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PORTABLE ELEVATOR SUPPORT

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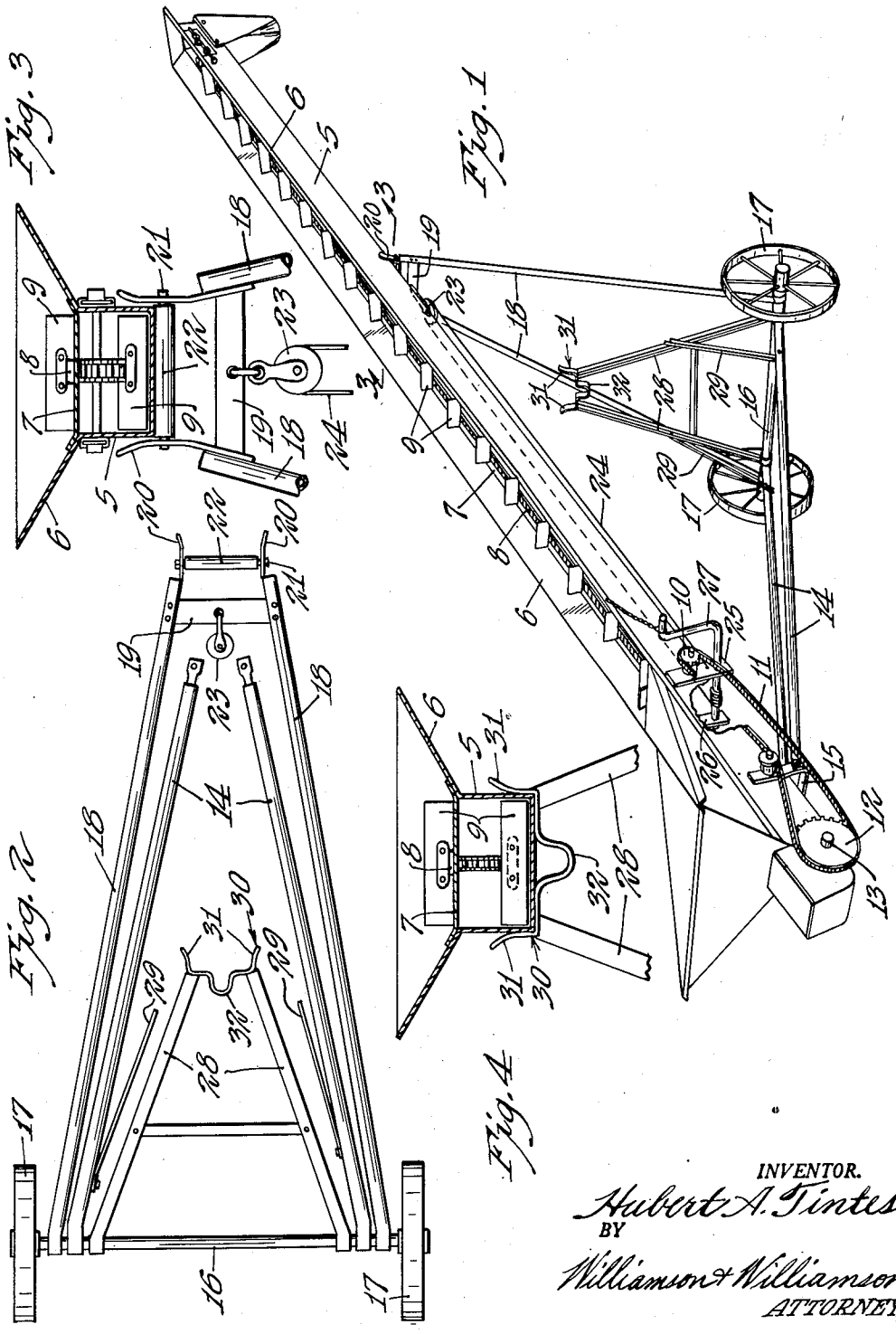


Fig. 1



Fig. 2



Fig. 3



Fig. 4

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## PORTABLE ELEVATOR SUPPORT

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2 Claims. (Cl. 198—122)

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This invention relates to portable elevators and supports therefor.

It is an object of my invention to provide a portable elevator which is normally operated in an inclined position and which may have suitable material elevating mechanism thereon and a wheeled support for the elevator including means for changing the angle of inclination of the elevator and also including stationary means for supporting the elevator in a less sharply inclined and relatively balanced condition so that the elevator can be conveniently moved from place to place.

Another object of the invention is to provide a wheeled support for an elevator which can be conveniently manufactured as a separate unit from the elevator proper but which can be readily attached to the elevator.

Another object of the invention is to provide a wheeled frame for supporting a portable elevator wherein the frame can be conveniently collapsed for shipment independent of the elevator itself.

The above and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawings, wherein like reference characters refer to the same parts throughout the views, and, in which:

Figure 1 is a perspective view of an elevator and its portable supporting structure;

Figure 2 is a plan view of the supporting unit in collapsed position for shipment;

Figure 3 is an enlarged section taken approximately on the line 3—3 of Figure 1; and

Figure 4 is a fragmentary sectional view through the elevator showing it resting upon the upper portion of the stationary supporting member.

The elevator in general includes a trough-like casing 5 having flared upper side portions 6. The elevator casing is provided with a horizontally disposed and longitudinally extending partition 7. Mounted in the casing 5 is an endless chain 8 upon which transverse conveyor elements are mounted. The upper run of the endless chain 8 lies above the partition 7 and is supported thereby, and the lower run has its conveyor elements 9 supported by the bottom of the trough-like casing 5. A motor driven shaft 10 is shown extending from one side of the elevator and connected by a chain 11 to a sprocket 12 on a shaft 13 which is adapted to furnish power to the endless chain 8. The details of this are not fully shown but they are conventional and well understood in the art.

