

[54] **INCINERATOR LOADER**

3,368,478 2/1968 Clar 100/245

[75] Inventor: **Richard F. Stockman**, Friendship, N.Y.

Primary Examiner—Robert B. Reeves
Assistant Examiner—Thomas E. Kocovsky
Attorney, Agent, or Firm—Wayne H. Lang

[73] Assignee: **The Air Preheater Company, Inc.**, Wellsville, N.Y.

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[57] **ABSTRACT**

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A dual ram type loader that is adapted to alternately move a quantity of bulk type waste material into either one of a pair of spaced incinerators. The ram comprises essentially a pair of oppositely disposed compaction members in a single feed cylinder that are actuated intermittently to force the material into the spaced incinerators. Be selectively controlling lock means for the several compaction members either one or the other may be actuated according to any sequence of operation as may be determined by an operator or a conventional timing device.

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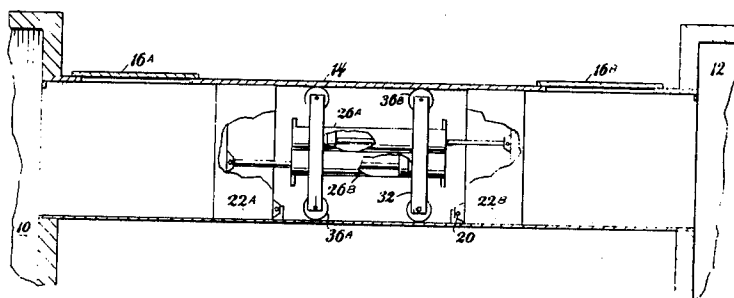
[58] Field of Search **214/23; 100/209, 245; 110/109, 114**

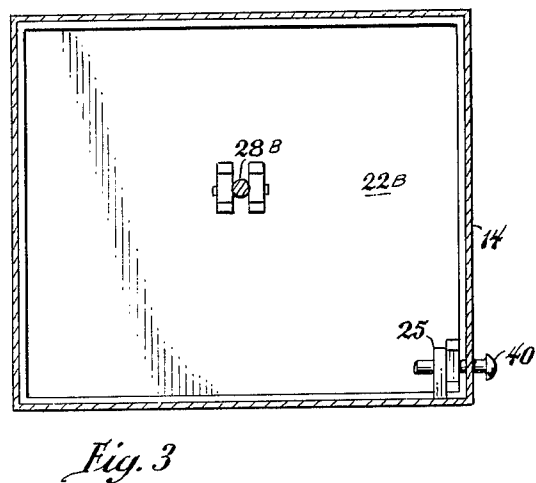
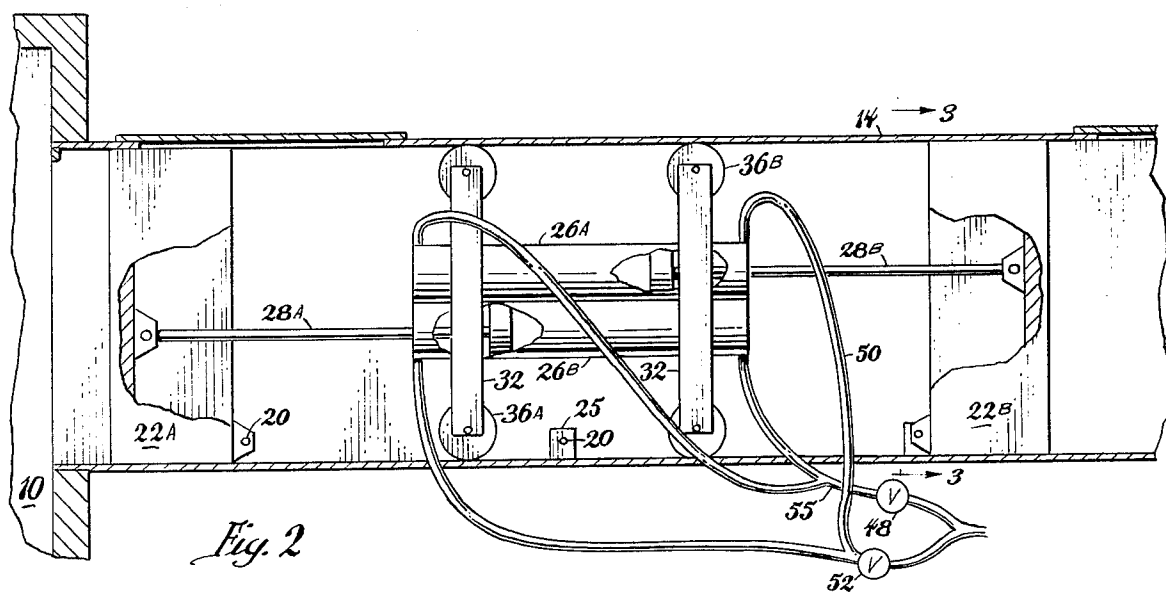
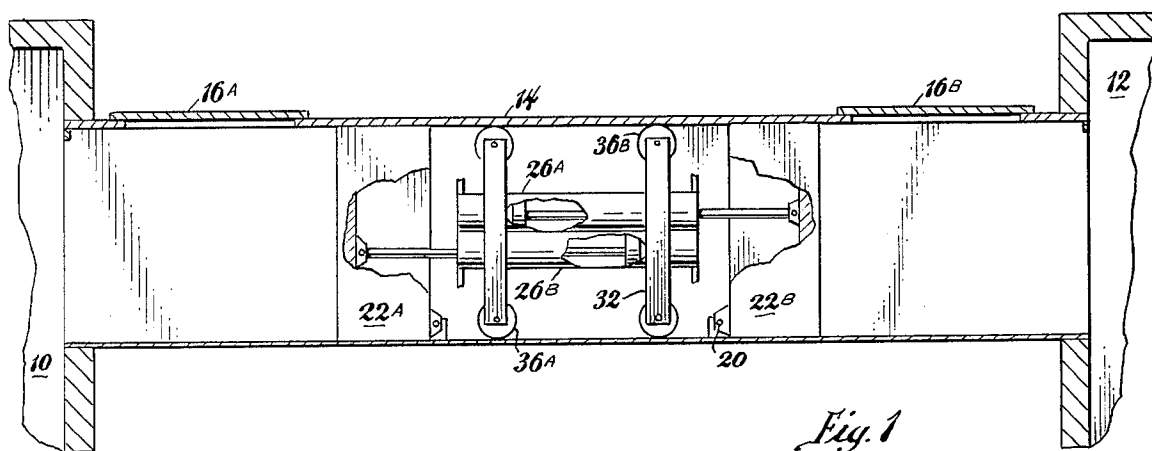
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5 Claims, 3 Drawing Figures





