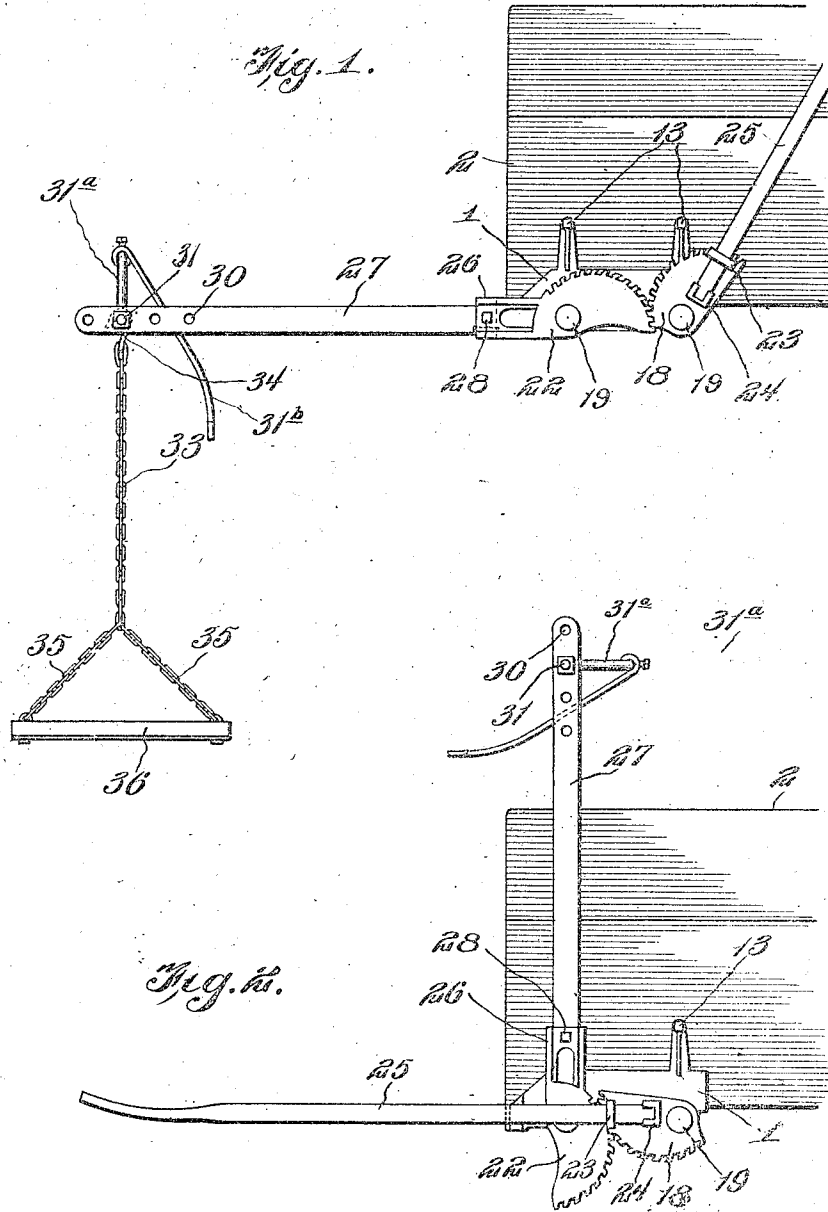


No. 893,491

PATENTED JULY

W. M. HANSEN.
LOADING APPARATUS.
APPLICATION FILED APR. 4, 1908.

2 SHEETS—SHEET 1.



Witnesses.

