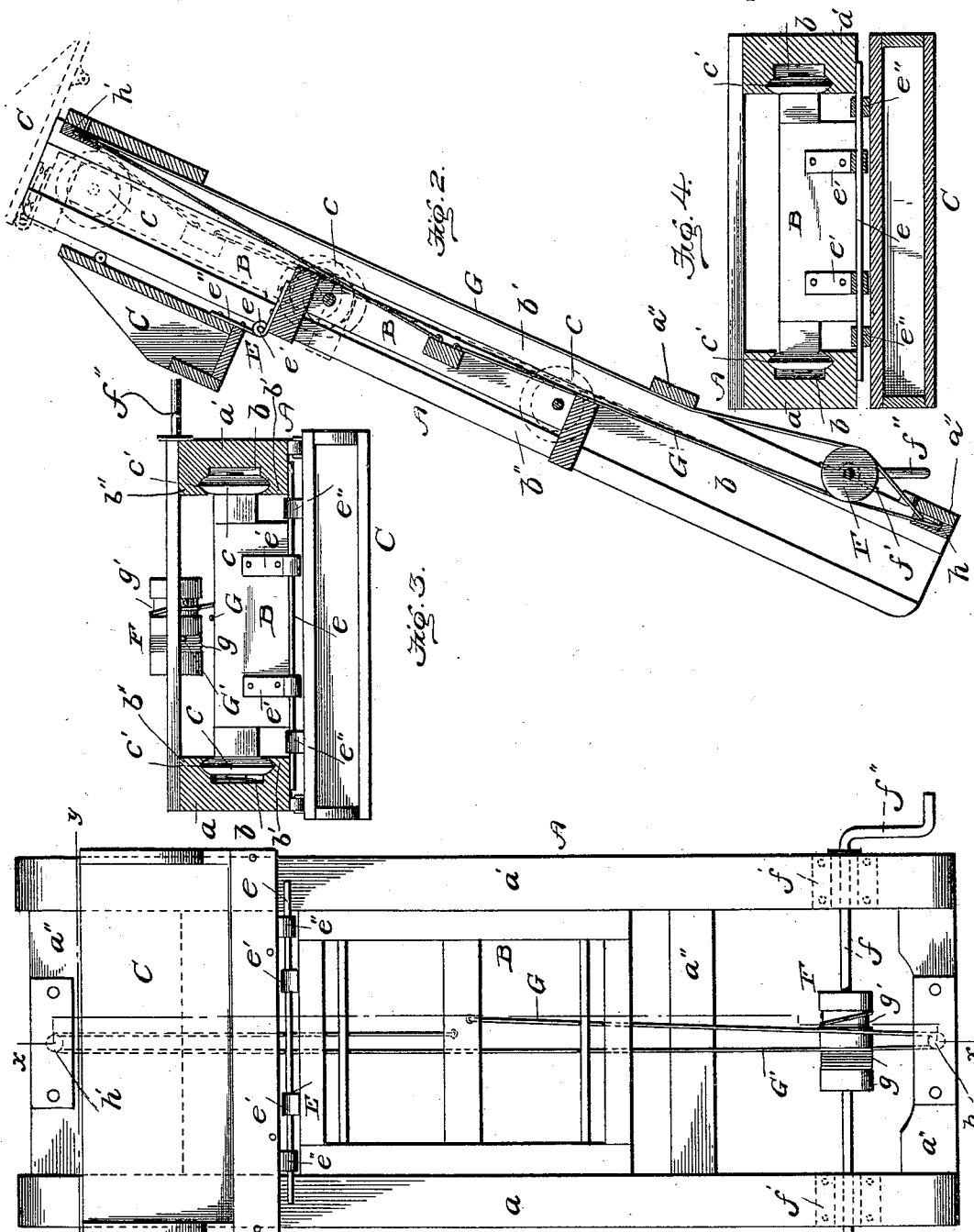


(No Model.)

N. NEWMAN.
HOISTING APPARATUS.

No. 536,789.

Patented Apr. 2, 1895.



Witnesses

J. C. Dasher
J. B. Motherhead

Fig. 1.

Nelson Newman
Inventor

-BY- *H. J. Bouchard*
Att'y.

UNITED STATES PATENT OFFICE.

NELSON NEWMAN, OF SPRINGFIELD, ILLINOIS, ASSIGNOR OF TWO-THIRDS
TO SAMUEL J. WILLETT AND GEORGE A. SANDERS, OF SAME PLACE.

HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 536,789, dated April 2, 1895.

