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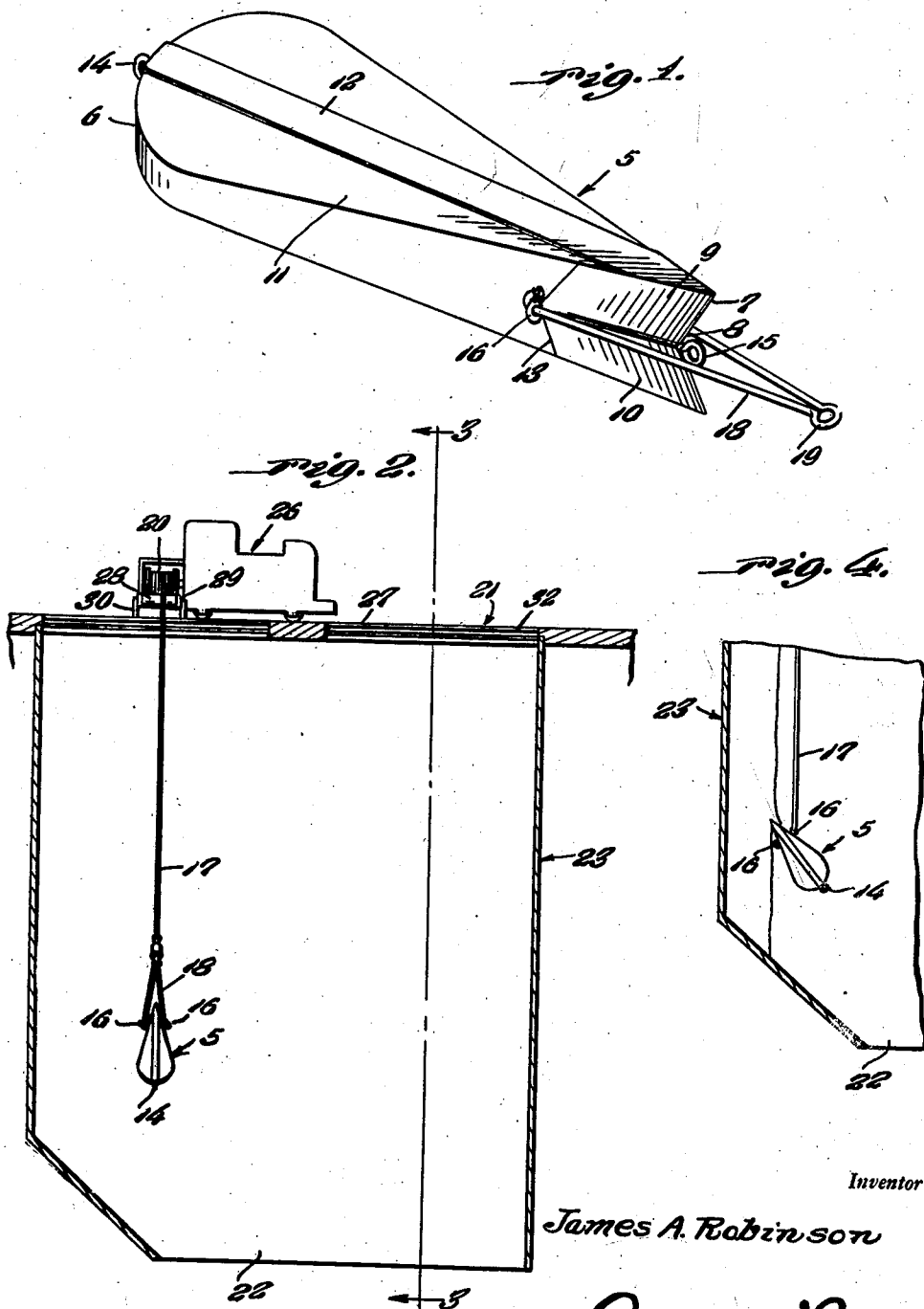
J. A. ROBINSON

2,315,163

ORE POCKET CLEARING MEANS

Filed March 28, 1942

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Inventor

James A. Robinson

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

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Fig. 3.

