

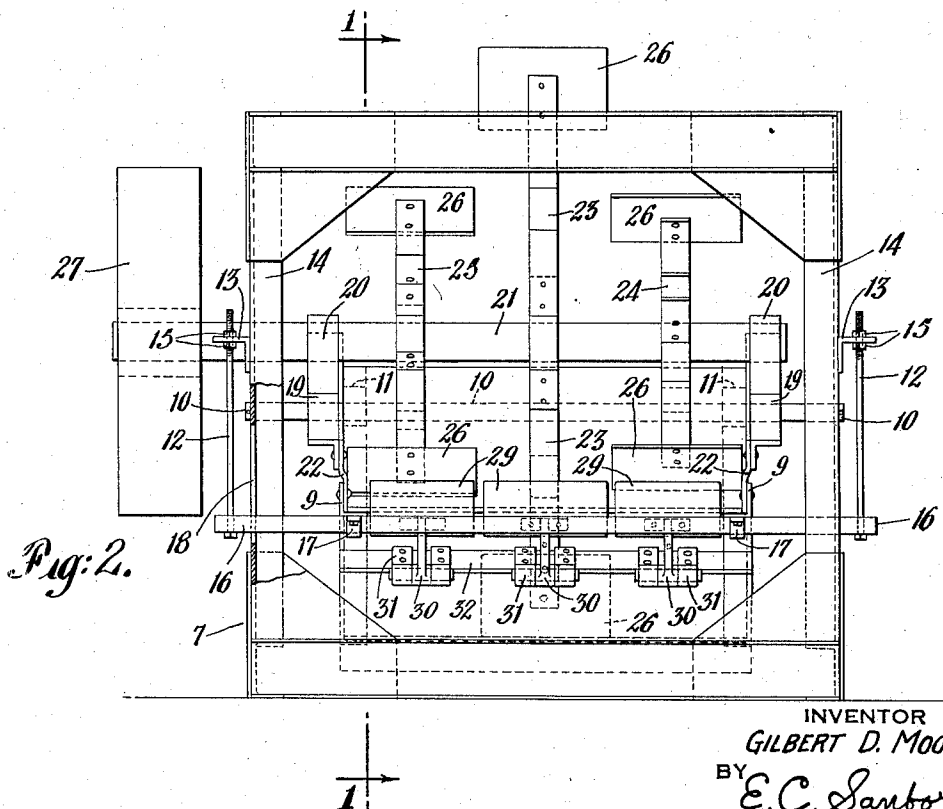
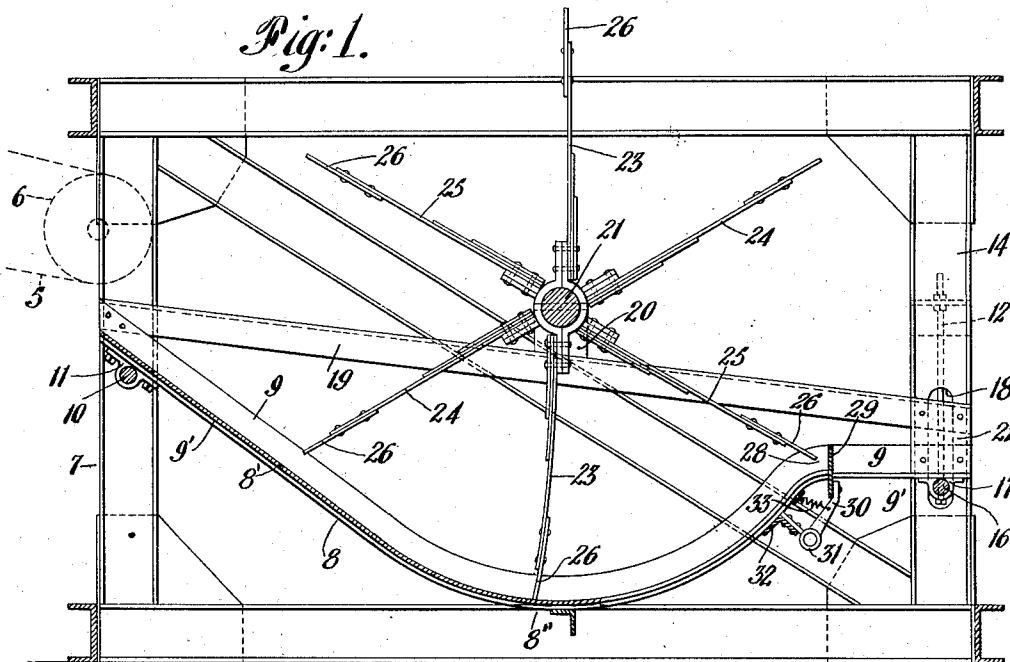
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APPARATUS FOR STACKING ORE AND SIMILAR MATERIAL

