

Feb. 8, 1944.

J. SALVADOR

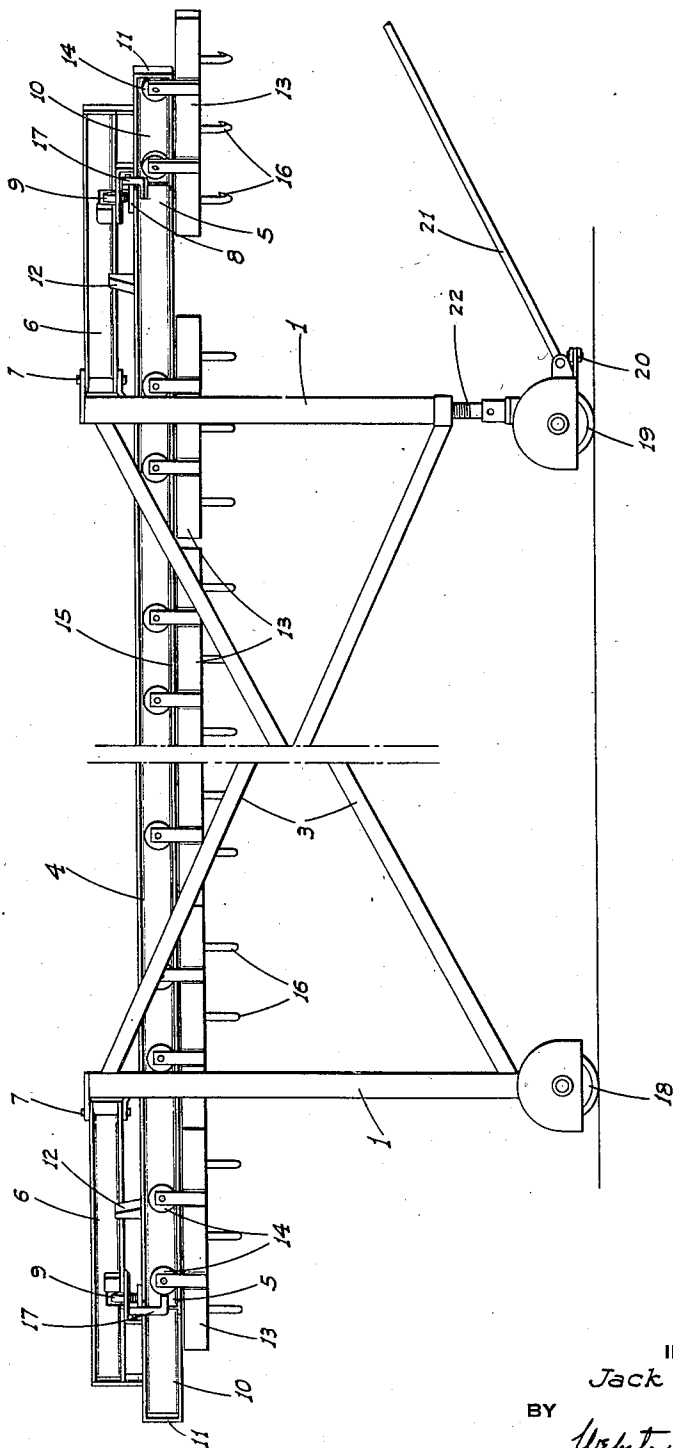
2,341,162

PORTABLE CONVEYER

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Fig. 1



INVENTOR
Jack Salvador
BY
Webster & Webster
ATTYS

Feb. 8, 1944.

