No. 791,478. PATENTED JUNE 6, 1905.

T. J. LOWER.

LOADING APPARATUS.

APPLICATION FILED SEPT. 30, 1904.

2 SHEETS—SHEET 1.

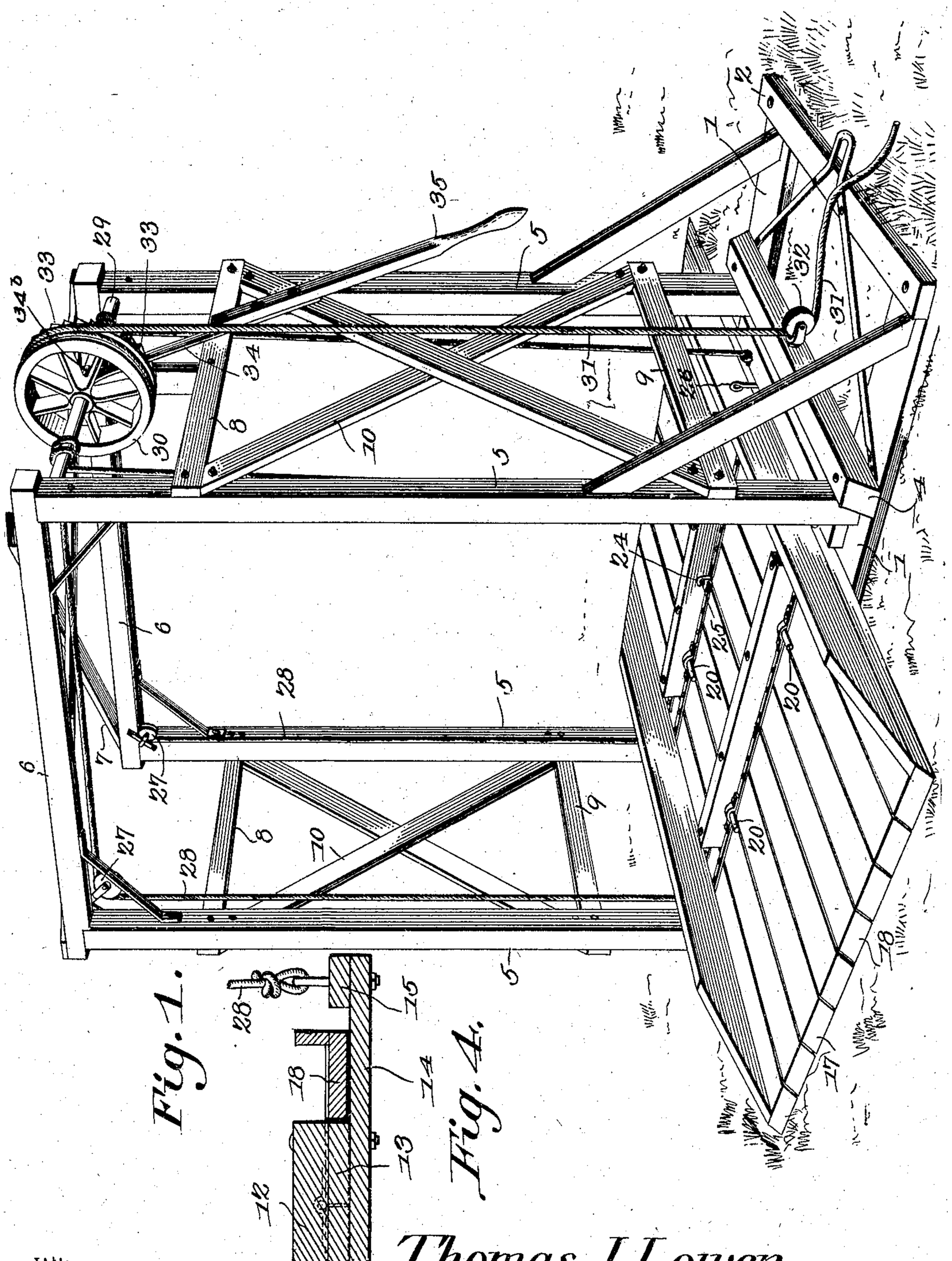


Fig. 1.

