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SILAGE HANDLING APPARATUS.

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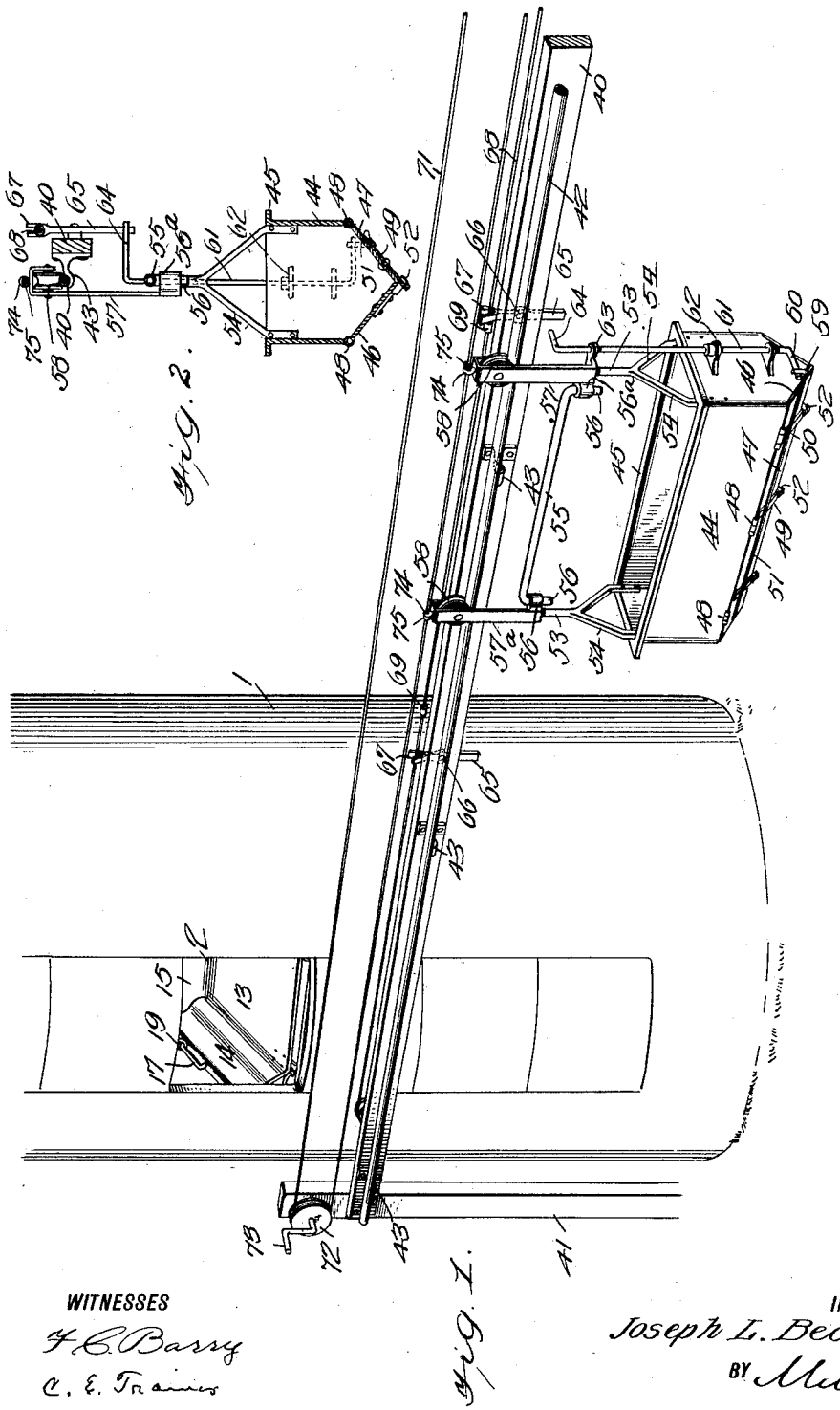


Fig. 2.

Fig. 1.

WITNESSES

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SILAGE-HANDLING APPARATUS.

1,113,738. Specification of Letters Patent. **Patented Oct. 13, 1914.**

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To all whom it may concern:

Be it known that I, JOSEPH L. BEANE, a citizen of the United States, and a resident of Legrand, in the county of Marshall and State of Iowa, have invented a new and useful Improvement in Silage-Handling Apparatus, of which the following is a specification.

My invention is an improvement in silage handling apparatus, and has for its object the provision of simple inexpensive mechanism of the character specified, capable of installation in connection with any silo, wherein a carrier is arranged to travel from the silo to the place of disposal, and wherein the carrier is arranged in such manner that the load may be dumped whenever desired, and wherein tripping mechanism is provided for operating the dumping mechanism of the carrier, the said mechanism being so arranged that it may be operated to dump the carrier at any desired point.

In the drawings: Figure 1 is a perspective view of the improved handling device in place at the silo, and Fig. 2 is a transverse vertical section of the carrier.