John R. Hennrichs
C. C. Hines

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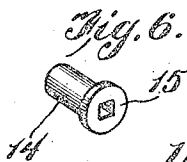
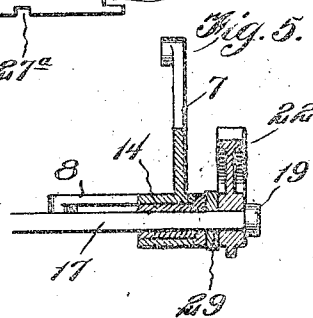
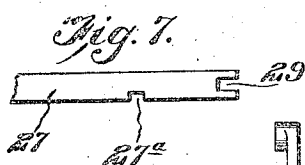
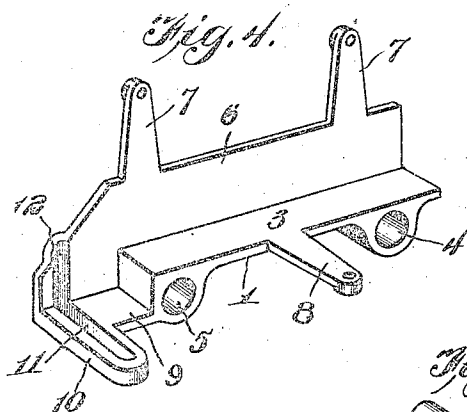
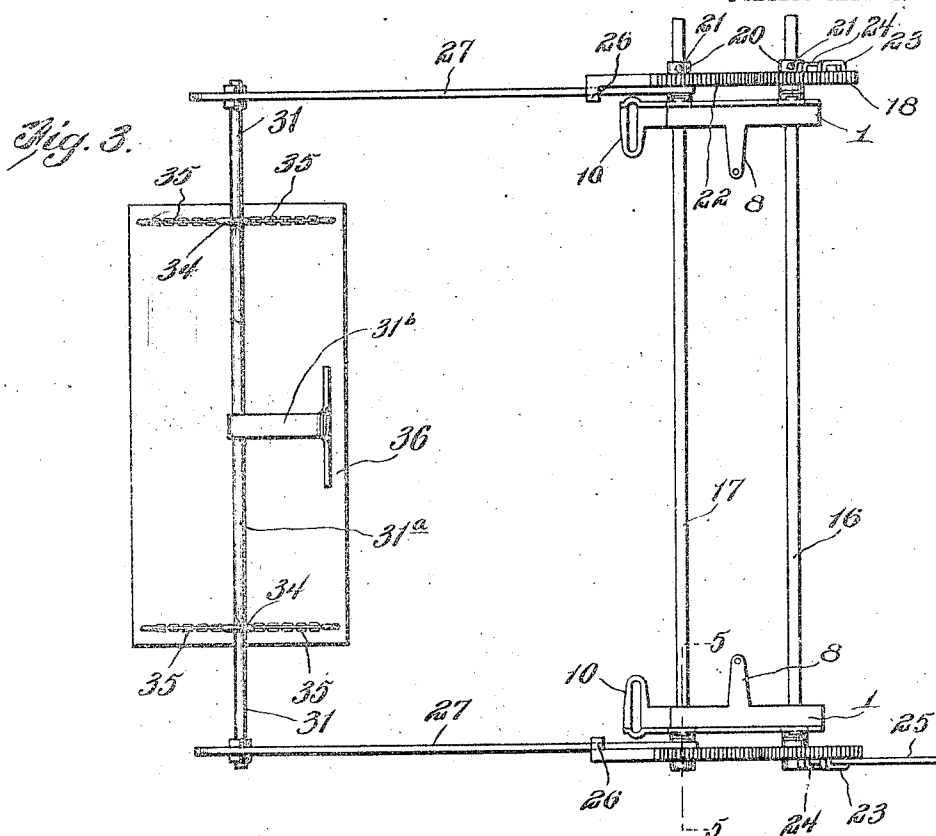
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No. 893,491.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE

WILLIAM M. HANSEN, OF OXFORD, PENNSYLVANIA. -

LOADING APPARATUS.

No. 893,491.

Specification of Letters Patent.

Patented July 14, 1908.

Application filed April 4, 1908. Serial No. 425,225.

To all whom it may concern:

Be it known that I, WILLIAM M. HANSEN, a citizen of the United States, residing at Oxford, in the county of Chester and State of Pennsylvania, have invented new and useful Improvements in Loading Apparatus, of which the following is a specification.

This invention relates to a loading apparatus or attachment for wagons, such as farm wagons and the like, the object of the invention being to provide a simple and inexpensive, and yet powerful, type of apparatus which may be readily applied to existing wagons and operated in an easy and convenient manner for elevating boxes or bags of material, live stock, etc., into the wagon, and which when not in use may be moved to a non-interfering position in which it will be automatically held or locked by its actuating gearing.

A further object of the invention is to provide an apparatus in which provision is made for accommodating objects to be loaded which vary in height, and which is adapted to be firmly secured to the wagon box or bed.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of the device applied to the rear end of a wagon-body with the sling lowered for use. Fig. 2 is a similar view with the sling elevated. Fig. 3 is a top plan view of the device. Fig. 4 is a view of one of the supporting irons or brackets. Fig. 5 is a cross-section on line 5—5 of Fig. 3. Fig. 6 is a detail view of one of the bearing sleeves. Fig. 7 is a detail view of a portion of one of the frame arms.

In carrying my invention into practice, I provide a pair of supporting brackets 1 for attachment to the rear end of the vehicle box or body 2. Each of these brackets consists of a horizontal body portion 3 provided on its underside with tubular bearing bosses 4 and 5 and at its outer side with a vertically extending flange 6 provided with attaching arms 7 perforated at their upper or free ends, the body portion 3 being also provided between said bearings with an inwardly extending attaching arm 8 perforated at its free end. The rear end of the body is de-

pressed to form a supporting shelf 9 disposed in rear of the bearing 5, and this shelf is provided with an elongated portion 10 formed with a groove or recess 11 which is in communication at its outer end with a vertical groove or recess 12 in the rear end of the flange 6.