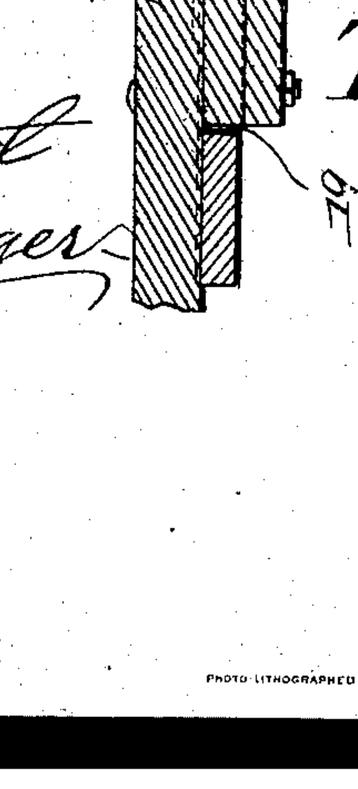


Fig. 4.

Witnesses

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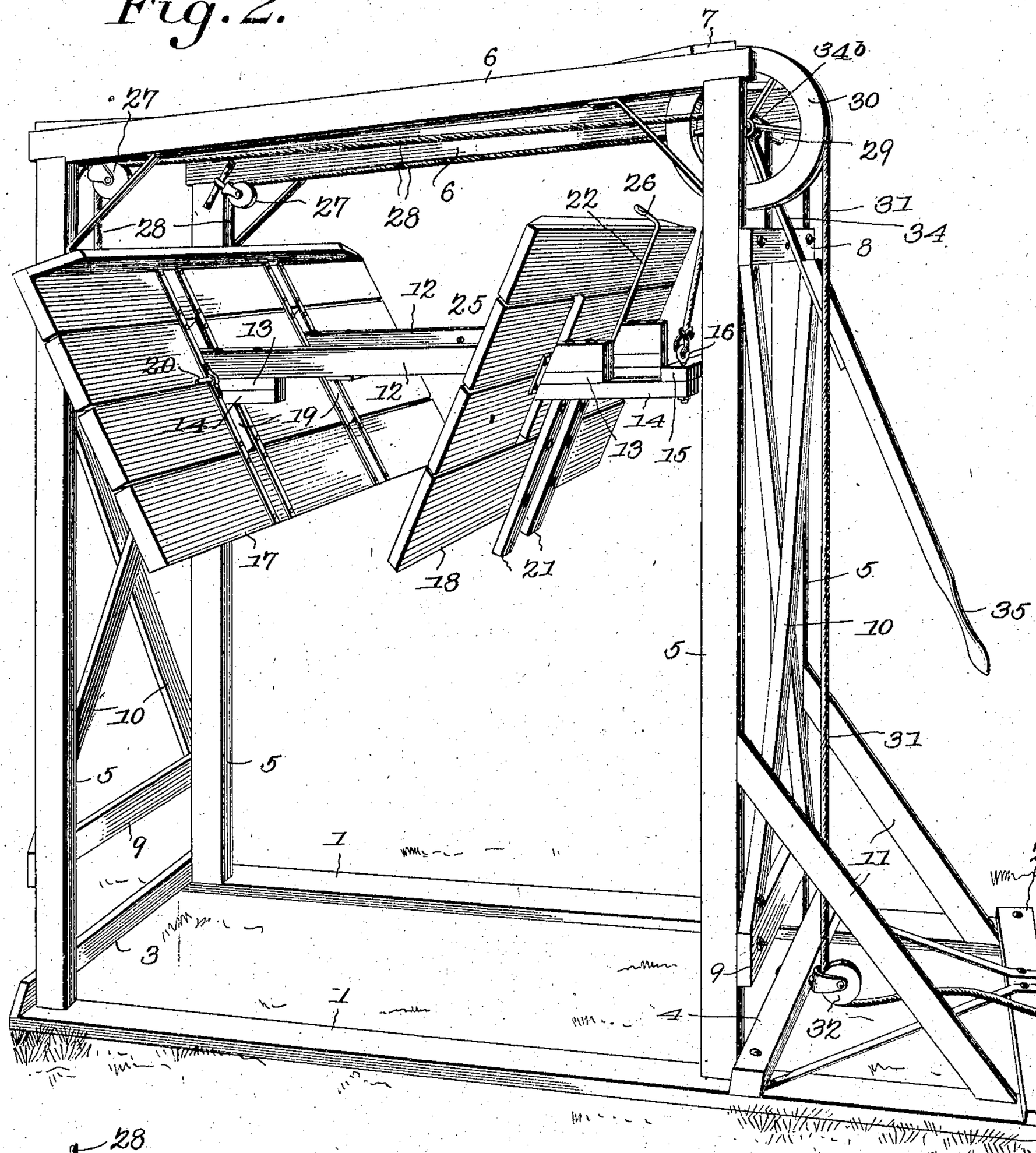
2 SHEETS—SHEET 2.