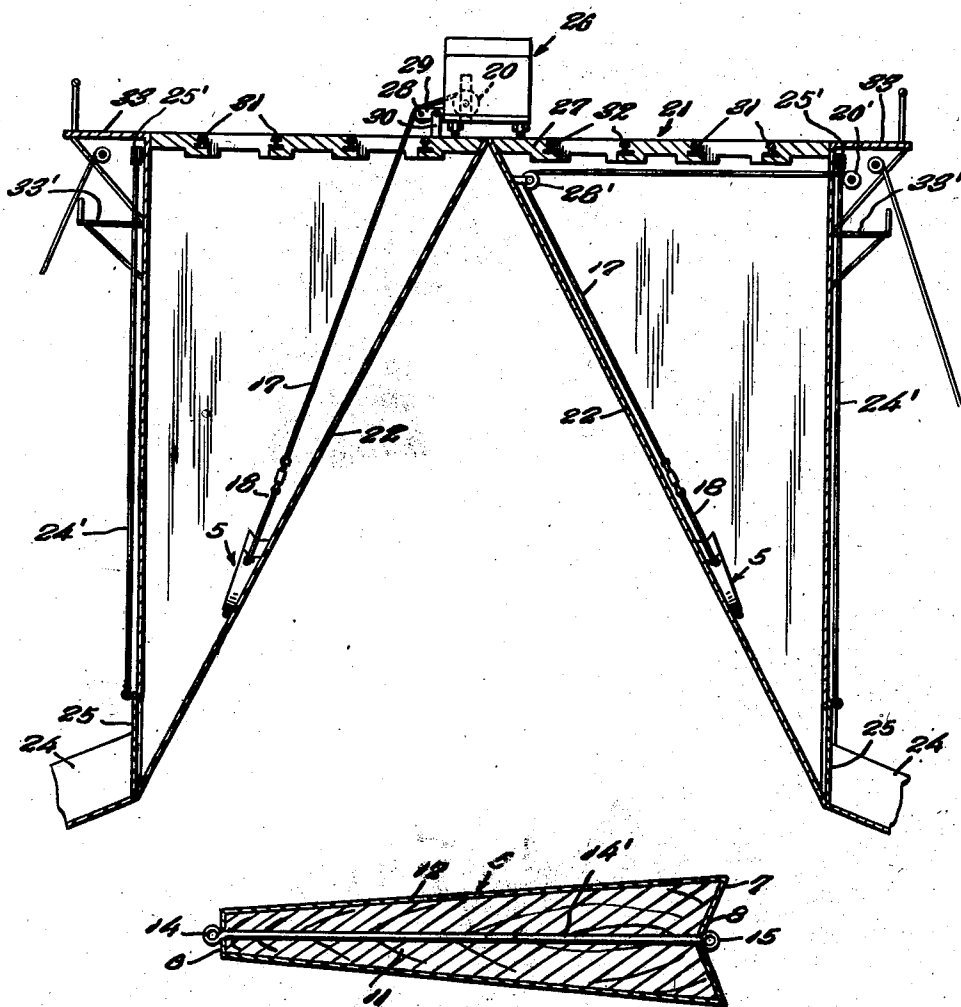


Fig. 5.

Inventor

James A. Robinson

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

UNITED STATES PATENT OFFICE

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ORE POCKET CLEARING MEANS

James A. Robinson, Sault Ste. Marie, Mich.

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4 Claims. (Cl. 259—47)

My invention relates to improved means for clearing ore pockets and the like of ore or other similar material clinging or adhering to the sides or inclined bottom of the pockets, and the primary object of my invention is to provide simple and efficient means to keep ore pockets clear of such accumulations during such operations as loading ships with ore at a dock.