In the present embodiment of the invention, a silo 1 is shown having a window opening 2, through which the feed is passed from the silo to the carrier. Ensilage is lifted to the door opening by means of a holder 13 having side walls 14 and an end wall 15, and provided with keeper brackets 17, for engagement by the lifting mechanism, not shown, the said mechanism being connected with the keeper brackets. By means of the holder the ensilage is lifted to the door opening and dumped into the carrier to be described.

The carrier support consists of a guard rail 40, supported by standards or uprights 41, one of which is arranged adjacent to the window opening of the silo. A track or rail 42 in the shape of a rod is supported alongside the guard rail 40 and in spaced relation with respect thereto by means of laterally extending arms 43 on the guard rail, the said arms being arranged at suitable intervals to properly support the track. Each of the said arms engages beneath the rail so that the grooved wheels of the carrier may run freely upon the said rail.

The carrier 44 is rectangular in cross section, having an open top, and the edges of the sides and ends are flanged laterally outward as shown at 45 to strengthen the same. The ends of the carrier are of greater depth than the sides, and that portion of the ends extending beyond the lower edges of the sides is beveled in opposite directions, as shown at 46. A door 47 is hinged to the lower edge of each of the sides and the said doors close against the beveled ends as shown. Each door is hinged to the adjacent side by means of hinges 48, and they are held closed by a latch mechanism comprising a plurality of latch levers 49 on one door pivoted to the door intermediate their ends as shown at 50, and the upper ends of the levers are connected by a link 51, the said link being pivoted to the upper end of each lever. The opposite door is provided with a catch 52 for each lever, the said catch engaging the lower end of the lever and holding the doors closed against the beveled lower ends of the carrier.

The carrier is supported from the track 42 by means of yokes, each yoke comprising a body 53 and arms 54, the arms being connected at their ends to the ends of the carrier on the inner faces thereof. The bodies of the yokes are connected by a bar 55, having at each end a lug 56 for engaging a bearing 56^a on a bracket 57, to be described.

A bracket 57 is connected to the upper end of each yoke body, and a grooved wheel 58 is journaled in each bracket, each of the said wheels engaging the track 42. The carrier is thus suspended from the track and the carrier is moved by operating mechanism to be later described, from the silo to the place of disposal and from the place of disposal to the silo.

The link 51 before mentioned, is provided at its outer end with an angular lug 59, and the said lug is in position for engagement by the angular portion 60 of a shaft 61, journaled in bearing lugs 62 on the adjacent end of the carrier and in a bearing lug 63 on the adjacent bearing 56^a of the connecting bar 55. The upper end of the shaft is also provided with an angular portion 64, extending in the opposite direction from the portion 60 and adapted for engagement with tripping mechanism to be described, to oscillate the shaft 61, to move the link 51 longitudinally to release the latch levers 49 from the catches 52.

Each of the tripping mechanism, (and they are arranged at the different points

where it is desired to dump the feed, as for instance, one at each manger, or other place of disposal for the feed) comprises a lever 65 pivoted intermediate its ends at 66 to the guide bar 40 and having at its upper end a fork 67. The arms of the fork extend on opposite sides of a cord or wire 68, supported in any suitable manner for longitudinal movement, and arranged to be moved by the operator at the silo.

The cord or cable 68 is provided at suitable intervals with stops 69, the said stops being in the form of enlargements on the cord or wire, and the said stops 69 are adapted to engage the arms of the forks 67 to hold the levers 65 in vertical position, so that when the lower end of the said lever (which is in position to be engaged by the angular portion 64 of the shaft 61) engages the angular portion 64 of the shaft 61, the shaft will be oscillated to move the link 51 in a direction to swing the lower ends of the levers 49 out of engagement with the catches 62.

As before stated, the trip levers 65 are arranged one at each place of disposal of the silage and normally when the carrier passes one of the said trip levers, the portion 64 of the shaft 61 will engage and swing the trip lever, without moving the shaft 61 to disengage the door. When however it is desired to dump the carrier, the cord or wire 68 is moved into such position that the stop 69 will engage the fork 67 of the lever as shown at the right of Fig. 1 to hold the said trip lever in rigid vertical position against movement by the angular portion 64 of the shaft 61. When the trip lever is so held the shaft 61 will be oscillated to release the latch levers 49 from the catches 52, thus causing the load in the carrier to open the doors and deliver itself where desired.

The carrier is moved by means of a flexible member 71, a cord or wire, mounted upon a grooved wheel 72 adjacent to the silo, the said wheel being journaled on the support 41 and on another wheel not shown, at the place of disposal most remote from the silo. It will be understood that the places of disposal are arranged along the cord or wire 71 and below the same, so that the carrier may dump at each of the said places of disposal. A crank 73 is connected with the wheel 72 for moving the member 71, and the lower run of the said member is connected to the brackets by means of eyes 74, on the brackets, through which the said lower run passes and stops 75 are arranged on the said member at the outer sides of the eyes 74. The carrier is so constructed that the material will force the doors open when the latches are released.