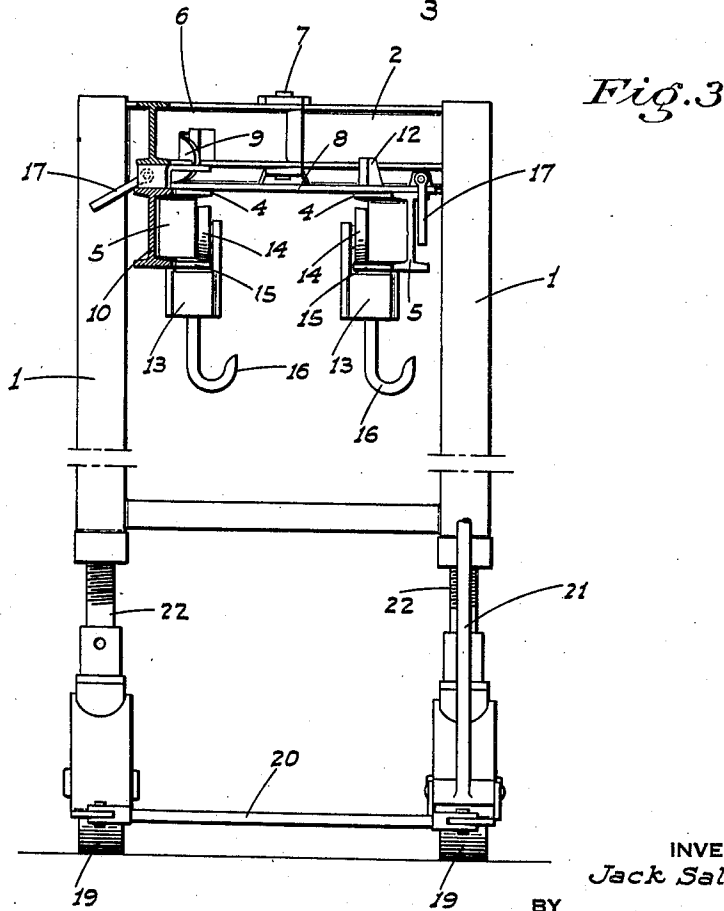
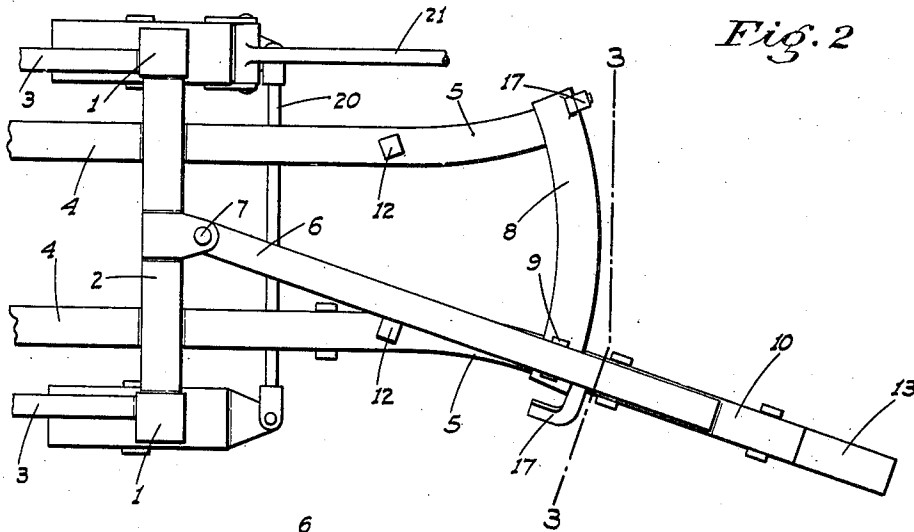
J. SALVADOR

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PORTABLE CONVEYER

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2 Sheets-Sheet 2



INVENTOR
Jack Salvador

BY

Robert R. Roberts
ATTYS

UNITED STATES PATENT OFFICE

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PORTABLE CONVEYER

Jack Salvador, Toccoa, Ga., assignor to R. G. Le Tourneau, Inc., Stockton, Calif., a corporation of California

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5 Claims. (Cl. 104—103)

The present invention relates in general to a portable horizontal conveyer, and in particular the invention is directed to a portable trolley-type conveyer adapted to convey weighty articles, in suspended relation, from one point to another. The invention, while having many uses, is especially designed to convey ordnance shells from point to point in the assembly line, or from the end of said line to a point of removal adjacent a railroad car into which the shells are to be loaded.