Other important objects and advantages of my invention will be apparent from a reading of the following description taken in connection with the appended drawings, wherein for purpose of illustration I have shown a preferred embodiment of my invention.

In the drawings:

Figure 1 is a side perspective view of an ore scraper in accordance with the present invention showing a cable attaching bail in use thereon.

Figure 2 is a fragmentary longitudinal vertical sectional view taken through an ore pocket and showing a scraper in accordance with the invention suspended by its bail from a cable wound on a drum operated by suitable power and support means such as a trapping machine running along the center of the top of the dock between or outside of the ore car tracks.

Figure 3 is a fragmentary transverse vertical sectional view taken through Figure 2 along the line 3—3 and looking toward the left in the direction of the arrows and showing at the right side another method of operating the cable of the scraper by power.

Figure 4 is a fragmentary sectional view similar to Figure 2 but showing the scraper suspended by one of the eyes on its opposite sides so as to assume a diagonal position in the scraping operation.

Figure 5 is a longitudinal central section taken through Figure 1.

Referring in detail to the drawings, the numeral 5 generally designates the present scraper which comprises a body of wood or other suitable relatively light weight material, said body being generally elongated pear-shaped in horizontal cross section and having its plane top and bottom surfaces converging toward the wide rounded end 6 and its sides or edges tapered from the wider rounded end 6 to its pointed end 7, the taper being uniform and gradual, and the pointed end being notched as indicated by the numeral 8 and inwardly and oppositely bevelled at its sides as indicated by the numerals 9 and 10.

The body 11 of the scraper is preferably of soft wood with iron reinforcements in the form of longitudinal substantially parallel side strips

12 running along the middle of the opposite sides of the body 11 from one end thereof to the other, and substantially flush with or projecting slightly above the top and bottom, respectively, of the said body to reduce wear on the body and acts as runners; and the protective plates 13 facing the undercut sides 9 and 10 and the notched portion 8 at the pointed upper end of the scraper.

At the wider lower end of the scraper is an eye 14 on the lower end of a rod passing centrally through the scraper body, the said eye being used to lash the scraper in place on a support when it is not in use.

A similar eye 15 is fixed on the upper end of the rod at the apex of the notch 8 at the upper and smaller end of the scraper.

Laterally projecting eyes 16 located at the lower terminals of the iron reinforcing 13 are provided for alternate connection of the lower end of the operating cable 17 as indicated in Figure 4 of the drawings, in which case the scraper is operated in a diagonal position. The eyes 16 are also used as flexible means of attachment for the lower ends of the legs of the V-shaped bail 18 which has an eye 19 at its upper end for connection to the operating cable 17 to suspend the scraper 5 in an upright position as indicated in Figures 2 and 3 of the drawings when this is adequate for the conditions under which the scraping of the ore is conducted.

The operating cable 17 is wound on a powered drum 20 supported in some suitable manner at the top of the ore dock which is generally designated 21, so that the cable 17 and the scraper attached thereto may be raised and lowered as needed to allow the scraper to slide gravitationally along the angulated bottom 22 of the ore pocket which is generally designated 23, the descent of the scraper being produced by the action of gravity, and to raise the scraper after it has reached a depressed position, in order to continue the scraping action whereby any ore accumulated on the walls of the ore pocket in the path of the scraper will be dislodged and caused to roll to the ore chute 24 which is extended to convey the ore into the hold of a ship (not shown), the gate 25 at the lower end of the ore pocket being open to permit the ore to pass from the ore pocket to the chute.

A convenient and practical powered drum means for operating the cable 17 to work the scraper is a motorized machine such as that generally designated 26 which has rubber tired wheels to run along the centerwalk 27 on the top 21 of the ore dock. For operating the scraper

in an ore pocket, the cable 17 is run over a pulley 28 on a fair leader arrangement 29 which has an element 30 to engage the top of the dock to act as a brace for the machine when operating the cable and scraper from its drum 20. In Figure 3 of the drawings the outer tracks 31 are those utilized by the ore cars, as well as the inner tracks 32, the provision of means for operating the cable 17 involving considerations of lack of space, wherein the machine 26 may have to be run in between ore cars on the inner tracks to operate the scraper 5.

