Aug. 18, 1953 A. MARCHESE 2,649,210

FOLDING BOOM CRANE COMBINATION

Filed Aug. 9, 1949 3 Sheets-Sheet 1

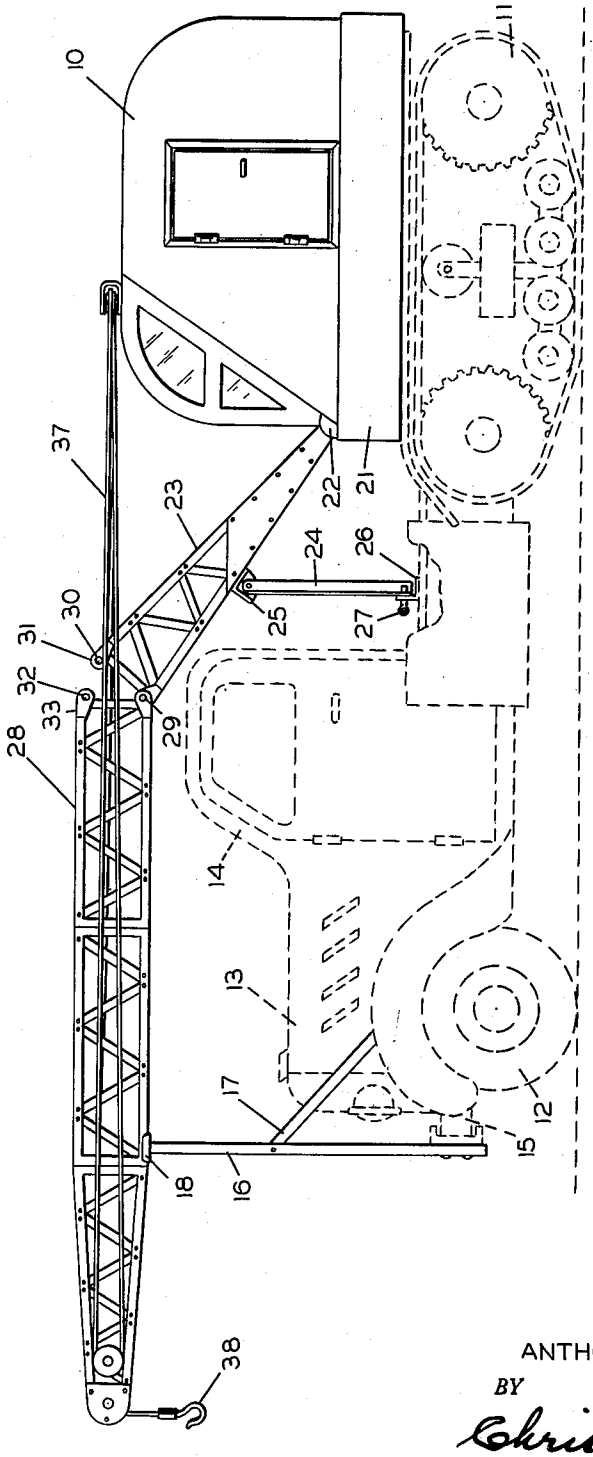


Fig. 1

