

H. A. WORKHOVEN & J. L. BOUMA.

DUMP AND SAFETY LOCK THEREFOR.

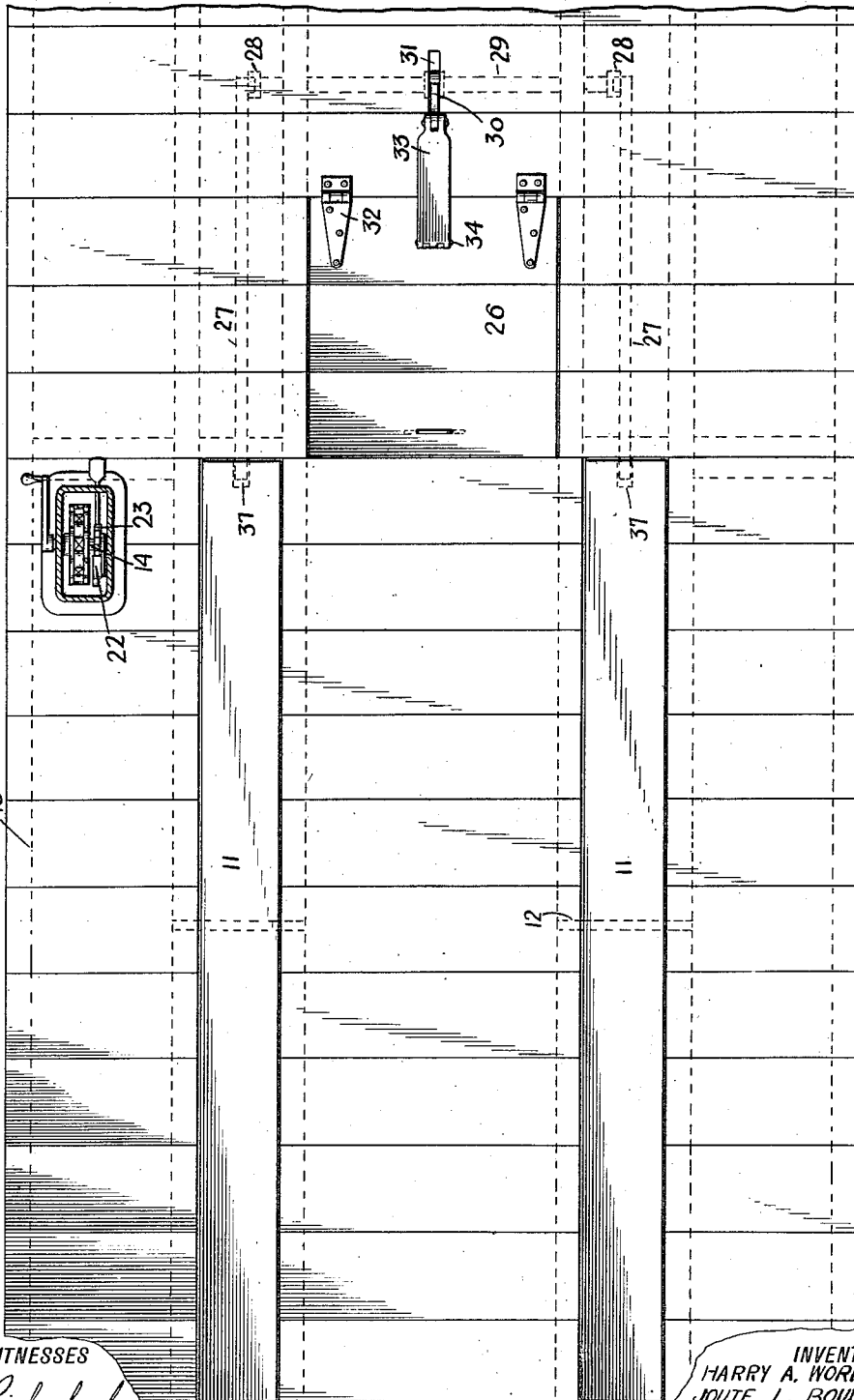
APPLICATION FILED NOV. 22, 1912.

Patented Apr. 29, 1913.

2 SHEETS-SHEET 1.

1,060,525.

Fig. 1.