Application filed November 5, 1894. Serial No. 527,966. (No model.)

To all whom it may concern:

Be it known that I, NELSON NEWMAN, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented a new and useful Improvement in Hoisting Apparatus; and I do hereby declare that the following is a full, clear, and exact specification, such as will enable others skilled in the art to which it relates to make and use the same.

My invention relates to improvements in hoisting apparatus, and the object that I have in view is to provide a simple, portable and easily operated machine by which materials can be quickly hoisted to the desired elevation and be automatically discharged, after which the parts are returned to their lowered position for reloading the car.

The apparatus invented by me can be used for a variety of purposes and in different arts, as for instance to raise dirt from cellars, wells, and all other kinds of excavations, or in hoisting brick, mortar, and other builder's materials or supplies to the upper stories of a building under construction, or it can be used by farmers in loading vehicles, building stacks, and in storing hay or grain in barns, or in loading and unloading boats, or in fact it can be used in any place or relation where a light and portable hoist is convenient or desirable.

With these ends in view, the invention consists in the novel combination of devices, and in the construction and arrangement of the parts which will be hereinafter fully described and defined by the claims.

To enable others to more readily understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a front elevation of my hoisting apparatus. Fig. 2 is a longitudinal sectional view thereof, on the plane indicated by the dotted line *xx* of Fig. 1. Fig. 3 is a horizontal sectional view on a plane above the traveler or carriage, indicated by the dotted line *y-y* of Fig. 1. Fig. 4 is an enlarged sectional view through the car and carriage, showing the manner of hinging or pivoting the car to said traveler or carriage.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates the upright frame of my hoisting apparatus, which frame carries the traveler or carriage, B, the car C, and the hoisting mechanism by which the traveler and car are raised or lowered. This frame A is designed to be placed in an upright position, and said frame is designed to be made of any proper length and quite light, but strong in construction, so that it can be moved from one place to another.

The frame, A, consists of the longitudinal rails, *a, a'*, which are tied and braced together by a series of cross-bars, *a''*, or other suitable form of bracing, all of which parts are rigidly united together in any approved manner. In the opposing faces of these longitudinal rails, *a, a'*, are formed the longitudinal channels, *b, b'*, which are so cut in the side rails as to form the base flange, *b'*, and the overhanging top flange, *b''*, which channeled and flanged rails of the frame A provide the longitudinal guide ways that receive, guide and sustain the traveler or carriage B. This traveler or carriage, B, consists of a suitable open frame having its side bars tied together by transverse bars; and said traveler is provided with the carrying wheels or casters, *c, c*, that are fitted in the channels or guide ways *b, b'*, between the top and base flanges. In the preferred embodiment of my invention shown in the drawings, these carrying wheels or casters, *c, c*, are made with V shaped peripheries that are adapted to ride in the V shaped grooves, *c', c'*, cut in the opposing faces of the base and top flanges, *b, b'*, of the channeled guide rails, *a, a'* in order to hold the carriage in position on the frame A and permit it to have the desired freedom of movement longitudinally thereon; but I do not strictly confine myself to this particular construction of the frame with the grooves in the top and base flanges on the side rails, and to the use of the V shaped carrying wheels on the traveler or carriage, as I am aware that a track on the frame and wheels adapted to said track and journaled on the carriage may be used without departing from the spirit or sacrificing the advantages of my invention,

the track being the equivalent to the grooves in the flanges *b, b'* as will be readily understood by those skilled in the art to which this invention relates.

5 The car C of my hoisting apparatus is constructed of large capacity and so that it will ride or bear, when moving vertically, against the outside of the frame A, to be sustained thereby in a position where the car will be prevented from tilting and discharging its load.

10 This car, C, is made of a length equal to the width of the frame, A, against the outside faces of the side rails, *a, a'*, of which it is designed to ride, and said car is made in the form of a receptacle, with an open upper end, to enable it to receive the load and, when tilted at the upper end of the frame A, to discharge the load beyond the top of the frame, A. This car is connected at its lower inner edge to the outside of the carriage or traveler by means of a hinge joint that permits the car to have the necessary tilting movement in discharging the load, and in one embodiment of my invention, this hinge joint, E, consists of the pivotal rod, *e*, supported in fixed brackets or straps *e'* that are fastened to the car, and the turning brackets or straps, *e''*, which are fastened to the inside vertical wall of the car and which straps *e''* are fitted loosely on the pivotal rod, *e*, to turn easily thereon with the car when the latter reaches the upper extremity of the frame A, and is turned or tilted to empty the load. It is evident, however, that the precise form of pivot or hinge connection between the car and traveler may be varied without departing from the principle of the invention.