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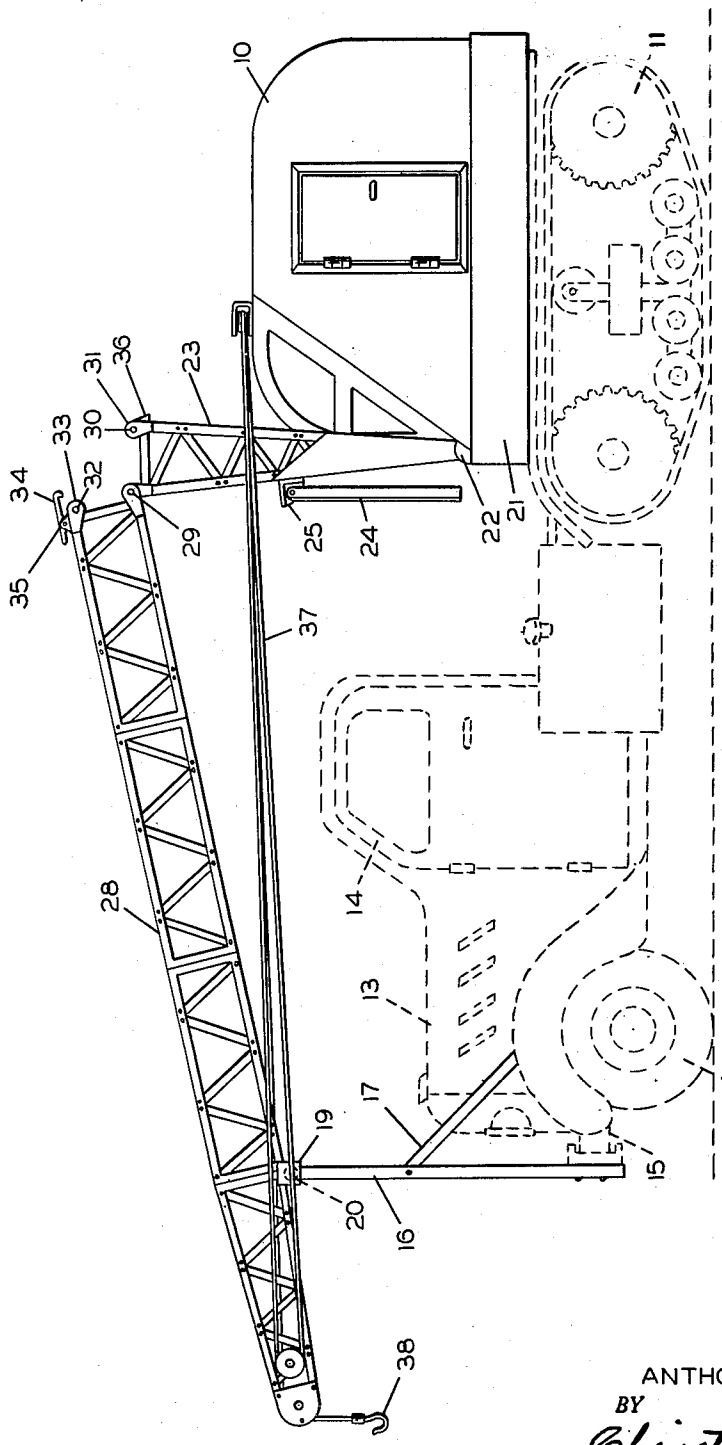


Fig. 2

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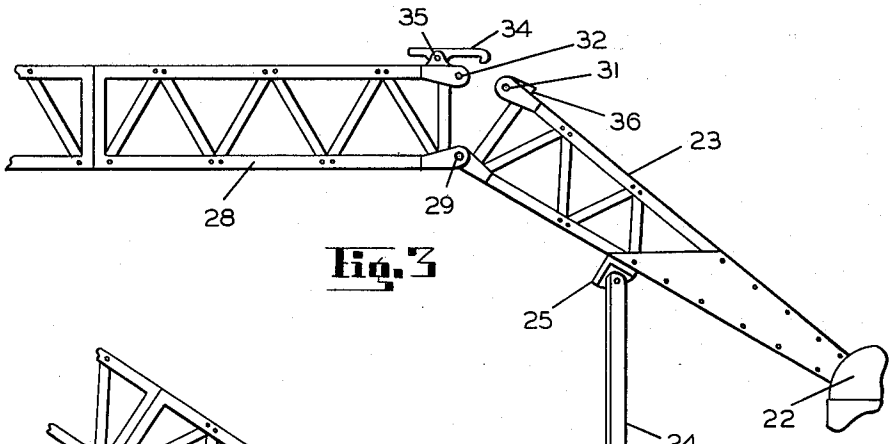