WITNESSES

C. H. Richenbach.
J. P. Davis

INVENTORS
HARRY A. WORKHOVEN,
JOSE L. BOUMA,
BY *M. M. Co.*

ATTORNEYS

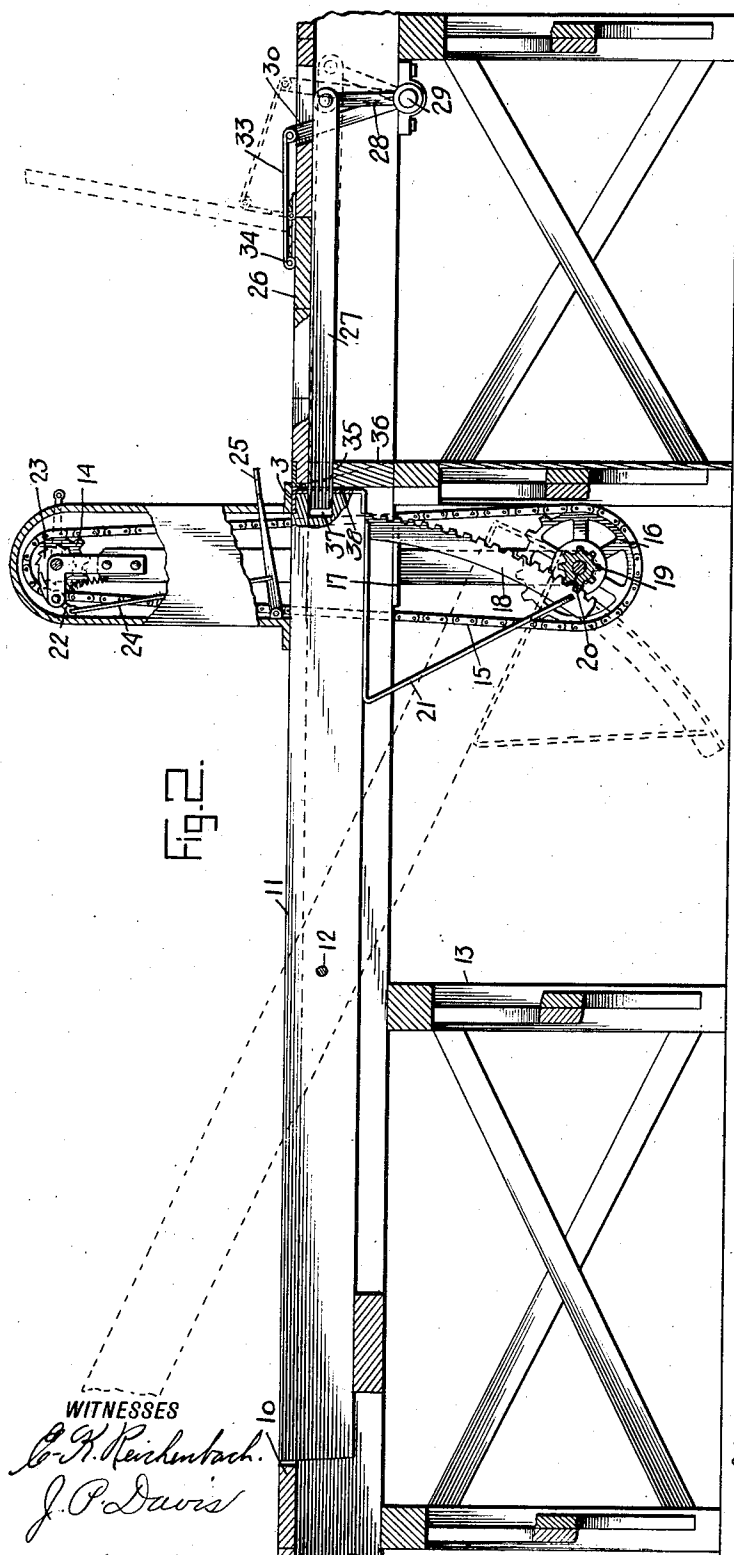
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UNITED STATES PATENT OFFICE.

HARRY A. WORKHOVEN AND JOUTE L. BOUMA, OF ORANGE CITY, IOWA.

DUMP AND SAFETY-LOCK THEREFOR.

1,060,525.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed November 22, 1912. Serial No. 732,873.

To all whom it may concern:

Be it known that we, HARRY A. WORKHOVEN and JOUTE L. BOUMA, citizens of the United States, and residents of Orange City, 5 in the county of Sioux and State of Iowa, have invented a new and Improved Dump and Safety-Lock Therefor, of which the following is a full, clear, and exact description.

10 Our invention relates more particularly to elevator dumps, and especially to that class of dumps employing rockable timbers in connection with a dump platform, the timbers being spaced to receive the wheels 15 of a wagon, and to drop under the weight of the load.

An object of our invention is to provide an improved safety lock in connection with the timbers of the dump, so arranged that 20 the trap door of the platform through which the grain or other commodity is dumped will be caused to operate the lock devices, the arrangement being such that the closing of the trap door will automatically lock the 25 timbers against tilting movement, whereby the timbers will be unlocked only when the door is in the open position, and constituting a barrier to a team approaching the timbers. Thus a wagon cannot pass onto 30 the timbers until the door is in a closed position, and the timbers cannot tilt until the door has been opened after the wagon has passed onto the timbers.

