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BIN STRUCTURE

Filed May 7, 1923

Fig. 1.

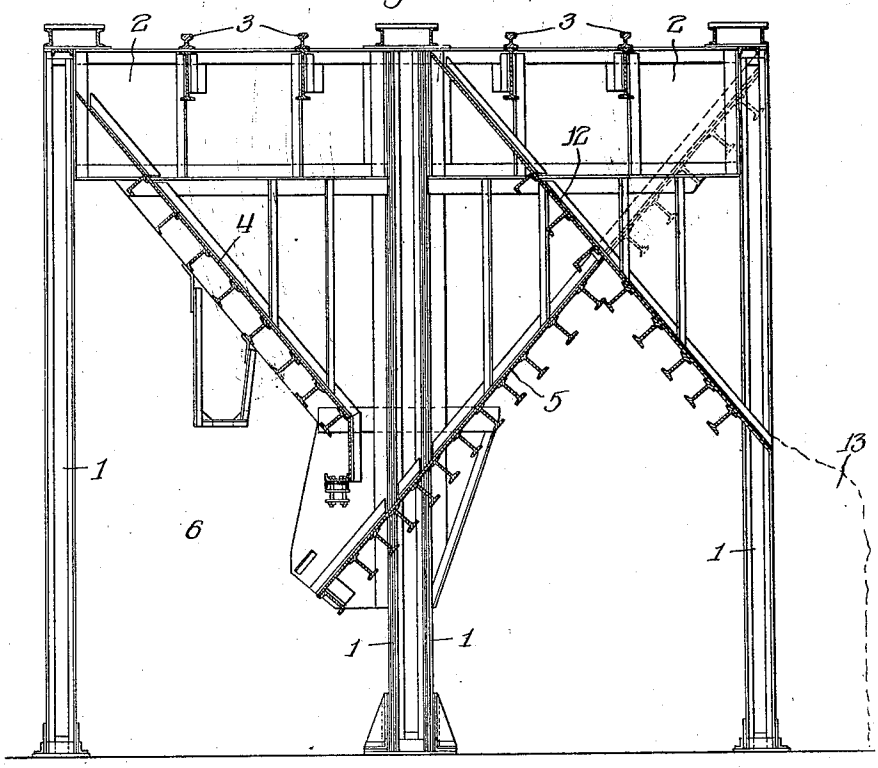
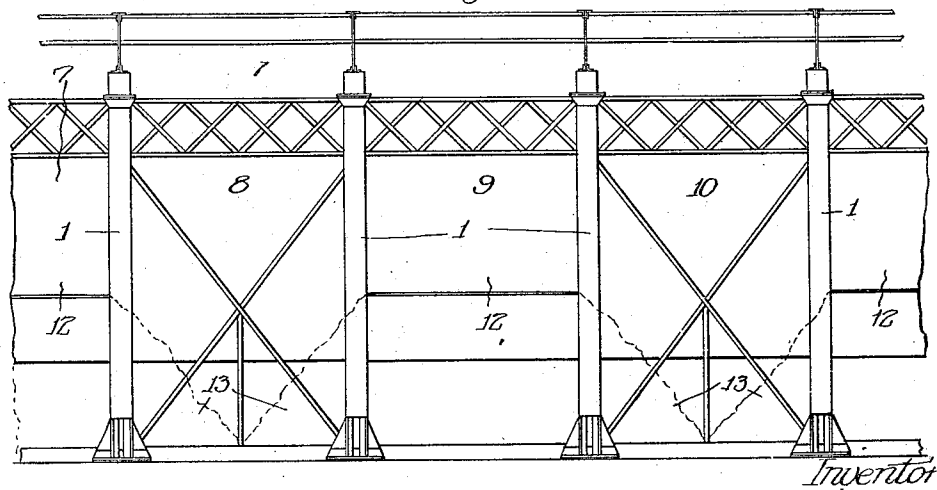



Fig. 2.




Inventor

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Witness:

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# UNITED STATES PATENT OFFICE.

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## BIN STRUCTURE.

Application filed May 7, 1923. Serial No. 637,038.

*To all whom it may concern:*

Be it known that I, FREDERICK H. WILLCOX, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bin Structures, of which the following is a specification.

