaded condition, the upper ends of the vertical portions of the brackets 14 rest upon the axle or shaft 23, as seen in full lines in Figs. 1 and 5, the frame and load carrying bars being in their lowermost position: the load carrying bars 19, are then slipped under the ends of the lowermost pigs of lead of the cross piled pig lead bars A, that are to be transported from one place to another. The detents 37, having been moved into engagement with the teeth 24, of the axle or shaft 23, the operating levers 30, are rocked in a downward and upward fashion, and the ratchet-wheels 29, are therewith rotated in the direction of the arrows in Figs. 5 and 6, causing said axle or shaft to rotate in the same direction and raise the brackets 14, by reason of the engagement of the teeth 24, with the rack teeth 22, of said brackets; during the upper movements of the levers 30, the detents 37, are held in engagement with the teeth 24, of the shaft, thereby preventing retrograde movement thereof. The continued rocking of the lever 30, raises the brackets 14, frame 11, load carrying bars 19, and the load carried thereby, until the lower horizontal ends of the L-shaped slots 21, reach the axle or shaft, whereupon the continued rotation of the axle or shaft 23, causes the brackets 14 to move forward until the shaft occupies a position in the horizontal portions of the L-shaped slots 21, whereupon the entire load may be carried by the lower or horizontal portions of the brackets 14, which now rest upon said axle or shaft. The cart may now be drawn to the place where it is desired to deliver the load, the detents 37, swung out of engagement with the teeth 24, of the axle or shaft 23, and thereupon the one or both dropping levers 28, may be taken hold of, swung upward until the axle or shaft has been rolled out of the horizontal portions of the L-shaped slots 21, whereupon the brackets 14, drop to their lowermost position, turning the axle or shaft; the frame and load, carried thereby, consequently are lowered until the load drops upon the floor. It is to be observed that while the load is being lowered, the pawls 31, are held out of engagement with the ratchet-wheels 29, by the weighted arms 32, so that there is no danger for the levers 30, to be swung around with the shaft when the load is being dropped. By reason of the anti-friction bearings betwen the axle and wheels, the shaft may turn freely in said bearings when the frame is being raised or lowered without necessarily turning the wheels.

More or less variation of the exact details of construction are possible without departing from the spirit of my invention, and I do not, therefore, desire to limit myself to the exact details of construction shown and described, except as may be necessitated by the prior state of the art.

I claim as new and desire to secure by Letters Patent:

1. A cart comprising a frame, brackets carried thereby, each formed with an L-shaped slot having a gear rack on one vertical and horizontal edge thereof, an axle or shaft extending through said L-shaped slots, and having teeth intermeshing with the gear racks thereof, supporting wheels mounted upon said axle or shaft, and mechanism for rotating said axle or shaft and thereby raising the frame of said cart and therewith the load.

2. A cart comprising a frame, a pair of carrier bars, below the frame, freely swinging links secured to the frame and supporting said carrier bars, brackets mounted on said frame, each formed with an L-shaped slot, having gear racks on one vertical and horizontal edge thereof, an axle or shaft extending through said L-shaped slots, and having circumferentially arranged teeth intermeshing with the teeth of said gear racks, supporting wheels journaled upon said axle or shaft, and mechanism for rotating said axle or shaft, and thereby raising the frame and load carried by said carrier bars.

3. A cart comprising a frame, load carrying bars supported thereby, brackets supported on said frame, each having an L-shaped slot formed therein, which is provided with a gear rack upon one vertical

and horizontal edge thereof, an axle or shaft extending through said L-shaped slots, and having circumferentially arranged teeth intermeshing with the teeth of said gear racks, a ratchet-wheel secured upon said axle or shaft, a lever pivoted upon said axle or shaft, and having a pawl adapted to engage said ratchet-wheel, a detent pivotally mounted upon said brackets and means for holding said detent in engagement with said teeth of the axle or shaft.

4. A cart comprising a main frame, and load carrying bars secured thereto, brackets secured to said frame, a rotary axle extending through said brackets, wheels journaled upon said axle, frame raising mechanism associated with said axle and brackets, and means between said frame and axle for locking said axle against retrograde movement, said locking means being capable of being disengaged from the axle, thereby releasing said frame, and permitting it to return to a lower position.

5. A cart comprising a main frame, and load carrying bars suspended therefrom, a pair of brackets supported on said frame, each having an L-shaped slot formed with rack teeth on one vertical and horizontal edge, a shaft or axle extending through said slot and having circumferentially arranged teeth intermeshing with said rack teeth, detents pivoted upon said brackets and engaging the teeth of said shaft or axle, and acting to prevent retrograde movement of said shaft, a pair of supporting wheels journaled on said shaft or axle, means for rotating said shaft to raise the frame, and an arm rigidly secured to said shaft for rotating it in a retrograde direction whenever the detents are disengaged from the teeth thereof.

6. A cart comprising a frame, supporting wheels and load carrying mechanism, including a pair of angle iron bars arranged to engage the lower side of the load, and having upturned, sharpened edges arranged to bite into the load.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."