The principal object of the invention is to provide a horizontal conveyer which includes a pair of horizontal rails mounted in side by side but spaced relation, a plurality of rail supported trolleys from which the articles to be conveyed are suspended, and unique means to switch said trolleys from one rail to the other; the trolleys being moved in opposite directions along said rails.

A further object of the invention is to embody in a conveyer as in the preceding paragraph, a novel stop arrangement to prevent the trolleys from escaping from either of the rails when the switch units are not in cooperating position relative to the ends of said rails.

It is an additional object of this invention to provide in a portable conveyer, a frame which is wheel-supported at opposite ends; the elevation of the frame relative to the wheels at one end being variable by adjustment of the wheel mounts, whereby the trolley supporting rails may be disposed horizontally in any given working position of the conveyer.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation, foreshortened, of the conveyer.

Figure 2 is a fragmentary plan view illustrating one end of the conveyer and the corresponding switch unit.

Figure 3 is an end section taken on line 3—3 of Fig. 2.

Referring now more particularly to the characters of reference on the drawings, the conveyer comprises a horizontally elongated upstanding frame, which includes transversely spaced

end posts 1 at each end connected together at the top by cross beams 2; the frame having diagonal bracing 3 which extends between the end posts 1 on both sides of the structure.

A pair of rails 4, of somewhat greater length than the frame, are secured to the underside of cross beams 2 in transversely spaced parallel relation; said rails being formed from I-beams, the flanges of which form the tracks for the trolleys, as will hereinafter appear. The rails project some distance beyond the frame at opposite ends of the latter and the outmost end portions 5 of the projecting rails are flared or curved laterally and outwardly, as clearly shown in Fig. 2.

The conveyer at each end includes a switch unit which comprises the following:

A horizontal swinging bar 6 is pivoted, as at 7, to cross beam 2 centrally between rails 4 and at the point of intersection of extended center lines of flared end portions 5 of rails 4. This bar 6 projects horizontally from said pivot to a termination some distance beyond end portions 5 of said rails. An arcuate plate 8, concentric to pivot 7, connects the ends of rail portions 5 and is mounted atop the latter; a roller 9 mounted on bar 6 riding said plate, supporting the bar and facilitating swinging movement thereof.

A relatively short rail section 10, likewise formed from an I-beam, is fixedly suspended from the outer end of bar 6 in position to closely aline with either one of the adjacent end portions 5 of rails 4, depending on the position of bar 6. The outer end of each rail section 10 is closed as shown at 11, while the inner end is open. Stops 12 on the rails limit outward swinging movement of bar 6 and are positioned so that when the bar engages one thereof, the rail section 10 is in matching or alined relation with the corresponding rail portion 5 and forms an extension thereof.

Each I-beam rail supports a plurality of trolleys, each of which comprises a horizontal and longitudinally extending bar-like carriage 13 suspended from the rails by longitudinally spaced pairs of rollers 14 which engage and ride on opposite ones of the lower flanges 15 of said rails. The rollers 14 are spaced apart lengthwise of the carriages 13 a distance somewhat less than the length of rail sections 10 of the switch units, whereby the trolleys may be individually switched at either end of the conveyer from one rail to the other by the following manipulation of the corresponding switch unit.

When in use the trolleys are manually moved along the rails, said trolleys moving in one direc-

tion on one rail and in the opposite direction on the other. As a trolley reaches the end of one rail, the bar 6 of the switch unit at such end is swung to a position with the corresponding rail section 10 in alinement with the end of said one rail. The trolley is then run outward until wholly suspended from said rail section, as is shown in Fig. 1. Thereupon, the operator swings bar 6 horizontally to the opposite position and rail section 10 is then in alinement with the end of the other rail. The trolley thereafter is pushed lengthwise to move it from rail section 10 onto the other rail along which it is subsequently free to move.