The present invention relates to bin structures.

It has been common practice to provide stock bins into which ore or other lading is dumped from cars spotted upon tracks carried above the bin. For the purpose of getting ore into the ore storage yard outside of the bin, it has been common practice to provide an outrigger track on the bin structure laterally of the first mentioned tracks. Ore is dumped from this outrigger track and forms a tail pile, the material in said pile being picked up as required by an ore bridge or ore crane. By reason of the outrigger construction which is required for dumping on the tail pile, it is impossible for the ore bridge or ore crane to reclaim a very great proportion of the ore dumped from the outrigger track. Inasmuch as the outrigger track is ordinarily supported by a cantilever construction, a very heavy and rigid construction of the bin support is necessary.

The present invention has for one of its objects the provision of a relatively light weight though sturdy bin structure so constructed that from tracks placed directly above a bin, ore or other lading may be dumped either directly into said bin or onto a tail pile placed laterally of said bin.

A further object is to provide a bin structure having tracks mounted thereon which will have the advantage that by simply spotting the cars, lading may be directed either into bins or into tail piles located laterally of said bins.

A further object is to provide a bin structure having tracks mounted thereon which by a simple handling of lading cars will enable dumping either into bins or into a tail pile placed laterally of said bins.

A further object is to provide a bin structure of the kind referred to so constructed that the material in said tail pile may be simply and completely recovered.

A further object is to provide a dumping structure so arranged that by a simple spotting of the dumping cars lading may be dumped selectively in different directions transversely of said dump cars.

A further object is to provide dumping structure provided with tracks which without the provision of outrigger structure will permit the selective dumping of lading transversely of the dumping structure.

Further objects will appear as the description proceeds.

Referring to the drawings—

Figure 1 is a sectional view of an ore bin illustrating the principles of the present invention; and

Figure 2 is a side view in elevation of the structure illustrated in Figure 1.

The numerals 1—1 indicate upright supports, which carry cross beams 2—2. The cross beams 2—2 form supports for the tracks 3—3 but permit dumping from cars upon said tracks to the space beneath same.

At the left hand side of the bin structure, as indicated in Figure 1, is the sloping bottom 4 extending from a line adjacent to the upper left hand edge of the bin structure to a horizontal line near the center line of said bin structure. Spaced in angular relationship with the sloping bottom 4 is the sloping bottom 5. Said bottoms 4 and 5 form a hopper, space being provided between the lowermost edge of bottom 4 and bottom 5 to permit the passage of lading dumped from the left hand tracks 3—3 above the sloping bottom 4. The bottom 5 extends to a line beyond the lowermost edge of bottom 4 whereby to direct lading into the space 6, which is a bin for receiving and storing the dumped lading.

The right hand side of the bin structure, as illustrated in Figure 1, which is the front side of said bin structure as illustrated in Figure 2, is divided into a number of bays spaced longitudinally of the bin structure, said bays being divided by the uprights 1—1. Several of said bays are indicated by the numerals 7, 8, 9, 10 and 11 in Figure 2. Every second bay, i. e., 7, 9 and 11 in Figure 2, is provided with a sloping bottom 12 extending from a line substantially midway of the bin structure at the top thereof, sloping in the same general direction as bottom 4 and terminating at the right hand side of the bin structure as shown in Figure 1 along a line spaced materially above the surface of the ground. In practice it has been found convenient to have said spacing equal to

about 12 feet. The sloping bottom 5 may abut against the under side of each of the sloping bottoms 12—12. In the intermediate bays, that is—bays 8 and 10, the sloping bottom 5 extends to the upper right hand edge of the bin structure as shown in Figure 1. Bays 7, 8, 9, 10 and 11 will preferably be walled off from one another, said bays being of such a length longitudinally of the bin structure as to permit the convenient selective dumping from a railway car into any one of said bays.