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APPARATUS FOR STACKING ORE AND SIMILAR MATERIAL

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This invention relates to the stacking of ore or similar material. An object of the invention is to provide effectively and expeditiously for the stacking of ore as it is received from a conveyor. The invention further comprises the provision of a method and means for stacking ore or similar material whereby the material may be vigorously and forcefully discharged and thrust through considerable distances. A further object is the provision of stacking means which is cheap to manufacture and inexpensive to operate. The invention also comprises further features which will be hereinafter described and claimed:

In the accompanying drawings wherein an embodiment of the invention is disclosed;

Fig. 1 is a transverse vertical sectional view taken on line 1—1 of Figure 2.

Figure 2 is a view in elevation of an apparatus for carrying out my invention.

Referring to the drawings a conveyor of any suitable or standard form such as an endless belt is indicated diagrammatically at 5 passing over a pulley or drum 6. The ore carried by said conveyor is delivered into the stacking apparatus which I have provided. This apparatus comprises a framework designated generally as 7 in which framework is supported a trough for receiving the ore as it is discharged from the conveyor 5. The trough 8 is shown comprising a floor portion 8' and a pair of side flanges 9. The side flanges 9 may form the vertical portions of a pair of angle irons L-shaped in cross section, the horizontal portions 9' of which underlie and support the floor 8' of the trough. Said floor is shown inclined downwardly from its rear end to the point 8'', from which point it extends upwardly and forwardly. The flange members 9—9' follow the contour of the floor 8' of the trough 8 and are shown extending forwardly beyond said floor. The trough is pivotally supported at its rear end on a cross rod 10 secured to the framework 7, said rod passing through bearing members 11 secured to the underside of the horizontal portions 9' of the aforesaid flange members. The height of the trough with respect to the conveyor 5 and frame work 7 may be adjusted

through the rods 12, the upper ends of which pass through brackets 13 on the standards 14 of the framework 7, and have threaded engagement with nuts 15 as shown. At their lower ends said rods 12 carry a cross bar 16 underlying and secured through brackets 17 to the underside of the horizontal portions 9' of the flange members 9—9'; said bar 16 passing through elongated slots 18 in the standards 14. It will be seen that the ore or similar material delivered by the conveyor 5 drops therefrom into the trough 8. For ejecting or discharging the ore from said trough I provide means which may be constructed substantially as follows:

Secured to and extending longitudinally of the trough 8 is a pair of angle beams 19, 19, supporting a pair of bearing members 20, 20 in which is mounted a shaft 21. The beams 19, 19 may be attached to the trough in any suitable way. In the example shown, said beams at their forward ends are secured through brackets 22, 22 to the respective forward ends of the vertical flanges 9 of the trough, while at their rear ends said beams may be fixed to the rear portions of said flanges in any desired manner, as by riveting or otherwise. Secured to the shaft 21 are three pairs of spring blades 23—23, 24—24, and 25—25, each of which blades is provided at its free end with a paddle member 26. Said blades may, for example, be made of the springs usually employed on automobiles. As will be seen from Fig. 2, each paddle 26 extends through only a portion of the width of the trough 8 although the combined width of the paddles 26 of either series of three blades 23, 24, 25 is substantially the same as the width of the trough. If desired the paddles might be arranged in staggered or overlapping relation with respect to each other; and the width of the paddles, as well as the number of paddles and blades, may, of course, be varied as desired. It will be seen that since the blades and shaft 21 are mounted on the trough 8 they are shiftable with said trough, and thus the latter may be adjusted through the rods 12 without disturbing the relation between the trough and the paddles. The shaft 21 carries a pulley 27 to which

power from any suitable source may be applied for rotating the shaft.