20 To provide for the convenient raising and lowering of the traveler and car, I have devised and adopted the hoisting drum F and the two cables, G, G'. This hoisting drum, F, is rigidly fastened to a shaft, *f*, that is journaled in suitable bearings, *f'*, fixed to the frame, A, near the lower end thereof; and said shaft, *f*, is also provided with a crank-handle *f''*, by means of which it can be conveniently rotated by hand. The drum, F, is constructed in two sections, or provided with two grooves, *g, g'*, around which are reversely coiled the two cables, G, G'. One of the cables, G, is attached at one end to the traveler or carriage. It then passes around a suitable guide, as for instance a pulley, *h*, supported near the lower extremity of the frame A, and its other end is then coiled in one direction around the part, *g*, of the pulley or drum F, to which part *g* said end of the cable G is fastened. The other cable G' is also attached to the carriage or traveler, B, but it extends upwardly therefrom, around a guide or pulley, *h'*, attached to the upper end of the frame, A, and then the cable G' extends to the part, *g'*, of the drum, F, around which part, *g'*, the cable G' is coiled in the reverse direction to the cable G on the part *g* of the drum, said end of the cable G' being fastened in any suitable way to the part, *g'*, of the drum.

This being the construction of my hoisting apparatus, the operation may be described as follows: The traveler and car being lowered to the bottom of the frame, A, the load is deposited in the car, either by shoveling or in any other way, until the car is filled, and then the crank handle *f''* is rotated to turn the drum F. By turning the shaft and drum in the proper direction, the cable, G' is caused to wind up on the part *g'* of the drum, and the cable G is caused to unwind on the part, *g*, thereof. As the cable G' passes over the pulley or guide, *h'*, at the top of the frame, the cable pulls up the carriage or traveler B and with it the car C; and during this upward movement of the traveler and car, the latter bears or rides against the rails *a, a'* of the frame A so that it is held from tilting on the hinge joint E and its contents are prevented from being discharged. When, however, the traveler and car reach the upper end of the frame, there is nothing to sustain the upper end of the car, and the car consequently is free to turn to a position at right angles across the top of the frame A, to discharge the load over and beyond the frame, the car being prevented from tilting backward when the upper end of the car clears the upper end of the frame A because the heel or pivoted end of the car rides or bears against the outside of the rails *a, a'*, of the main frame. The car is thus automatically tilted when it reaches the limit of its upward movement, and its load thereby discharged without manual labor or attention on the part of the operator. To lower the car and traveler, it is necessary to reverse the direction of the crank handle and turn the drum in the opposite direction, thereby unwinding the cable G' from the part *g'* of the drum, and at the same time coil the cable G on the part *g* of the drum; and as the cable G, which passes over the guide, *h*, at the bottom end of the frame A, now pulls on the traveler, the latter is caused to descend and the car is drawn down with it, said car riding against the frame A in a manner to cause it to assume its upright position at the beginning of the descent and to ride against the outside faces of the rails *a, a'*, until it reaches the bottom of the frame A, in proper position to be again loaded previous to hoisting the second load.

I am aware that changes in the form and proportion of parts and in the details of construction herein shown and described as an embodiment of my invention can be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of the invention.

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

1. In a hoisting apparatus, a main frame A having the side rails thereof provided with longitudinal grooves in their opposing faces,

and with the base flanges and the overhang-
ing flanges, in combination with a traveler
fitted within the rails of the frame and hav-
ing carrying wheels arranged within said
5 grooves, between the base and overhanging
flanges, a car hinged or jointed to said trav-
eler and arranged outside of the frame to ride
against the side rails thereof, and mechan-
ism for moving the traveler and car longi-
10 tudinally of the main frame, substantially as
and the purposes described.

2. A hoisting apparatus comprising a main
frame having its side rails channeled to pro-
vide the base and overhanging flanges, a trav-
15 eler or carriage within said main frame and

provided with carrying wheels which are con-
fined between the flanges of the side rails, a
car hinged or jointed at its inner lower edge
to the traveler or carriage and arranged out-
side of the frame to ride against the latter, 20
a hoisting drum, and a cable between said
drum and carriage, substantially as and for
the purposes described.

In testimony whereof I hereunto set my
hand in the presence of two witnesses.

NELSON NEWMAN.

Witnesses:

L. J. WAITE,

WM. R. BOWERS.