The parts to be conveyed are suspended from the carriages 13 by appropriate attachments of the required design, here shown as hooks 15. The trolleys, as the same move along one rail, have the articles to be conveyed suspended therefrom. As said trolleys reach the unloading end of the conveyer, the articles are removed from hooks 16, and the then empty trolley is switched, as above described.

In order to prevent escape of the trolleys from the rails 4 when the rail sections 10 are not in alinement therewith, stop fingers 17 are pivoted in connection with the frame for vertical swinging movement in a transverse plane; such fingers normally depending into the path of rollers 14 at the ends of rails 4, and also in the path of the inner ends of the upper flanges of rail sections 10. While fingers 17 normally prevent escape of the trolleys from rails 4, a rail section 10, when swung to an operative position in alinement with one rail, strikes the corresponding finger 17. This swings the finger clear of the path of the adjacent rollers 14, permitting such rollers to move to or from the rail section.

The conveyer may be of a fixed type, but if portable, the frame is supported at one end by wheels 18 journaled on the lower ends of corresponding posts 1, while at the other end the frame is supported by swivel mounted wheels 19, said wheels being connected by a tie rod 20. A pull handle 21 is pivoted to and projects forwardly from one of the wheels 19. The wheels 19 are mounted in connection with the corresponding end posts 1 of the frame by means of vertically adjustable screw spindles 22; these spindles permitting the frame elevation at said end to be varied at any point of use so that rails 4 are substantially horizontal, as is desirable for ease of movement of the trolleys along both rails and in opposite directions.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:

1. A conveyer comprising a frame, a pair of

horizontal rails mounted on the frame in spaced side by side relation, a plurality of trolleys riding the rails, a rail section disposed at opposite ends of the rails for switching movement between selective positions in close alinement with adjacent ends of the rails, and means mounting each rail section for said movement in a horizontal plane; said means for each rail section comprising a swinging bar pivoted at one end in a plane between the rails and short of the adjacent ends thereof, the corresponding rail section being mounted in connection with and parallel to said bar, and said adjacent ends of the rails being substantially radial of the pivot point of said bar.

2. A conveyer comprising a frame, a pair of substantially horizontal rails mounted on the frame in spaced side by side relation, a trolley adapted to ride said rails, a rail section disposed beyond one end of the rails for switching movement between selective positions in end to end alinement with said rails, and means mounting said rail section for horizontal swinging movement between said positions about a vertical pivot point disposed between and inwardly of said one end of the rails, the rails at said one end being substantially radial of said pivot point.

3. A conveyer comprising a frame, a pair of substantially horizontal rails mounted on the frame in spaced side by side relation, a trolley adapted to ride said rails, a rail section disposed beyond one end of the rails for switching movement between selective positions in end to end alinement with said rails, and means mounting said rail section for horizontal swinging movement between said positions about a vertical pivot point disposed between and inwardly of said one end of the rails, the rails being curved outwardly adjacent said one end thereof whereby the latter are substantially radial of said pivot point.

4. A conveyer comprising a frame, a pair of horizontal rails mounted on the frame in spaced side by side relation, a plurality of trolleys riding the rails, a rail section disposed at opposite ends of the rails for switching movement between selective positions in close alinement with adjacent ends of the rails, and means mounting each rail section for said movement in a horizontal plane; said means for mounting each rail section comprising a swinging bar pivoted at one end in a plane between the rails and short of the adjacent ends thereof, the corresponding rail section being mounted in connection with and parallel to said bar, the rails being curved outwardly adjacent said one end thereof whereby the latter are substantially radial of said pivot point.

5. A conveyer including a pair of rails disposed in spaced side by side relation, load supporting trolleys riding said rails, switch units mounted adjacent the ends of the rails and projecting beyond said rail ends to switch trolleys from one rail to the other and a portable frame including end legs supporting said rails and movable in a direction lengthwise of the rails and switch units; the frame being disposed so that the rails at one end thereof and the corresponding switch project beyond the frame and the adjacent end legs.

JACK SALVADOR.