It will be seen that upon rotation of the shaft 21 the respective paddle members 26
5 come in contact with the ore in the trough 8 and force the ore forwardly. As the paddles revolve the spring blades to which they are attached are pushed back by the resistance of the ore so that when a paddle reaches
10 the mouth portion 28 of the stacker its spring blade straightens out, thereby vigorously impelling the ore out of the stacker. The force with which the ore is ejected is also dependent upon the speed of rotation of the
15 shaft 21 and attached paddle members. By increasing the speed, the force of ejection of the ore will be considerably increased.

Means are provided for holding the dirt or ore back until the paddles can compress it
20 sufficiently to prevent it scattering to any substantial extent when it is ejected. One form of means which may be employed for this purpose is shown in the accompanying drawings and may be constructed substantially as follows:

A series of baffles 29 are hinged under the discharge end 28 of the trough 8. Each baffle is shown as projecting upwardly from a corresponding arm 30 pivotally mounted in a
25 bracket 31 mounted on a cross bar 32 on the underside of the trough. As shown, the respective baffle members 29 project upwardly in front of the trough floor 8' and into the path of the ore, said members being biased
30 to ore obstructing position by springs 33. Three baffles are shown, one for each series of the paddle members 26. As a paddle rotates and forces the ore forwardly the baffle retards the ore until the compression of the
35 ore provides sufficient pressure on the baffle to overcome the action of the spring 33, whereupon the baffle is forced downwardly until the material passes over it, and the baffle is then returned to its normal position by said
40 spring.

Through the ore discharging means which I have disclosed I find that the ore may be ejected to great heights, heights as great as
45 fifty feet having been obtained. Thus, large volumes of ore may be readily stacked without necessitating shifting of the apparatus to different positions.

The term "ore" as used throughout the specification and claims is not employed in
50 any restricted sense but is intended to cover material of allied or similar character such as clay, dirt, or the like.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions,
55 of excluding any mechanical equivalents of the features shown and described or portions thereof, but recognize that various structural

modifications are possible within the scope of the invention claimed.

What I claim is:

1. In an apparatus of the character described, a trough adapted to receive ore from a conveyor, means comprising a series of rotatable paddle members for ejecting the ore from said trough, and baffle means providing for compression of the ore by said paddle members.

2. In an apparatus of the character described, the combination of a trough adapted to receive ore from a conveyor, a plurality of sets of paddle members for ejecting ore from said trough, and a plurality of baffle members, one for each of said sets of paddle members, for resisting discharge of the ore and providing for compression thereof by said paddle members.

3. In an apparatus of the character described, the combination of a trough adapted to receive ore from a conveyor, means comprising a series of paddle members for ejecting ore from said trough, and baffle means providing for compression of the ore by said paddle members, said baffle means yielding in response to the action of said paddle members to permit the discharge of the ore.

4. In an apparatus of the character described, a trough adapted to receive ore from a conveyor, movable means for discharging ore from said trough, baffle means for resisting movement of the ore until the latter is compressed to a given extent, said baffle means yielding after such compression of the ore to permit the ore to be readily discharged.

5. In an apparatus of the character described, a trough adapted to receive ore from a conveyor, movable means for discharging ore from said trough, baffle means for resisting movement of the ore until the latter is compressed to a given extent, said baffle means yielding after such compression of the ore, and spring means for restoring said baffle means to normal position.

6. In an apparatus for stacking ore, a trough for receiving ore from a conveyor, means comprising a rotatable member and a series of paddles resiliently connected thereto for ejecting the ore from said trough, and means causing flexure and subsequent straightening of said paddles whereby the latter vigorously impel the ore from said trough.

In testimony whereof, I have signed my name to this specification this 13th day of March, 1929.

G. D. MOODY.