INCINERATOR LOADER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a ram type loader for an incinerator that is adapted to move waste material into either one or both of a pair of spaced-apart but adjacent incinerators.

2. Description of Prior Art

Heretofore it has been customary, if not necessary, to provide several adjacent incinerators with separate and independent loading devices whereby each one would be operated and controlled entirely independent of the other. Although such multiple apparatus was effective, it was also expensive to install and to operate, and the total space requirement was significantly greater for multiple units than for a single unit as herein defined.

SUMMARY OF THE INVENTION

In accordance with this invention I therefore provide a loading mechanism for a pair of spaced-apart incinerators whereby a single loading mechanism may be selectively operated in opposite directions to effectively load either one or both of the incinerators as determined by an operator or timing mechanism. The mechanism basically comprises a loading device that lies intermediate two incinerators. The device includes a single cylinder containing a pair of oppositely operable compaction rams with a two-way operating mechanism therebetween selectively used to operate either of the rams.

BRIEF DESCRIPTION OF THE DRAWING

The above and other features and advantages of the present invention will become more apparent from the following description with reference to the accompanying drawing in which:

FIG. 1 is a schematic side elevation of a dual ram type loader in accordance with the present invention.

FIG. 2 is an enlarged side elevation of the device during a phase of its operation, and

FIG. 3 is a cross sectional drawing of the device as seen from line 3 — 3 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the drawing the numerals 10 and 12 indicate a pair of spaced incinerators that are connected by a single feed cylinder 14 that extends substantially horizontally therebetween. At each end of the feed cylinder 14 are openings through which waste material is delivered from a front end loader or similar loading mechanism. The openings are closed by loading doors 16A and 16B having inner walls that comprise a substantially continuous surface with the remainder of cylinder 14.

Compaction members 22A and 22B are slidably fitted in the ends of feed cylinder to move waste material that falls through the open doors 16A and 16B into the adjacent incinerator chambers. The compaction members 22A and 22B are generally in the form of pistons sized to form a sliding ram that moves past the loading openings when said compaction members are placed in an extended position so as to push material loaded through doors 16A or 16B into an adjacent incinerator.

Intermediate the compaction members 22A and 22B in cylinder 14 are positioned a pair of oppositely disposed drive cylinders 26A and 26B that include therein

pistons having connecting rods 28A and 28B that connect to their representative compaction members 22A and 22B. A pressure fluid is applied to cylinders 26A and 26B behind their respective pistons to cause the pistons and the compaction members connected thereto to move horizontally in cylinder 14 to force waste material that has fallen into the ends thereof through open doors 16A or 16B into the incinerators 10 or 12.