In practice, railway dump cars will be run along the two pairs of tracks 3—3 illustrated at the top of the bin structure. Lading dumped from cars on the left hand pair of tracks 3—3 will pass into the hopper provided by the sloping bottoms 4 and 5, passing through the opening at the lower edge of the sloping bottom 4 into the bin 6. Lading from cars upon the right hand pair of tracks 3—3 may be selectively directed to the bin 6 or to a tail pile located to the right of the bin structure as shown in Figure 1, said tail pile being indicated by the numeral 13. This selective dumping is accomplished by suitably spotting the cars upon the right hand pair of tracks 3—3, forward or rearward movement of the cars being all that is required for spotting same and directing lading either to the tail pile 13 or the bin 6.

By reason of the present invention, the construction of the bin structure is very materially lightened inasmuch as no outrigger structure is necessary for dumping on the tail pile 13. Inasmuch as no outrigger structure is required, the remainder of the bin structure may be put up of materially lighter material, thereby reducing the cost of erection very materially. Furthermore, by reason of the fact that no outrigger structure is necessary, all of the material in the tail pile 13 can be reclaimed by an ore bridge or crane. Furthermore, inasmuch as the ore bridge can get closer to the bin structure according to the present invention than to former bin structures employing the outrigger structure, a considerably shorter cantilever arm on said ore bridge is necessary than on bridges used with prior structures such as those referred to.

A preferred embodiment of the present invention has been described in detail, but many modifications will occur to those skilled in the art. The disclosure is therefore to be considered in an illustrative and not in a limiting sense. It is intended to cover in this patent all modifications that fall within the scope of the invention as defined by the appended claims.

What is claimed is:

1. Bin structure, comprising a structural support for two pairs of railroad tracks, a sloping bottom beneath one of said pairs of tracks, a pair of sloping bottoms arranged in angular relation with respect to one another beneath the other of said pairs of tracks, said last mentioned sloping bottoms being divided into bays for directing material selectively in two opposite directions transversely of said bin structure.

2. A device of the kind described, comprising a structure, a pair of railroad tracks mounted upon said structure, a pair of sloping bottoms below said tracks, said sloping bottoms being arranged in angular relation with respect to one another and being arranged in bays, the sloping bottom of one of said bays being sloped to direct lading in one direction transversely of said structure, the bottom of the adjoining bay being sloped to direct lading in the opposite direction transversely of said structure.

3. In a device of the kind described, a structure having two pairs of railroad tracks thereon, bottoms sloping in the same general direction, each located below a pair of said tracks, a third sloping bottom in angular relation to said first mentioned sloping bottoms, said third sloping bottom forming an open hopper with one of said first mentioned sloping bottoms and being displaced longitudinally with respect to the other of said first mentioned sloping bottoms to provide bays for directing lading alternatively in one direction or the other transversely of said bin structure.

4. Bin structure, comprising supporting means, two pairs of tracks supported thereby, a bottom below each of said tracks, said bottoms sloping in the same general direction, a third bottom sloping in another direction, said third bottom being juxtaposed with respect to one of said bottoms to form an open hopper and being interrelated with the other of said bottoms to provide spaced bays for directing lading alternatively in one direction or the other transversely of said bin structure.

5. Dumping structure, comprising supporting means, two pairs of tracks carried thereby, a first sloping bottom means below one of said pairs of tracks, a second sloping bottom means below the second pair of tracks, and a third bottom means placed to provide an open hopper with respect to one of said bottom means and having cut out portions for the reception of spaced divisions of said second mentioned bottom means whereby lading deposited upon such spaced divisions will be directed in one direction transversely of said structure and lading deposited intermediate of said divisions will be directed in the other direction transversely of said structure.

6. An elongated lading dumping structure, comprising supporting means, two pairs of tracks carried thereby, a sloping bottom below one of said pairs of tracks,

sloping bottom means below the other of said pairs of tracks, said sloping bottom and said sloping bottom means extending in the same general direction, and a second sloping bottom extending oppositely to said sloping bottom and said sloping bottom means, said second sloping bottom being placed to provide an open hopper with respect to said first bottom, said sloping bottom means being divided into spaced divisions, said second sloping bottom being cut out for the reception of said divisions whereby said sloping bottom means and said second sloping bottom provide means for alternatively directing lading in one direction or the other transversely of said bin structure.

Signed at Chicago, Illinois, this 3 day of May, 1923.

FREDERICK H. WILLCOX.