2 Sheets--Sheet 1.

L. E. TRUESDELL.

Wagons for Hauling Stone or Heavy Bodies.

No. 136,287. Patented Feb. 25. 1873.

Fig 1

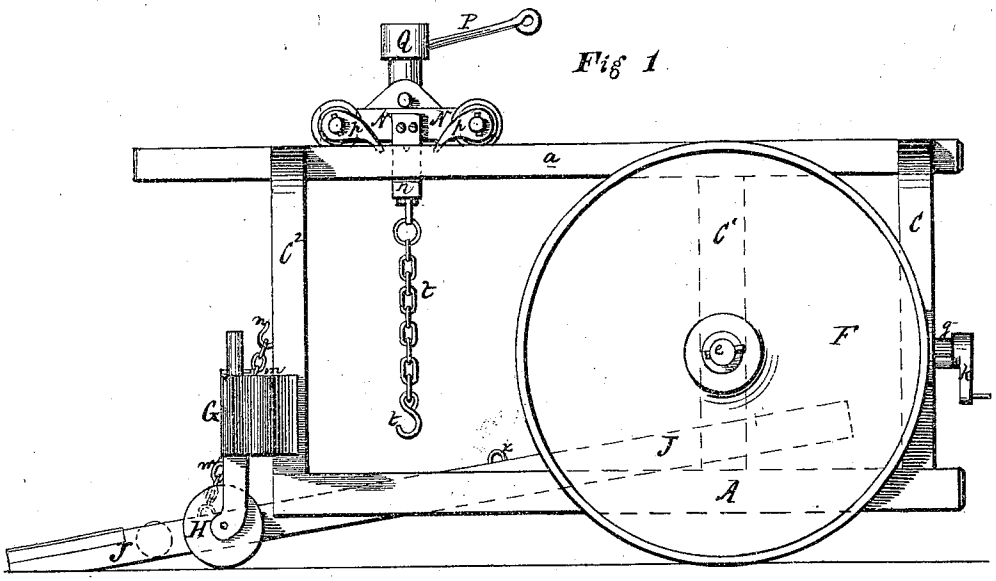
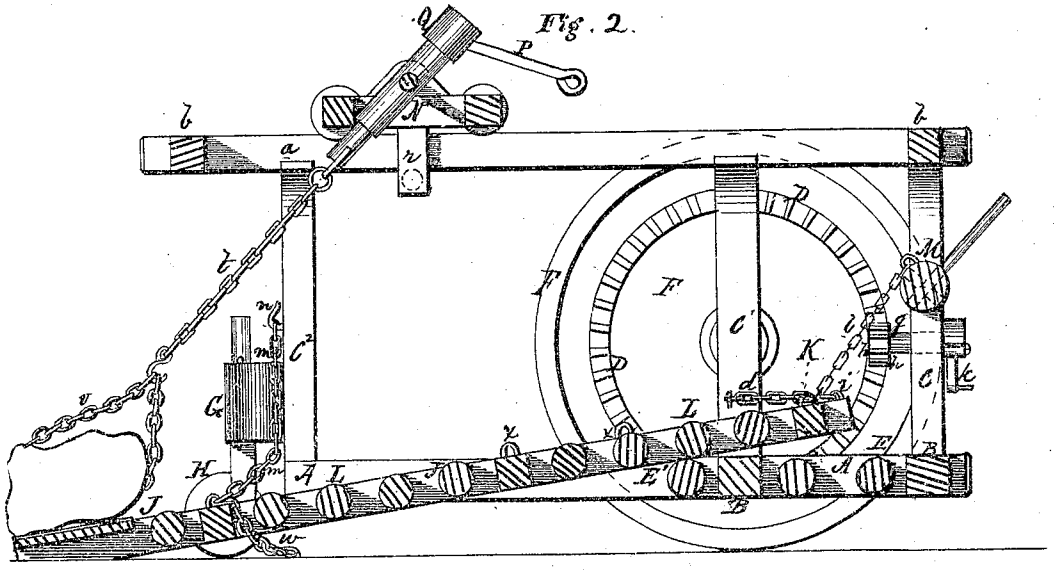


Fig. 2.