Fig. 3

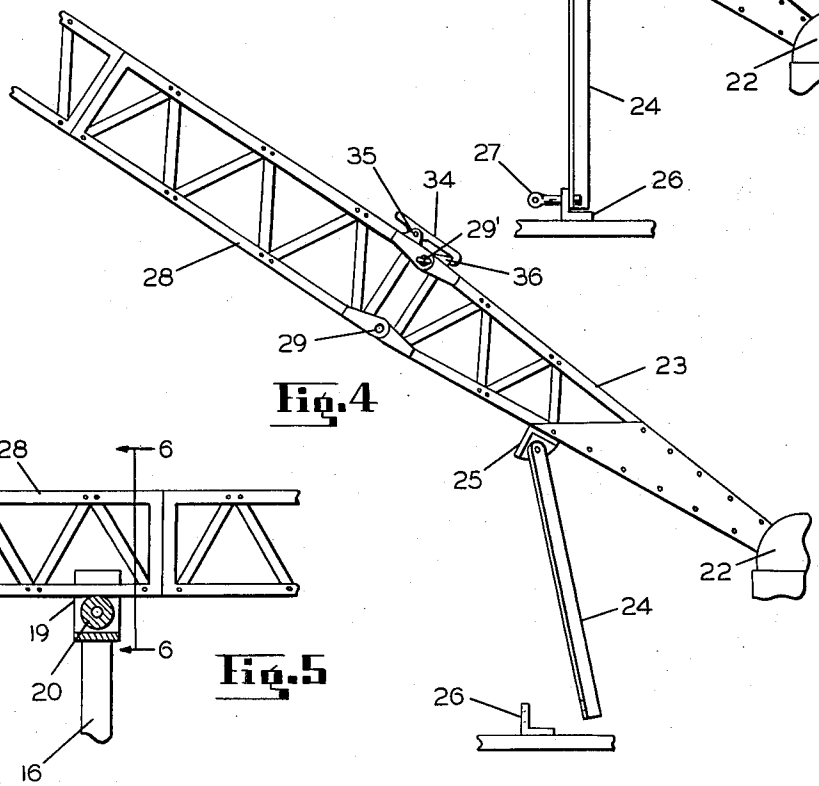


Fig. 4

Fig. 5

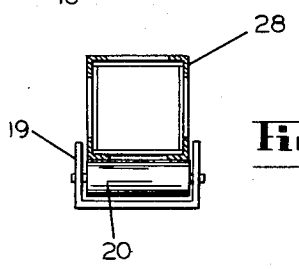


Fig. 6

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UNITED STATES PATENT OFFICE

2,649,210

FOLDING BOOM CRANE COMBINATION

Anthony Marchese, Milwaukee, Wis.

Application August 9, 1949, Serial No. 109,399

1 Claim. (Cl. 212—144)

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My invention relates to improvements in derricks and more particularly to a folding boom for a portable derrick.

The object of my invention is to provide an improved folding or collapsible derrick mast or boom, mounted on a truck or tractor.

Another object of my invention is to provide a derrick that may be folded into a compact unit that will eliminate the hazard created by the conventional type of boom that is of rigid construction, when transported along the streets or highways.

Still another object of my invention is to so construct the device described, to provide absolute safety and strength when the boom is extended to its full length when in use.

It is manifest to anyone familiar with the art that a lifting derrick is constructed of an angularly adjustable boom or arm, actuated by a motor operated winch on which the cables are rotatably applied. However, in the transportation and moving of the device mounted on a truck or tractor, the boom extends either rearwardly or forwardly, and when a forward position is maintained, the cab of the truck necessitates carrying the boom in a high angular position, while carrying the boom rearwardly in a lowered angular position which causes it to protrude outwardly and rearwardly for a great distance, thereby creating a definite hazard when rounding corners or the like.

The device as described, specified and claimed herein provides a means of eliminating all of the above objections, may be economically constructed and provides a safe compact efficient unit that efficiently performs the function for which it is intended.