There is shown a horizontal frame unit including a pair of horizontally disposed spaced bars 14 having their rear ends connected to a U-shaped strap 15 connected to and extending beneath the

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lower end of the inclined elevator casing 5. The forward ends of the bars 14 are connected to a transversely disposed axle 16 supported by wheels 17.

Pivotally connected to and extending upwardly from the axle 16 is a more or less upright frame unit including bars 18 connected at their upper ends by a cross member 19. Straps 20 on the upper ends of the bars 18 have a shaft 21 extending between them and on the shaft 21 is a sleeve-like roller 22. The roller 22, as shown in Figure 3, is adapted to lie beneath and support an intermediate portion of the elevator casing 5, and when the frame made up of the members 18 and cross member 19 is moved about its pivotal connection with the axle 16, the roller 22 will move longitudinally of the conveyor casing 5, and as a result the incline and elevation of the elevator will be changed. The straps 20 lie at the sides of the casing 5 to maintain alignment of the parts.

A pulley 23 is connected to the cross member 19, as shown in Figures 2 and 3. A cable 24 has one end anchored to a strap 25 extending downwardly from the near side of the elevator casing 5. The strap 25 and a cooperating strap 26 on the other side of the elevator casing rotatably support a crank 27 to which the other end of the cable 24 is secured and wound about. As shown in Figure 1, the cable 24 extends around the pulley 23 and when the crank 27 is rotated it will lengthen or shorten the cable 24 and thereby change the angle of the upright frame members 18 and the angle of the elevator casing 5.

Extending upwardly from the axle 16 is a second frame including a pair of uprights 28 which are pivotally connected at their lower ends to said axle. A pair of braces 29 connect the uprights 28 and the horizontal main frame bars 14. Extending between the upper portions of the uprights 28 is a cradle 30 having upright portions 31 thereon which are spaced apart to receive the trough 5. A downwardly disposed central portion 32 of the cradle 30 is adapted to accommodate the cable 24. When the trailer frame unit 18, 19 is swung forwardly by lengthening of the cable 24 the upper end of the elevator will be dropped until the elevator finally comes to rest on the cradle 30, as shown in Figure 4.

When the elevator is lowered to come to rest on the stationary upright frame unit 28 and cradle 30, it is so balanced that a person can pick up the lower end of the elevator with little difficulty and it can be conveniently connected to a truck or tractor so that it can be transported considerable distances. When the lower end is raised and connected to a vehicle the elevator is in a more nearly horizontal position and a balancing of its weight on the wheels 17 permits it to be moved with considerable safety. In addition the elevator can be shifted about the farmyard or other

location by hand because of the proper supporting of the elevator on the wheels and the stationary upright support as well as the pivoted upright support.

Attention is called to Figure 2, wherein both of the upright frame members are swung down approximately in the same plane with the horizontal main frame members **14**. When collapsed the braces **29** for the uprights **28** must be disconnected from the main frame members **14**, but in the collapsed position the movable elevator support is compactly arranged for storage and shipment.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What I claim is:

1. A portable elevator support constructed for attachment to an inclined elevator casing, said support comprising a wheeled axle, at least three frame structures each including a pair of spaced frame elements, all journalled on one end on said axle, one of said frame structures forming a generally upstanding elevator frame adapted to engage at the upper end thereof an intermediate portion of an elevator casing, another frame structure forming a substantially horizontal frame adapted for connection at its outer end to the lower portion of the elevator casing, means for varying the spaced relation between said two frame structures for adjusting the angle of inclination of the casing, the third frame structure forming a casing rest and, when in operative position, being disposed intermediate the other two frame structures, the frame structure forming said rest being substantially shorter than the other two frame structures and having the lower ends of the frame elements thereof disposed on said axle within the elements of the other two frame structures, one of said other frame structures being shorter than the other and the frame elements of said shorter structure being disposed within the frame elements of the longer structure and being connected with the axle intermediate the connection of the axle with the rest frame structure and the longer frame structure, and means for releasably holding said rest frame structure in generally upright operative position between the other two frame structures whereby all of said frame structures may be compactly collapsed within the longest frame structure to produce a compact shipping unit.

2. A portable elevator support constructed for attachment to an inclined elevator casing, said support comprising a wheeled axle structure, at least three frame structures each including a pair of spaced frame elements, all concentrically journalled on one end for oscillation on said axle, all of said frame structures being of different lengths with the spacing between the frame elements of the longest structure being disposed outwardly of the other two structures and the frame elements of the shortest structure being disposed inwardly of the other two structures to permit compact nesting of all three frame structures when in collapsed position, the longest of said frame structures being adapted to slidably engage intermediate portions of an elevator casing and the next longest frame structure being adapted to be connected with the lower portion of said elevator casing, means for shiftably moving the longest frame structure on the elevator casing, and means for releasably bracing the shortest frame structure in upright position to form a rest intermediate the other two frame structures to stably support the elevator casing for transportation from one location to another.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 326,801 | Sprague | Sept. 22, 1885 |
| 676,504 | Kassel | June 18, 1901 |
| 1,750,855 | Neighbour | Mar. 18, 1930 |
| 2,391,053 | Jackson | Dec. 18, 1945 |
| 2,403,636 | Chantland | July 9, 1946 |
| 2,438,527 | Werner | Mar. 30, 1948 |

FOREIGN PATENTS

| Number | Country | Date |
|---|---|---|
| 513,450 | Germany | Nov. 27, 1930 |