I claim:—

1. A device of the character specified, comprising a track extending alongside the places of disposal of the silage, a carrier for the silage having grooved wheels movable on the track, the carrier depending from the wheels and having an open bottom, the ends of the carrier extending below the sides and being beveled in opposite directions, a door hinged to the lower edge of each side and closing against the beveled ends, latch mechanism for holding the doors closed, a shaft journaled vertically at one end of the carrier and connected at its lower end with the latch mechanism for releasing said mechanism when the shaft is oscillated, said shaft having an angular lug at its upper end, a trip lever pivoted adjacent to each of the places of disposal and with its lower end in position for engagement by the angular lug of the shaft of the carrier, the upper end of each lever being forked, a flexible member supported between the arms of the forks of the said levers, said member having stops for engaging the said arms to hold the levers rigidly in vertical position, the flexible member being movable longitudinally for the purpose specified, and means for moving the carrier to and from the silo.

2. A device of the character specified, comprising a track carrier movable on the track, said carrier having an open bottom, doors hinged to the carrier for closing the bottom, latch mechanism for holding the doors closed, means for releasing the latches, a trip arranged adjacent to each of the places of disposal, said trips being mounted to swing out of operative position when engaged by the releasing mechanism, and means operable from the silo for holding any predetermined trip in operative position.

3. A handling mechanism for silage, comprising a track, a carrier movable on the track and having an open bottom, the ends of the carrier extending below the sides and being beveled in opposite directions, doors hinged to the sides and closing against the beveled ends, a latch mechanism for holding the doors closed, a shaft journaled in vertical position at one end of the carrier and connected with the releasing mechanism for releasing the latches when the shaft is oscillated, said shaft having an angular arm at its upper end, a plurality of trip levers pivoted adjacent to the track, the lower ends of the levers being in position to engage the arm of the shaft, said levers being mounted to be swung into inoperative position by the arm, means operable from one end of the track for holding any predetermined trip lever rigid, said means comprising a flexible member having stops and being movable longitudinally to bring the stops into engagement with the upper ends of the levers, and means operable from one end of the track for moving the carrier.

4. A handling mechanism for silage, com-

prising a track, a carrier movable on the track and having an open bottom, the ends of the carrier extending below the sides and being beveled in opposite directions, doors hinged to the sides and closing against the beveled ends, a latch mechanism for holding the doors closed, a shaft journaled in vertical position at one end of the carrier and connected with the releasing mechanism for releasing the latches when the shaft is oscillated, said shaft having an angular arm at its upper end, a plurality of trip levers pivoted adjacent to the track, the lower ends of the levers being in position to engage the arm of the shaft, said levers being mounted to be swung into inoperative position by the arm, and means operable from one end of the track for holding any predetermined trip lever rigid, and means operable from one end of the track for moving the carrier.

5. A handling mechanism for silage, comprising a track, a carrier movable on the track, means at one end of the track for moving the carrier, said carrier having dumping doors in its bottom, latch mechanism for holding the doors normally closed, releasing mechanism on the carrier for releasing the latches, and means operable from the said end of the track for actuating the releasing mechanism at any predetermined position on the track, said means comprising trip levers arranged at the places of disposal, each lever being mounted to be swung into inoperative position by the releasing mechanism of the carrier, and a longitudinally movable flexible member having stops for engaging the levers to hold them in operative position.

6. A handling mechanism for silage, comprising a track, a carrier movable on the track, means at one end of the track for moving the carrier, said carrier having dumping doors in its bottom, latch mechanism for holding the doors normally closed, releasing mechanism on the carrier for releasing the latches, normally inoperative means arranged at predetermined points along the track for actuating the releasing mechanism, and means operable from the said end of the track for moving any predetermined releasing means into operative position.

7. A carrier for silage comprising a container having an open bottom and having the ends thereof extending below the sides, said ends being beveled at each side, doors hinged to the sides and closing against the ends, latch levers pivoted to one door intermediate their ends, catches on the other door for engaging the lower ends of the levers, a link connecting the upper ends of the levers, a shaft journaled at one end of the container and having a radial arm connected with the link, said lever having a radial arm at its upper end, and tripping mechanism for engaging the upper end of the lever to oscillate the same to release the latch levers.

8. A handling mechanism for silage, comprising a track, a carrier movable on the track, said carrier having dumping doors hinged to its bottom to normally stand open, latch mechanism for holding the doors closed, means on the carrier for releasing the latch mechanism, means arranged at intervals for operating the releasing means, each of the said operating means being mounted to be swung out of operative position by the movement of the carrier, and means operable from a distance for holding any of the said means in operative position.

9. A handling mechanism for silage, comprising a track, a carrier having dumping doors hinged to its bottom to normally hang open, said carrier having means for engaging the track, latch mechanism for normally holding the doors closed, a lever journaled in vertical position on the carrier and connected with the latch mechanism to release the same when the lever is oscillated in one direction, said lever having a lateral lug at its upper end, means arranged at the places of disposal for engagement by the lug to oscillate the shaft to release the latch mechanism, said means being normally mounted to move into inoperative position when engaged by the lug, and means operable from a distance for engaging any of the said means to hold the same in operative position.

10. A handling mechanism for silage, comprising a track, a carrier movable on the track, means for moving the carrier, said carrier having a dumping door, means for normally holding the door closed, a series of means for releasing the holding means and normally in inoperative position, and means operable from a distance for moving any predetermined releasing means into operative position.

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Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."