*Fig. 2.*



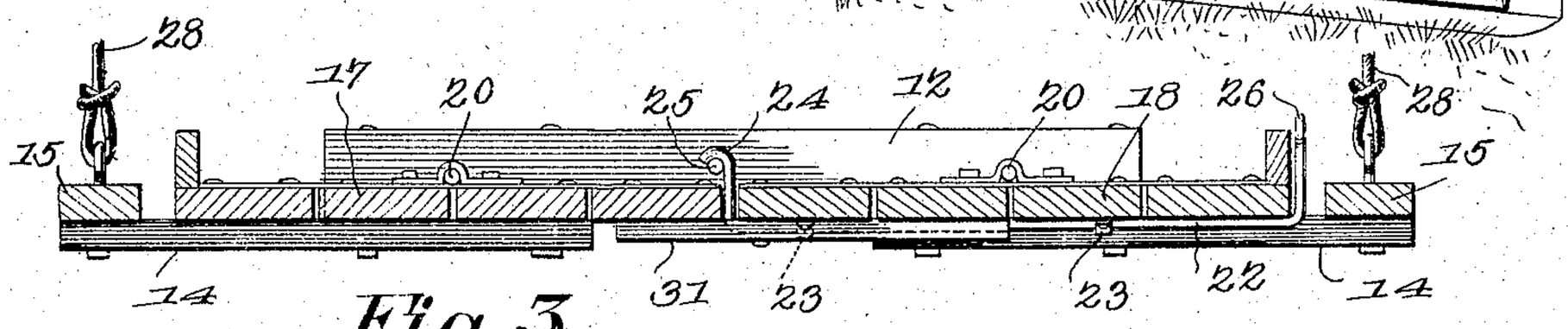




*Fig. 3.*

Witnesses

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No. 791,478. Patented June 6, 1905.

# UNITED STATES PATENT OFFICE.

THOMAS J. LOWER, OF NORTH ENGLISH, IOWA.

## LOADING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 791,478, dated June 6, 1905.

Application filed September 30, 1904. Serial No. 226,708.

*To all whom it may concern:*

Be it known that I, THOMAS J. LOWER, a citizen of the United States, residing at North English, in the county of Iowa and State of Iowa, have invented a new and useful Loading Apparatus, of which the following is a specification.

This invention relates to machines or devices for elevating and dumping material—such as dirt, manure, and the like—in the act of loading the same into wagons or other receptacles; and it has for its object to simplify the construction and to improve the operation of devices of this character.

With these ends in view the invention consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that the right is reserved to any changes, alterations, and modifications to which recourse may be had within the scope of the invention when the same may be resorted to without departing from the spirit or sacrificing the efficiency of the device.

In said drawings, Figure 1 is a perspective view showing the device in position to be loaded. Fig. 2 is a perspective view showing the device in dumping position. Fig. 3 is a transverse sectional view taken through the dumping-platform. Fig. 4 is a sectional detail view.

Corresponding parts in the several figures are indicated by like characters of reference.

The device is preferably supported upon a pair of sills or runners 1 1, which have been shown as being connected at their front and rear ends by cross-pieces 2 3 and also connected by an intermediate brace 4. Supported upon the sills, adjacent to the cross pieces or braces 3 and 4, are uprights 5 5, connected at their upper ends in pairs by longitudinal cap-beams 6 6, which in general are connected by diagonal cross-braces 7. The uprights 5 5 at the front and rear ends of the frame are connected in pairs by means of cross-pieces 8 and 9 near their upper and lower ends, respectively, diagonal braces 10 being provided to reinforce the structure. Inclined braces 11 also connect the front uprights 5 with the front ends of the sills.