Referring now to the arrangement shown at the right hand side of Figure 3 of the drawings and which interferes less with operations on the top of the dock than the first described embodiment, the place of the fairlead pulley 28 is taken by the pulley 28' which is mounted adjacent the upper end of the angulated wall 22, and the functions of the trapping machine drum 20 are performed by a power driven drum 20' supported near the upper end of the outside wall of the ore pocket, the cable 17 leading upwardly from the scraper 5, over the pulley 28' and around the drum 20'. The drum 20' can be powered and controlled by any of a variety of available means within the scope of the invention, the operator preferably standing on a secondary operating platform 33' projecting from the side of the dock below the drum. In this arrangement the scraper can be drawn up to an out of the way position near the pulley 28'. The chute gates 25 may conveniently be operated by cables 24' on drums 25' mounted on the face of the dock under the platforms 33.

It will be noted that in most cases the upward movement of the scraper 5, with its clearing action caused by its specially formed pointed upper end will be sufficient to dislodge any accumulation of ore or the like, which will then fall and slide down the inclined bottom wall 22 to the region of the ore chute. In other cases it may be necessary to work the scraper up and down a number of times to dislodge accumulations.

Although I have shown and described herein a preferred embodiment of my invention, it is to be definitely understood that I do not wish to limit the application of my invention thereto, except as may be required by the scope of the subjoined claims.

Having described the invention, what is claimed as new is:

1. A scraper for dislodging ore or the like adhering to the sides and/or slanting bottom of an ore pocket or the like, said scraper comprising a tapered body disposed with its wider end

downwardly, the top and bottom of said body being plane to slide gravitationally down along said slanting bottom, and an operating cable connected to the upper and narrower end portion of said body for raising and lowering the scraper along said slanting bottom to dislodge ore accumulated thereon, a bail having legs flexibly connected to opposite sides of the upper part of said body and connecting said body to the lower end of said operating cable.

2. A scraper for dislodging ore or the like adhering to the sides and/or slanting bottom of an ore pocket or the like, said scraper comprising a tapered body disposed with its wider end downwardly, the top and bottom of said body being plane to slide gravitationally down along said slanting bottom, and an operating cable connected to the upper and smaller end portion of said body for raising and lowering the scraper along said slanting bottom to dislodge ore accumulated thereon, the opposite sides of the upper part of said body having eyes for selectively connecting the lower end of said operating cable to suspend said body in a diagonal position.

3. A scraper for dislodging and scraping accumulation of ore or the like from the sides and slanting bottom of an ore pocket, said scraper comprising an elongated tapered wooden body disposed with its wider end downwardly, said wooden body having substantially plane upper and lower surfaces, said surfaces converging toward the wider lower end of the body, longitudinal metal runners secured along the upper and lower surfaces of said body, and attaching means at the upper end of said body for attaching an operating cable thereto.

4. In combination with an ore dock having an ore pocket having a laterally outwardly declining floor, said dock further having an outside wall formed with an ore discharging opening at the lower end of said floor, an ore scraper slidable along said declining floor to dislodge accumulations of ore therefrom toward said discharging opening, a pulley mounted adjacent the upper end of said floor, a power drum mounted on the laterally outward side of said outside wall, a cable wound on said drum and trained over said pulley and attached to the scraper for operating the scraper, said dock including a main operating platform projecting beyond the outside wall of the dock on a level with the top of the dock, said power drum being mounted on the outside wall of the dock below said main operating platform, and a secondary operating platform mounted on said outside wall below said power drum.

JAMES A. ROBINSON.