The body portions of the brackets 1 extend beneath the bottom of the wagon bed, while the flanges 6 bear against the outer faces of the sides of the bed, and the brackets are attached to such portions of the box or bed by bolts 13 passing through the apertured ends of the arms 7 and 8, thus firmly attaching the brackets in position near the rear end of the box or bed, as shown. When the brackets are thus applied the shelves 9 are arranged to receive the rear cross brace of the box and the grooves 11 and 12 the coacting securing bolts and fittings.

Journaled in the front and rear bearings 4 and 5 of the two brackets are bearing sleeves 14, each of which is provided at its outer end with a head 15 to engage the outer face of the bracket and limit the inward movement of said sleeve. The sleeves are provided with angular or non-circular bores for the passage of angular transverse shafts 16 and 17, the shaft 16 being journaled in the front bearings 4 and the shaft 17 in the rear bearings 5 of the two brackets, the angular form of the bores of the sleeves 14 and the corresponding form of the shafts connecting said sleeves to turn with the shaft and to form the journals thereof.

Fitted upon the ends of the shaft 16 are eccentric gears 18 corresponding in form and arrangement, and each having an angular collar or opening for the passage of the shaft, by which the gears are mounted to turn with the shaft. The shaft 16 is provided at one end with a head 19, which holds the adjacent gear from outward movement and the shaft from inward movement, while the opposite end of the shaft corresponds in form to the body thereof for the ready application and removal of the coacting gear, which is provided with a collar 20 secured to the shaft by a set screw 21. By this construction the shaft may be slid longitudinally into engagement with the gears and bearing sleeves from one side until the head 19 bears against the gear 18 at that side, after which by securing the gear at the opposite side by the set screw 21 to the shaft, the parts will be secured to-

gether against relative movement. This construction adapts the shaft and cooperating parts to be readily applied and removed.

The shaft 17 is similar in construction to the shaft 16 and carries at its ends eccentric gears 22 which mesh with the gears 18, said shaft being extended through bearing sleeves 14 of the type described which are journaled in the rear bearings 5 of the brackets. Inasmuch as the gears 22 are mounted and secured to the shaft 17 in the same manner that the gears 18 are mounted and secured to the shaft 16, the securing means of the two sets of gears and shafts are indicated by corresponding reference numerals.

The gears are in the form of quadrants whose curved surfaces are provided with teeth which intermesh and thus connect the two sets of gears for simultaneous movement to rotate the shafts in unison. Each primary or drive gear 18 is provided with a guide 23 and a socket 24 to receive the engaging end of an operating lever 25, whereby motion may be communicated to rock the shaft 16 in reverse directions. By this construction the lever may be connected with the gear 18 at either side of the vehicle body for use and removed after use.

Each gear 22 is provided with a guide loop or socket 26 for connection with and passage of the inner end of an arm or bar 27, which is secured thereto by a bolt or set-screw 28 and is formed at its inner end with an angular notch 29 to receive and engage the shaft 17, by which it is positively connected with the shaft and gear to swing in reverse directions therewith. The bar may also be formed with a notch 27^a to receive and engage the lower wall of the guide loop 26. The outer ends of the arms or bars 27 are each provided with a series of openings 30 for the reception of the ends of a cross rod or bar 31 which are threaded for the reception of securing nuts 32. The shaft 17, arms 27 and rod 31 form a swinging frame operated by the gearing from the shaft 16, and adapted in operation to swing from the horizontal position shown in Fig. 1, in rear of the body 2, to the vertical position shown in Fig. 2, in which the arms 27 project above the sides of the body, while the rod 31 extends across the body at a point in advance of the rear end thereof.

From the rod 31 is suspended a suitable sling for supporting the article which is to be loaded into the wagon. The sling shown in the present instance comprises a pair of hanger chains 33 provided at their upper ends with hooks 34 to detachably engage the rod and connected at their lower ends by diverging branch chains 35 to the front and rear edges of the opposite ends of a board or platform 36, on which the article is rested. When the sling frame is arranged in the position shown in Fig. 1 for operation, the sling depends from the rod 31 to a point in close

proximity to the ground to enable the article to be loaded to be conveniently placed thereon, after which by swinging the lever 25 rearwardly the frame may be elevated to the position shown in Fig. 2 to swing the sling into the rear end of the wagon body, so as to allow the article to be readily removed and placed at a suitable point within the body for transportation. A brace 31^b is fixed to and depends from the center of the rod 31 to stay and support the upper end of a bag or the like resting on the platform.