The drive cylinders 26A and 26B are carried by a support member 32 including wheels 36A that ride on the bottom of the feed cylinder 14. The support member 32 also includes upper wheels 36B that track on the upper inside wall of feed cylinder 14 whereby the cylinders 26A and 26B are at all times supported at a fixed axial position within the feed cylinder because of their continuous bearing opposite inner walls thereof.

In accordance with this invention, each compaction member 22A and 22B is provided with a special locking means whereby it may be locked against movement within the feed cylinder 14. When one compaction member is locked in this manner, the other compaction member is free to move longitudinally in cylinder 14 an amount equal to the stroke of both actuating cylinders 26A and 26B in response to the inlet of an actuating fluid.

As one compaction member is moved an amount equal to the stroke of both pistons in their respective cylinders 26A and 26B, the support member 32 is moved along the axis of the cylinder 14 an amount equal to the stroke of the single piston that is connected to the locked compaction member.

The "lock" may consist of a simple pin 40 or the like inserted through matching openings 20 in the stop 25 and in either one of the compaction members 22A or 22B that corresponds when completely withdrawn against the stop 25. Various equivalent locking means may be provided without amounting to invention, and the pins 40 are only symbolic of the locking means shown.

In operation of the arrangement illustrated in FIG. 2 of the drawing, two or more incinerators with a single loading cylinder therebetween are supplied with a quantity of waste material through open loading doors 16A or 16B. A pin 40 is placed through aligned openings 20 in a stop 25 and compaction member 22B whereby the member 22B is locked against axial movement. Valve 48 in supply line 55 for pressure fluid is opened and pressure fluid is permitted to flow into the left hand end of cylinder 26A and on the right hand end of cylinder 26B.

As pressure fluid flows into cylinder 26A, the piston therein moves to the right and the piston in cylinder 26B moves to the left, but inasmuch as compaction member 22B is locked, the entire carriage 32 moves to the left and only the compaction member 22A moves to the left. Similarly, fluid flowing to the right hand end of cylinder 26A and the left hand end of cylinder 26B through valve 52 and pressure line 50 forces the pistons in both cylinders to withdraw the position shown in FIG. 1 whereby both compaction members 22A and 22B are abutting their respective stops 25. No special means for venting the pressure fluid from cylinders 26A or 26B is here shown inasmuch as natural leakage around the pistons and from the cylinder will alone provide satisfactory operation.

If the locking means should be used to lock compaction member 22A relative to cylinder 14, the compaction member 22B would similarly be moved to the right an amount equal to the movement of the pistons in cylinders 26A and 26B.

While only a single type of locking mechanism has been shown for the several compaction members, and only a single arrangement for supporting and moving the support structure has been shown, other equivalent means may be substituted therefor without resorting to invention. It is therefore intended that all material shown in the accompanying drawing or described in the accompanying specification shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. Apparatus for selectively moving a quantity of refuse into either of a pair of spaced chambers comprising an elongate feed cylinder between chambers, loading openings located at opposite ends of said feed cylinder adjacent each of the spaced chambers for loading refuse therein, a pair of axially movable compaction members in said elongate cylinder intermediate the loading openings, means for moving the compaction members axially in said cylinder to push waste material from said loading openings into the spaced chambers including a single pair of oppositely disposed drive cylinders intermediate the compaction members, axially movable drive means in said drive cylinders connected at their outboard ends to the compaction members for

moving compaction members axially in said feed cylinder, means supporting said drive cylinders for movement freely along the longitudinal axis of the feed cylinder, a source of driving fluid, means supplying the driving fluid to each of said cylinders, and means for locking one of the compaction members relative to said feed cylinder whereby the drive means will move the unlocked compaction member along the longitudinal axis of the feed cylinder substantially equal to the sum of the longitudinal distance traveled by both driving means within their respective cylinders.

2. Apparatus as defined in claim 1 wherein the means supporting said drive cylinders comprises support structure having substantially friction-free contact with the inner wall of the feed cylinder.

3. Apparatus as defined in claim 1 wherein the means supporting the drive cylinders includes support structure that simultaneously contacts opposite sides of the feed cylinder to provide longitudinal stability when moving along the axis of said feed cylinder.

4. Apparatus as defined in claim 1 including closure means that close the loading openings in the feed cylinder.

5. Apparatus as defined in claim 4 wherein the inner wall of said closure means has a surface whose contours are similar to those of said elongate feed cylinders to provide a continuous housing for the compaction members that are axially movable therein.

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