It is desired to be distinctly understood that while the foregoing construction of the frame structure is simple and in a general way to be preferred the said frame structure may be greatly varied according to the intended uses of the device. The structure exhibited in the accompanying drawings is specially intended and adapted for general use upon the farm—for instance, for the purpose of loading manure and like material. When the device is to be used for heavier work—such as, for instance, on excavations where large quantities of dirt are to be moved—the frame structure may be materially changed in order to adapt it for such special use and yet be within the scope of the invention.

Vertically movable in the frame structure of the device is a dumping-platform. The framework of said platform includes a pair of parallel beams 12 12, to the under sides of which, at the ends thereof, are secured filling-blocks 13 and brackets 14, which latter are longitudinal extensions of the beams 12. Said filling-blocks and brackets are securely bolted to or otherwise connected with the respective beams, and the ends of the brackets are connected in pairs by means of cross-pieces 15, the connecting means being shown as consisting of eyebolts 16.

The body of the dumping-platform is composed of two leaves 17 18, each provided with slots 19, straddling the beams 12, with which the said leaves are pivotally connected by means of pintles 20. Said pintles are journaled between the under sides of the beams 12 and the upper sides of the filling-blocks 13, the slots 19 being of a length which will permit the leaves of the platform to fold against the under sides of the beams 12, the outer edges of the leaves being supported upon the extension-brackets 14 and the slots 19 being occupied by the filling-blocks 13, which are made of a thickness equal to the thickness of the leaves.

The leaf or member 18 of the dumping-platform is shown as provided with cleats 21, extending from the free edge thereof and serving when the leaves are folded to support the under side of the free edge of the companion leaf 17. For the purpose of supporting the leaves in closed relation the leaf 18 is provided on its under side with a rock-shaft 22, journaled in bearings 23 and terminating at its inner end in a hook 24, adapted to engage a pin 25, extending inwardly upon one of the beams 12. The outer end of the rock-shaft 22 terminates in a handle 26, whereby it may be conveniently manipulated. It is to be understood that each of the leaves of the dumping-platform is to be almost evenly balanced, the preponderance of weight being at their outer edges, so that when unloaded the tendency of said leaves will be to shut or fold together automatically, when they may be readily secured against premature tilting by the means just described.

The upper ends of the front uprights 5 5 of the frame are provided with bearings in which is journaled a winding drum or shaft 29. At the upper ends of the rear uprights of the frame are supported sheaves 27. Ropes or flexible connecting elements 28 are made fast to the four corners of the dumping-platform by means of the eyebolts 16, and the said hoisting elements which are connected with the front corners of the platform are extended direct to the shaft or winding-drum and are made fast thereto, while the hoisting elements which are connected with the rear corners of the platform are guided over the sheaves 27 and likewise made fast to the winding-drum. The latter carries a sheave 30, upon which is wound a rope or cable 31, which is guided in any suitable manner to a point where draft may be applied thereto, a single guiding-pulley 32 having been shown in the drawings. It is obvious that any convenient power may be utilized for operating the device and that with regard thereto no limitations are made. For the purpose of retaining the load in elevated position previous to dumping the same the sheave 30 is provided on one side thereof with ratchet-teeth 33, adapted to be engaged by one edge of a lever member 34, which has been shown as being fulcrumed upon the cross-bar 8 and provided with a handle 35. Said lever is provided with an extension engaging the ratchet-teeth of the sheave 30, and said extension has been shown as terminating in an eye $34^b$, loosely engaging the shaft 29, which will thus assist in supporting the strain of the ratchet-teeth upon the lever extension. This lever, it will be seen, may be conveniently manipulated to place it in engagement with the ratchet-teeth of the sheave 30, thus temporarily preventing the rotation of the shaft 29.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention may be readily understood by those skilled in the art to which it appertains. When the dumping platform is in the lowered position, (illustrated in Fig. 1 of the drawings,) the material which is to be loaded may be easily and quickly piled thereon by means of scrapers or otherwise until a load has been accumulated. Draft is then applied to the hoisting element 31, thus unwinding said hoisting element from the sheave 30, thereby rotating the shaft or winding-drum and winding upon the latter the hoisting elements 28, whereby the platform is elevated to the desired height. The wagon or other receptacle to be loaded is now driven under the platform, and when it is in position the hook or locking member 24 is released, when the weight of the load will cause the leaves of the platform to tilt, as shown in Fig. 2, thus discharging the load. When freed from the load, the leaves of the platform will return to their folded position, where they are secured by restoring the locking device to engaged position, after which the platform may be suffered to descend by gravity. If for any reason the leaves of the platform should fail to fold automatically, they will do so by contact with the ground when the platform is lowered.