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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

2 Sheets--Sheet 2.

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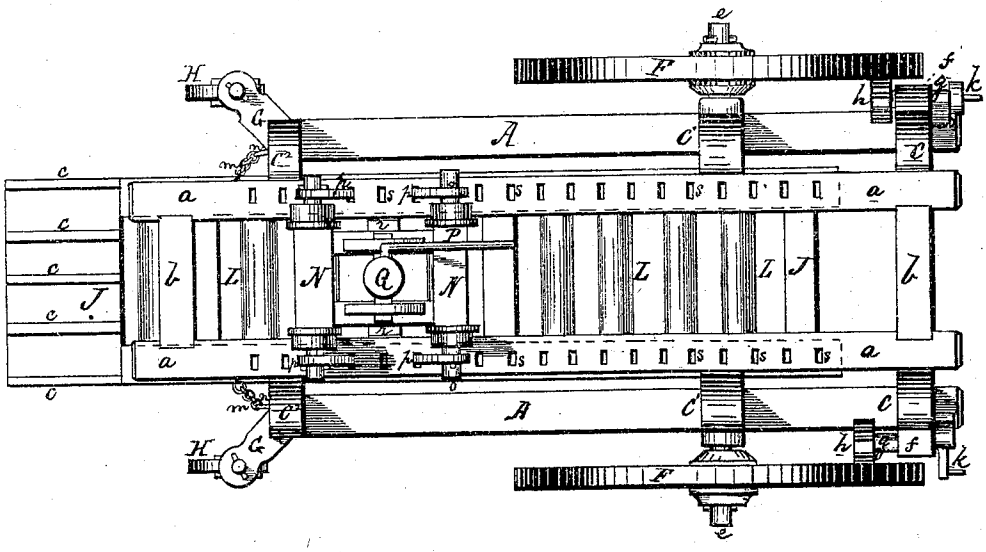
Fig 3



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UNITED STATES PATENT OFFICE.

LUCIUS E. TRUESDELL, OF WARREN, MASSACHUSETTS.

IMPROVEMENT IN WAGONS FOR HAULING STONE OR HEAVY BODIES.

Specification forming part of Letters Patent No. 136,287, dated February 25, 1873.

To all whom it may concern:

Be it known that I, LUCIUS E. TRUESDELL, of Warren, in the county of Worcester and State of Massachusetts, have invented a certain new and Improved Wagon for Hauling Stone and other Heavy Bodies, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a side elevation of a wagon having my improvements applied thereto; Fig. 2, a vertical longitudinal section; and Fig. 3, a plan of the same.

The object of my invention is to facilitate the loading and unloading of large stone and other heavy weights; and it consists, first, in combining with the wagon a swinging platform or bed; secondly, a hydraulic or other lifting-jack; thirdly, a carriage-way for the support of the lifting-jack; and, lastly, a hand device for adjusting the end of the wagon to the load to be lifted.

To enable others skilled in the art to make, construct, and use my improvement I will now proceed to describe its parts in detail.

The wagon-frame consists of two strong sills, A, framed together at their forward end by two stout cross-pieces, B. On each sill are erected three standards, C C^1 C^2, arranged as shown in Figs. 2 and 3. These standards support a top-frame, which consists of two stout timbers, *a*, framed together at their ends by cross-pieces *b*, (see Fig. 3,) and the whole then firmly bolted or otherwise secured to the standards. This top-frame forms a carriage-way for the lifting-jack. To the middle standards C^1 are secured in any suitable manner trunnions or half-axles *e* for the main supporting-wheels F of the wagon. To each of the rear standards C^2 is secured an arm, G, in which is formed the bearing of a caster-wheel, H. These wheels serve to support the rear end of the wagon. To each of the forward standards C is secured a bearing, *f*, of a sliding shaft, *g*, which carries a pinion, *h*, that meshes into a toothed wheel, D, formed on or otherwise secured to the side of the main supporting-wheels F, the pinions *h* being driven by a crank-handle, *k*. These pinions can be thrown in or out of gear as required, and are used to adjust the rear end of the wagon by turning either of the wheels F so as to accomplish the object.

Between the cross-pieces of the sills A are arranged friction-rolls E, another roll, E^1, being placed immediately in the rear of the inner one, for a purpose to be hereafter described.

