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W. M. MYERS & G. W. HINTON.

LOAD RECEIVER FOR HOISTING AND CONVEYING MECHANISMS.

APPLICATION FILED FEB. 17, 1908.

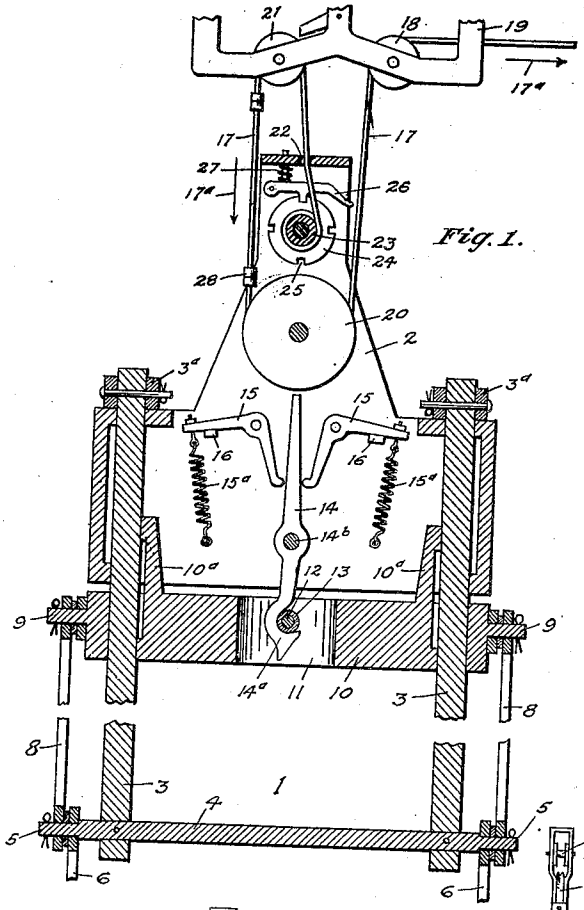


Fig. 1.

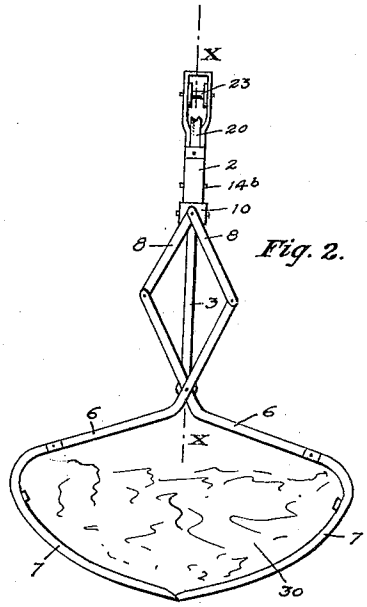


Fig. 2.

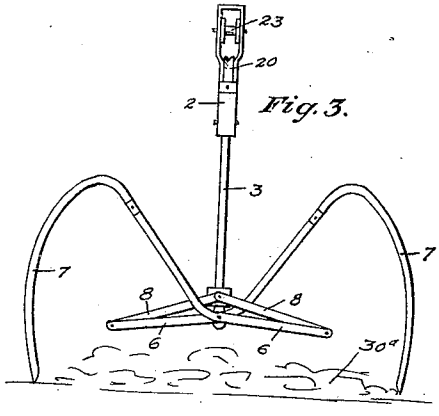


Fig. 3.

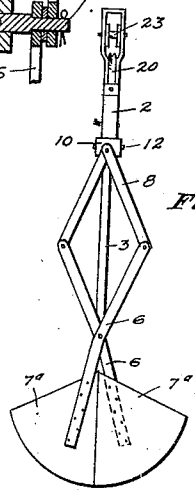


Fig. 4.

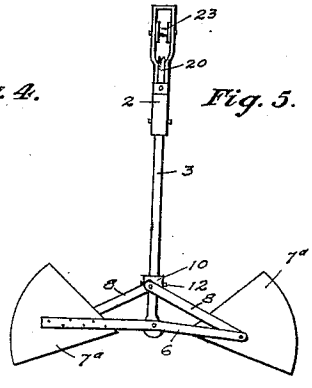


Fig. 5.