Other and further objects of my invention will become more apparent as the description proceeds when taken in conjunction with the drawings in which,

Figure 1 is a side view of the device when applied to a truck arrangement shown in phantom, in which the rear portion of the truck is provided with a Caterpillar type of mounting for the actuating means which is enclosed within a cabin, and showing the boom portion of the derrick hingedly supported over the forward cab of the truck.

Figure 2 is a similar view of the device in which the pivotally mounted base section of the boom is in a vertical plane.

Figure 3 is a fragmentary section of the upper and lower boom hingedly supported but in a disengaged position.

Figure 4 is a similar view as shown in Figure 3,

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of a portion of both sections in an engaged position providing rigidity of the boom.

Figure 5 is a fragmentary cross-sectional view of the front roller support and

Figure 6 is a cross-sectional view of the top boom section taken at the line 6—6 in Figure 5.

Similar characters of reference indicate corresponding parts throughout the several views and referring now to the same, the character 10 shows a housing or enclosure incasing the actuating mechanism and cable drum (not shown), and supported by a Caterpillar tractor unit 11 forming a part of the truck assembly having front wheels 12, a motor housing 13 and a driver's cab 14.

The forward end 15 of the truck frame supports a vertical standard 16 which is rigidly supported by a bracket 17 to retain the standard 16 in position. The upper end of the standard 16 is shown in Figure 1 as equipped with a shoe member 18 and in Figure 2 with a yoke 19 acting as a bearing for a roller 20.

The lower base or turntable 21 of the housing 10 is equipped with a hinge 22 which acts as a pivot support for the lower section 23 of the structural boom which has a hinged link member 24 pivotally supported at 25 and an angle shown as 26 acts as a base support for the link member 24, which is shown retained in position by means of a pin 27 when the lower section 23 is in a lowered position as shown in Figure 1 and Figure 3.

There is an upper boom section 28 hingedly attached to one surface of the lower section 23 at 29 and the other surface of the lower section 23 is provided with apertures 30 in brackets 31 registering with apertures 32 in brackets 33 on the end of the upper section. These apertures 30 and 32 may be employed to receive a pin 29' when manually applied after the sections 23 and 28 of the boom are in longitudinal alignment with one another to provide a straight derrick type of boom.

In Figures 2, 3 and 4 there is shown a hook member 34 pivoted on a retaining bracket 35 which is attached to the upper section, and a retaining member 36 attached to the lower portion of the boom. The function of the hook 34 is to enable the operator to place it in engagement with the member 36 when the boom is raised thereby permitting ease of inserting the pin 29' into the apertures 30 and 32 for additional support.

The device lends itself as a conveniently transported boom or derrick and eliminates the long extending boom from creating a hazard when

projecting outward and upward either to the front or rear of the vehicle or truck which is employed as a mounting for the turntable 21.

Obviously the cable construction shown as 37 or the hook member 38 may be of any conventional design or arrangement depending on the purpose for which the device is to be employed.

In the chosen embodiments of my invention, as portrayed by the specification and the drawings forming a part thereof, many changes in the form and configuration of the component parts are permitted without affecting their operativeness or efficiency, and I reserve the right to make such changes without departing from the spirit of my invention or the scope of the appended claim.

Having thus described my invention, what I claim and desire to secure by Letters Patent in the United States is:

A derrick construction of the character described to be hingedly attached at its lower end to an actuating means mounted on a conveyance, said derrick comprising, a sectional boom having an upper and a lower portion hingedly attached to one another, a vertical support extending upward from said conveyance for suspending the

upper portion of the boom in a horizontal position when said boom is inoperative, said lower portion of said boom hingedly supported at its lower end to said conveyance, a support member hingedly attached to the lower portion of said boom, an engaging member mounted on said conveyance for supporting the lower depending end of said hingedly attached support member, and retaining means on said upper and lower portions of said boom at their point of engagement, for retaining both of said portions in longitudinal alignment with one another when said boom is in an operating position.

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