Thus framed and mounted the wagon is ready for its bed or platform, but which in this case is made entirely independent of the frame. The bed consists of two strong beams, J, securely framed together by cross-pieces K, and provided with a series of friction-rolls, L. The rear end of this platform consists of stout planks laid crosswise and armed with iron slide-bars *c* in the line of the length of the bed. Thus constructed the platform is inserted between the standards with its forward end resting on the friction-rolls E and cross-pieces of the sills A of the frame. Two short and stout chains, *d*, each connected at one end to one of the middle standards of the frame, are then attached at their other end to a strong staple, *i*, made fast to the beams J of the bed. These chains limit the forward movement of the bed. Besides these chains two others, *l*, are also attached to the forward end of this bed, one to either beam, and to a winch, M. These chains serve the two-fold purpose of retracting the platform, and of raising and lowering it. Near the rear end of the platform are attached two other chains, *m*, which serve to support that end of the platform when attached to the hooks *n*. (See Figs. 1 and 2.) Between the staples of the chains *m* and *l* are arranged two or more other sets, *x*, to which chains can be attached to assist in loading, or to support the platform when loaded, suitable hooks being secured to the upper sills *a* for that purpose. Upon the upper frame *a* is mounted a traveling-carriage, N, the axles *o* of which carry pawls *p*, which engage with teeth or notches *s* formed on the face of the sills *a* of the upper frame, as shown in Figs. 1 and 3. The face of the sills may be made of iron, with the teeth formed in it, and then bolted to the sills *a*; or the latter may be made entirely of hollow iron. This carriage N is held in place by sliding guides or braces *r*, as in Fig. 1, or they may be provided with clamp friction-rolls, as in Fig. 2. On this carriage-frame is mounted in suitable bearings a pivotal lifting-jack, Q, and which may be either a screw or hydraulic jack. P represents the lever which operates

the jack, and *t* a chain and hook by which the jack is attached to the weight to be moved, in a manner similar to that shown in Fig. 2.

Thus constructed, the operation of the wagon is as follows: The wagon is backed up to the stone and its rear end properly adjusted with regard to the stone by suitably turning the crank-levers K of the pinions *h*, which will cause the wheels F that carry the gear-wheels D with which the pinions mesh to revolve, and thereby turn the wagon according to the direction in which the pinions are turned; or, instead of a toothed pinion and gear-wheel being used, a friction-wheel and pulley may be substituted for the same purpose; but the first is deemed the better mode of effecting the object. This done, the rear end of the platform J is lowered, as in Fig. 1, and with its forward end resting on the roll E^1, a chain is then passed around the stone or body to be moved, as seen in Fig. 2, and the hook of the jack-chain *t* attached thereto; the carriage N is then moved as far forward on the frame *a* as the chain *t* will permit, and the pawls *p* then dropped in place; the jack is now operated by means of its lever P, the effect of which is to drag the stone up the inclined plane of the platform J, for a distance equal to the full play of the jack; this done the stone is propped in place, the jack reversed, the carriage again moved forward, and the power of the jack again applied, and so on until the stone has been fairly drawn upon the platform, the friction-rolls L materially facilitating the operation. The stone being now secured in place, the jack is released from the chain that embraced the stone, and moved back to the rear end of the wagon and there attached to the ends of two chains, *w*, whose other ends are secured to the sides of the platform or bed J. This done the jack is again operated until the rear end of the wagon-bed or platform with its load has been raised as far as the jack can carry it, at which point the extra chains *m* are put into requisition by being hitched over the hooks *n*, in order to support the platform and its load until the jack can be reversed and rehooked for an additional raise, these operations being renewed and continued until the platform has been raised as high as it is desired to be for the purposes of transportation in the wagon, when the extra chains will be hooked up and the jack finally released. This final raising of the rear end of the platform will have caused the latter and its load to find its true center of gravity by rolling at its forward end over the rolls E^1 and E; the chains *e* are then tightened by turning the winch M until the forward end is also swung up and there held in place by ratchet and pawl suitably arranged on standards C and winch M, or if desired, it may be allowed to rest on the rolls E of the lower sills A of the wagon-frame. In either of these positions the wagon is ready to start on its journey.

From what has been said it will be apparent that the swinging platform can, through the instrumentality of the traveling-jack, be raised so as to load or unload from elevated positions, such as railroad-cars, &c.

Instead of two rear-supporting caster-wheels, H, being used, a single one may be used in the rear, its frame being so arranged as to turn entirely around to facilitate loading and afterward be replaced, in which event, if deemed desirable, suitable temporary supports may be used for the rear end of the wagon-frame.

Having described my invention, what I claim is—

1. The combination of the independent wagon-bed J with a wagon-frame, substantially as described, the whole operating in the manner and for the purposes set forth.

2. The combination of a movable or adjustable lifting-jack, Q, with a wagon-frame, substantially as described, for the purposes set forth.

3. A wagon-frame, consisting of a carriage-way, *a*, and a lower supporting-frame, A, and a system of standards, C, C^1, and C^2, substantially as described, and for the purpose set forth.

4. The combination of a pinion, *h*, and gear-wheel D with the main wheels F of a wagon, as arranged and operated, for the purpose specified.

LUCIUS E. TRUESDELL.

Witnesses:

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D. G. STUART.