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LOAD-RECEIVER FOR HOISTING AND CONVEYING MECHANISMS.

No. 890,163. Specification of Letters Patent. Patented June 9, 1908.

Application filed February 17, 1908. Serial No. 416,273.

To all whom it may concern:

Be it known that we, WILLIAM M. MYERS and GEORGE W. HINTON, citizens of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Load-Receivers for Hoisting and Conveying Mechanisms, of which the following is a specification, reference being had therein to the accompanying drawing.

Our invention relates to improvements in load receivers, for hoisting and conveying mechanisms, and the objects of our improvements are, first; to provide a load receiver, which shall be caused to grapple a load, be hoisted and conveyed from its loading point, to a dumping point, and there be caused to dump said load; and be returned to said loading point, and have the speed of said return properly controlled; and in which all of the said operations shall be performed by but one cable: second; to provide adjusting means, by which, the height from the ground, at which said receiver is caused to dump its load, can be adjusted: third; to so construct and arrange the parts of a load receiver, that none of said parts will in any way obstruct the space between the lower extremities of its grapplers, while grappling a load: fourth; to provide a load receiver which shall be neat in appearance, substantial and compact, and be positive in its action. We attain these objects by the mechanism illustrated in the accompanying drawing, in which:—

Figure 1. is a section, cut longitudinally on the line XX, seen in Fig. 2. Fig. 2. is an end elevation of the load receiver, showing the parts in closed position. Fig. 3. is an end elevation, showing the parts in open position. Figs. 4. and 5. show another one of the various forms of grapplers that can be used.

Referring to Fig. 1., the load receiver 1, is composed of the sliding head frame 2, suitably formed to carry certain parts therein, as hereinafter described, and is arranged to travel on two vertical guide rods 3, rigidly secured at their lower ends to the horizontal cross bar 4, provided at its ends with wrists 5, on each of which is pivotally mounted, a pair of crossed levers 6, to the lower end portions of which, are secured the load carrying sections 7, of a hay fork, seen in Fig. 2.; the levers 6, are pivotally attached at their upper ends, to the lower ends of connecting rods 8, which have their upper ends pivotally mounted on wrists 9, one of which projects from each end of the horizontal weight bar 10, provided with two vertical guides 10^a, (see Fig. 1.,) formed therewith, and adapted to bear against the inner surfaces of rods 3, upon which weight bar 10 is adapted to travel; said bar is preferably formed of cast iron and is properly proportioned, and of sufficient weight to operate by gravity, the grappling sections 7, as hereafter described.

In the central portion of bar 10 is formed the mortise 11, in which is secured the pin 12, on which is rotatably mounted the friction roll 13, arranged to be engaged by the hooked end 14^a, of a latch lever 14, pivotally secured in the head frame 2, by pivot 14^b, for detachably connecting weight bar 10 to said head frame. The upper portion of lever 14 is situated between two L levers 15, pivotally mounted in head frame 2, the outer ends of said levers being elastically drawn down in normal position, upon stop studs 16, by springs 15^a; to elastically hold latch hook 14^a, in central, normal position; for engagement with friction roll 13.

Connected with any suitable winding mechanism, (not shown,) and provided with any well known brake device, is the cable 17, adapted to be drawn by said mechanism, in the direction indicated by arrows 17^a, and extending from said winding mechanism over any suitable guide pulleys, (not shown,) and thence over pulley 18, mounted in any suitable tram carriage 19, adapted to travel on any suitable, inclined, overhead track, or cable or cables, (not shown;) cable 17 extends from pulley 18, downward and around pulley 20, rotatably mounted in head frame 2, thence upward, around pulley 21, in said carriage, thence downward through guide aperture 22, in the upper end of head frame 2, and has its free end attached to drum 23, rotatably mounted in the upper end portion of head frame 2; said drum is provided with head 24, in which is formed a plurality of notches 25, normally engaged by the retaining pawl 26, elastically held in said engagement by spring 27, for forming adjusting means for adjusting the length of that part of cable 17 which extends from the upper extremity of head frame 2, to the latch operating shoulder clamp, 28, which is secured on cable 17, thus providing adjusting means for adjusting the height of the dumping point of load receiver 1 from the ground, (not shown,) at which said receiver

is caused to dump its load 30, as hereafter described.