The form of sling shown is especially designed for supporting and elevating boxes, bags of flour, potatoes, and other articles and substances, barrels and the like, and in order to provide for the convenient arrangement thereon of articles of considerable length or height, the intermediate portion of the rod 31 is arched, as at 31^a, to permit the upper end of the bag or article to extend above the line of the ends of the rod, so that articles varying considerably in height may be readily applied and accommodated. The hooks 34 bear against the shoulders formed by the ends of the arched portion, and thus are prevented from slipping inwardly relative to one another. Other forms of slings may be employed, however, for hoisting live stock and other kinds of loads into the wagon which cannot be conveniently handled by the type of sling shown.

It will be seen by reference to Fig. 1 that when the device is in position for loading, the toothed portion of the gears 18 nearest their fulcrum are in engagement with the toothed portions of the gears 22 farthest from their fulcrum, so that upon the rearward movement of the lever 25 a high degree of leverage or power will be secured to elevate the load, thus providing for its convenient elevation between those points in its arc of movement in which it opposes the greatest resistance, and that the leverage gradually decreases as the resistance of the load decreases on the remaining portion of the arc of movement, so that articles of considerable weight may be controlled and hoisted with comparative ease, the construction of the gearing being also such that the same power is applied to both sides of the swinging frame to equalize the amount of power and strain upon both sides of the apparatus, thus preventing any excess weight or strain from being thrown upon either side of the vehicle bed. When the outer end of the swinging frame reaches the elevated position shown in Fig. 2, the reverse ends of the sets of gears will be in engagement, thus automatically locking the device in its elevated position, in which it may be allowed to remain after the vehicle is loaded. In such position the frame is folded out of the way so that it will not project unduly from the wagon or interfere with the proper disposition of the parts.

of the load therein. After the article is loaded, the lever 25 is disconnected from the gear 18 to which it is applied and may be stored in the wagon until its further use is required.

From the foregoing description, it will be seen that my invention provides a simple and inexpensive type of loading appliance which may be readily applied for use upon farm and other wagons and operated in an easy and efficient manner to elevate loads of considerable weight into the vehicle box or body. The type of operating gearing shown is preferred, although it will be readily understood that any other equivalent type of gearing falling within the scope of the invention as defined in the appended claims may be employed.

Having thus fully described the invention, what is claimed as new is:—

1. In a loading apparatus for vehicles, the combination with a vehicle body, of brackets applied to the opposite sides of the vehicle body, shafts journaled in said brackets and extending transversely beneath the body, gearing between said shafts, means for operating one of the shafts for transferring motion to the other, and a swinging frame carried by the latter named shaft, said frame being adapted to move in an arc from a point in rear of to a point above the end of the body.

2. In a loading apparatus for vehicles, the combination with a vehicle body, of brackets applied to opposite sides of the vehicle body, shafts journaled in said brackets, intermeshing eccentric gears carried by the shafts, means applicable to one of said gears for transferring motion to one shaft and from the latter to the other shaft, a swinging frame connected with the latter named shaft, said frame including a cross piece at its outer end, and a hoisting sling adapted to be suspended from said cross piece.

3. In a loading apparatus for vehicles, the combination with a vehicle body, of brackets secured to the opposite sides of the body, shafts journaled in said brackets, intermeshing gears upon the opposite ends of the shafts, a lever adapted for connection with one of the gears upon the forward shaft for rocking said shafts in unison, and a swinging frame connected with the rear shaft for operation thereby.

4. A loading apparatus for vehicles comprising bearing brackets, front and rear transverse shafts journaled in said brackets, gearing between the shafts, means for rocking the front shaft, and a swinging frame carried by the rear shaft.

5. A loading apparatus for vehicles comprising bearing brackets, front and rear transverse shafts journaled in the brackets, gearing between the opposite ends of the shafts, a power device for manually rocking the forward shaft, and a swinging frame carried by the rear shaft, said frame including a cross-bar arched or offset between its ends.

6. A loading apparatus for vehicles comprising bearing brackets, front and rear transverse shafts journaled therein, intermeshing eccentric gears upon the ends of the shafts, a power device adapted to be applied to one of the gears upon the front shaft, a swinging frame carried by the rear shaft, and a sling adapted to be supported by said frame.

7. A loading apparatus for vehicles comprising bearing brackets, bearing sleeves journaled in said brackets and having angular bores, angular shafts extending through said sleeves, intermeshing gears upon the opposite ends of said shafts and having angular openings for the passage of the shafts, means upon the opposite ends of the shafts for holding the same from longitudinal movement and retaining the gears in position, a power appliance adapted to be connected with one of the gears of one shaft, a swinging frame connected with the other shaft, and a sling adapted to be connected with said frame.

8. A loading apparatus for vehicles comprising supporting brackets, front and rear transverse shafts journaled therein, gearing between said shafts, means for manually operating one of the shafts, a swinging frame comprising arms carried by the other shaft and a cross-bar connecting the outer ends of said arms, and a sling adapted to be suspended from said cross-bar.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM M. HANSEN.

Witnesses:

W. B. WALES,
JESSE FUGH.