A further object of the invention is to so 35 dispose the locking bolts constituting part of the locking device, and to so dispose the same at points immediately adjacent the ends of the timbers to be engaged by the bolts, that firm support will be afforded to 40 the bolts, and to the timbers when locked thereto.

The invention will be more particularly explained in the specific description herein-after to be given.

45 Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the views.

50 Figure 1 is a plan view of a dump having our improved safety lock applied thereto; and Fig. 2 is a side elevation with parts in section.

55 The invention is applicable to any ordinary dump having a platform 10, and timbers 11 spaced a proper distance to receive

the wheels of a wagon, and mounted to rock on pivots 12 as usual, the platform being supported on a suitable structure 13. We have shown a known means for raising the 60 rockable timbers after they have been depressed, said means consisting of a windlass 14, operating a sprocket chain 15 that passes around a sprocket wheel 16 suitably supported in hangers 17. Toothed sectors 18, 65 in practice, mesh with pinions 19 on the shaft 20 of the sprocket wheel 16, the sectors being suitably supported at the under side of the rockable timbers 11, as by brackets 21. Suitable controlling devices for the windlass 70 are provided, such as a pawl 22 engaging a ratchet wheel 23 on the windlass, and connecting by a rod 24 with a treadle 25. The mentioned parts not forming elements of the present invention need not be further 75 described, as they may be of any known form and arrangement.

In connection with the timbers 11, we provide a safety locking means, controlled by the movements of a trap door 26, 80 through which the material is to be dumped. In carrying out our invention we provide longitudinal bolts 27, each of which is pivotally connected at its one end to a rocker arm 28 on a rock shaft 29 suitably mounted 85 on adjacent elements of the supporting structure 13 of the platform 10 below the trap door 26. Between the rocker arms 28 the rock shaft 29 is provided with a third rocker arm 30, which extends upward 90 through an opening 31 in the platform 10, adjacent to the hinge 32 of the door 26. The opposite end of the rocker arm 30 is pivotally connected to a link 33 which has pivotal connection also as at 34, with the 95 upper side of the door 26, to fold down on the latter when the door is closed. The free ends of the lock bolts 27 have sliding movement in openings 35 in an element or elements 36 forming part of the supporting 100 structure 13 of the platform, said elements being located immediately adjacent to the timbers 11, when the latter are in the raised position flush with the platform 10. In the ends of each timber 11, a hole or recess 37, 105 is formed, which when the timbers are raised will aline with the holes 35 in the elements 36 and with the bolts 27. Desirably for wear and strength, the end of each timber 11 is provided with a metallic cap 110 38, which is in alinement with the recess 37 of the timbers.

With the described construction, the door 26, when in the raised position as indicated in dotted lines (Fig. 2) will constitute a barrier to the approach of a team in the direction of the timbers 11, and the raising of the door will, through the medium of the link 33, rocker arm 30, rock shaft 29 and rocker arms 28, withdraw the bolts from engagement with the ends of the timbers 11. With the door in the lowered position, as shown in full lines in Fig. 2, it will be seen that the bolts 27 enter the recesses in the timbers and firmly lock the latter against movement, so that the lowered position of the door 26, to permit a team to approach the timbers, will insure the locking of the timbers against rocking movement until the team has passed onto the platform to a position to run the wheels onto the timbers; in this way the door must be deliberately raised after the load has been run onto the timbers before the latter can tilt to dump the load.

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

A dump, and safety lock therefor, having the following elements in combination, to wit: a platform having a supporting structure at the under side, timbers spaced to receive wagon wheels and mounted to rock vertically from a position approximately flush with the platform to a dumping position under the weight of a load, means for raising the timbers after rocking, a trap door forming part of the platform adjacent to the front ends of the timbers and hinged to swing upward to an open position, constituting a barrier to the approach to the

timbers, and a safety lock for the timbers, said lock consisting of elongated bolts ranging longitudinally beneath the platform in alinement with the rocking timbers, the supporting structure of the mentioned platform having elements beneath the platform formed with bolt holes in which the bolt ends have sliding movement and through which the bolts may be projected, the said elements of the supporting structure being located directly adjacent to the ends of the rockable timbers, and the said timbers having recesses in alinement with the bolt holes in the said elements, a transverse rock shaft beneath the platform at the opposite ends of the bolts, rocker arms on said shaft having pivotal connection with the adjacent ends of the bolts, an additional rocker arm on the said rock shaft at a point between the first mentioned arms, the platform having an opening therein adjacent to the hinged end of the door through which opening the last mentioned rocker arm extends upwardly, and a link pivotally connected at one end with the upwardly projecting rocker arm and pivotally connected at its opposite end with the trap door, adjacent to the hinged end thereof, to lie on the upper side of the door when the latter is closed.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HARRY A. WORKHOVEN.
JOUTE L. BOUMA.

Witnesses:

HERMAN TOERINS,
TONY DE HAAS.