In operation, the adjustment of the dumping point is effected by unwinding and winding cable 17 on drum 23, and securing the same, at the desired length, by pawl 26, after which the winding of cable 17, as described, causes shoulder clamp 28 to pass the upper end of lever 14, and in said passage to rotate said lever on its pivot 14^b, and carry hook 14^a out of engagement with friction roll 13, after which weight bar 10 gravitates from the position seen in Fig. 2, to the position seen in Fig. 3. and drives downward the upper ends of connecting rods 8 which by their pivotal attachment to levers 6, rotate said levers on pivots 5, thereby moving the lower ends of said levers, which carry the load carrying sections 7 from the position seen in Fig. 2., to the position seen in Fig. 3., thereby dumping load 30; after which, when it is desired to grapple and hoist another load the described load receiver, with its parts in the position seen in Fig. 3. is gravitated on to the material 30^a, and the speed of said gravitation is regulated by cable 17, as it is payed out from the brake provided winding mechanism, heretofore mentioned, but not shown; after which head frame 2 is gravitated from the position seen in Fig. 3, and is guided by rods 3, until hook 14^a engages friction roll 13, (seen in Fig. 1.,) which, by the winding of cable 17, lifts weight bar 10, to the position seen in Fig. 2., thereby reversing the heretofore described movement of the grappling or load carrying sections, 7, thereby causing said grapplers to grapple another load 30, of material 30^a; after which continued winding of cable 17, hoists load receiver 1, to an elevated point, under carriage 19, which is detachably held over the described loading point now by parts generally known, and which are therefore neither shown nor described; after said attachment of carriage 19 is detached, continued winding of cable 17, causes carriage 19 to travel upward and along, upon the heretofore mentioned inclined track or cables, to the dumping point, after which the heretofore described operations are repeated.

It will be understood that the load carrying sections 7 are sufficient in number and are properly spaced to handle the various lengths of straw or hay that is ordinarily found, and that a variety of grapplers or load carrying sections for grappling and for carrying different kinds of material can be secured to the lower end portions of levers 6, one of such various forms of sections is shown in Figs. 4 and 5, in which the load receiving sections 7^a, are arranged to form a clam shell scoop.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a load receiver of the class described, a load receiver comprising a pair of relatively movable load carrying sections, adapted to grapple and carry a load and two pairs of crossed levers having their lower end portions secured to said sections, as shown; a cross bar, having one pair of said levers pivotally mounted on each end thereof; two vertical guide rods, having their lower ends secured to said cross bar and the upper end of each rod provided with a collar, secured thereon; in combination with a horizontal weight bar, mounted freely on said vertical rods, and adapted to travel thereon, and be guided thereby, for operating said load receiving sections; connecting rods, pivotally connecting the ends of said weight bar with the upper ends of said levers; a head frame, freely mounted on said vertical rods, and adapted to travel thereon; detachable attaching means, in said head frame, for detachably attaching the same to said weight bar; operating means, for operating said detachable attaching means, and hoisting means for a hoisting cable, by which said load receiver is adapted to be hoisted.

2. In a load receiver of the class described, a head frame; a drum, rotatably mounted in the upper end portion of said frame; a hoisting cable, attached to said drum; a shoulder clamp, secured on said cable; a head for said drum, provided with notches in the periphery thereof; a retaining pawl, adapted to engage said notches, and a spring, for elastically holding said pawl in said engagement; together with a pulley, rotatably mounted in said frame, and around which said cable is passed, and two other pulleys, mounted in a suitable carriage, and over which said cable is carried.

3. In a load receiver of the class described, a head frame; a latch lever, pivotally mounted in said frame and provided with a hook on the lower end thereof; two L shaped levers, pivotally mounted in said head frame, and having their lower ends adapted to elastically press the upper portion of said latch lever, one at opposite sides thereof; two stop studs, secured in said frame, for stopping the downward movement of the outer ends of said L shaped levers, and springs, for normally drawing said outer ends downward upon said stop studs.

In testimony whereof we affix our signatures in the presence of two witnesses.

WILLIAM M. MYERS.
GEORGE W. HINTON.

Witnesses:
RICHARD H. GRAHAM,
VICTOR SCHWIEN.