Having thus described the invention, what is claimed is—

1. In a device of the class described, a rectangular supporting-frame, a dumping-platform vertically movable in said frame, a winding-shaft journaled in the frame, suitably-guided hoisting elements connecting said shaft with the frame of the dumping-platform, a sheave upon said shaft, a hoisting element wound upon said sheave and guided to the point of attachment of draft, ratchet-teeth upon the sheave, and a suitably-supported lever engaging said ratchet-teeth.

2. In a device of the class described, a rectangular supporting-frame, a dumping-platform vertically movable in said frame, a winding-shaft journaled in the frame, suitably-guided hoisting elements connecting said shaft with the frame of the dumping-platform, a sheave upon said shaft, a hoisting element wound upon said sheave and guided to the point of attachment of draft, ratchet-teeth upon said sheave, a suitably-supported lever having at one end a handle and at the other end an extension engaging the ratchet-teeth of the sheave, and an eye upon said lever extension loosely engaging the winding-shaft.

3. In a device of the class described, a dumping-platform including a tilting leaf having a slot therein, and a supporting-beam extending through said slot and pivotally supporting the leaf.

4. A dumping-platform including a frame-beam supported for vertical movement, a tilting leaf having a slot engaging the frame-beam, and pivotal connecting means.

5. A dumping-platform including a frame supported for vertical movement, said frame having parallel side beams, and tilting leaves having slots engaging said side beams and pivotally connected therewith.

6. A dumping-platform including a frame supported for vertical movement, said frame having parallel side beams, filling-blocks secured to the ends of said side beams, and brackets connected with and extending from said filling-blocks and side beams, leaves having slots engaging the side members of the frame, and pivotal connecting means.

7. In a dumping-platform, a frame supported for vertical movement, said frame including parallel side beams, filling-blocks secured to the under sides of said beams at the ends thereof, and brackets secured to the under sides of and extending from said filling-blocks to form longitudinal extensions of the side beams, in combination with tilting beams having slots engaging the side beams, filling-blocks and brackets, and pivotal connecting means.

8. In a device of the class described, a rectangular supporting-frame, sheaves at the upper corners of said frame, a dumping-platform including a frame vertically movable in the supporting-frame, said frame comprising side pieces and end pieces connected by eyebolts at the corners thereof, and tilting leaves having slots engaging and pivotally connected with the side pieces of the frame, a winding-shaft, flexible hoisting elements connecting the eyebolts at the corners of the frame of the dumping-platform with the winding-shaft, said elements being guided over the sheaves at the corners of the supporting-frame, and means for operating the winding-shaft.

9. In a device of the class described, a dumping-platform including a frame composed of suitably-connected side members, and tilting leaves having slots engaging and pivotally connected with said side members, one of said leaves being provided with cleats extending under and supporting the opposite leaf, and means for retaining said leaves in relatively closed or folded position.

10. In a device of the class described, a dumping-platform supported for vertical movement, said platform including a frame having suitably-connected side beams and tilting leaves having slots engaging said side beams and pivotally connected therewith, a rock-shaft connected with one of the leaves and having a terminal hook at one end and a handle at its opposite end, a pin member extending from one of the frame-bars for engagement with the hook of the rock-shaft, and cleats extending from the leaf having the rock-shaft in the direction of the opposite leaf which is thereby supported.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS J. LOWER.

Witnesses:
JAMES D. BUTLER, Jr.,
G. D. MILLER.