Sept. 1, 1931. H. F. GOSS 1,821,798

CARRYING FORK ATTACHMENT FOR CLAY PRODUCTS

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FIG. 1.

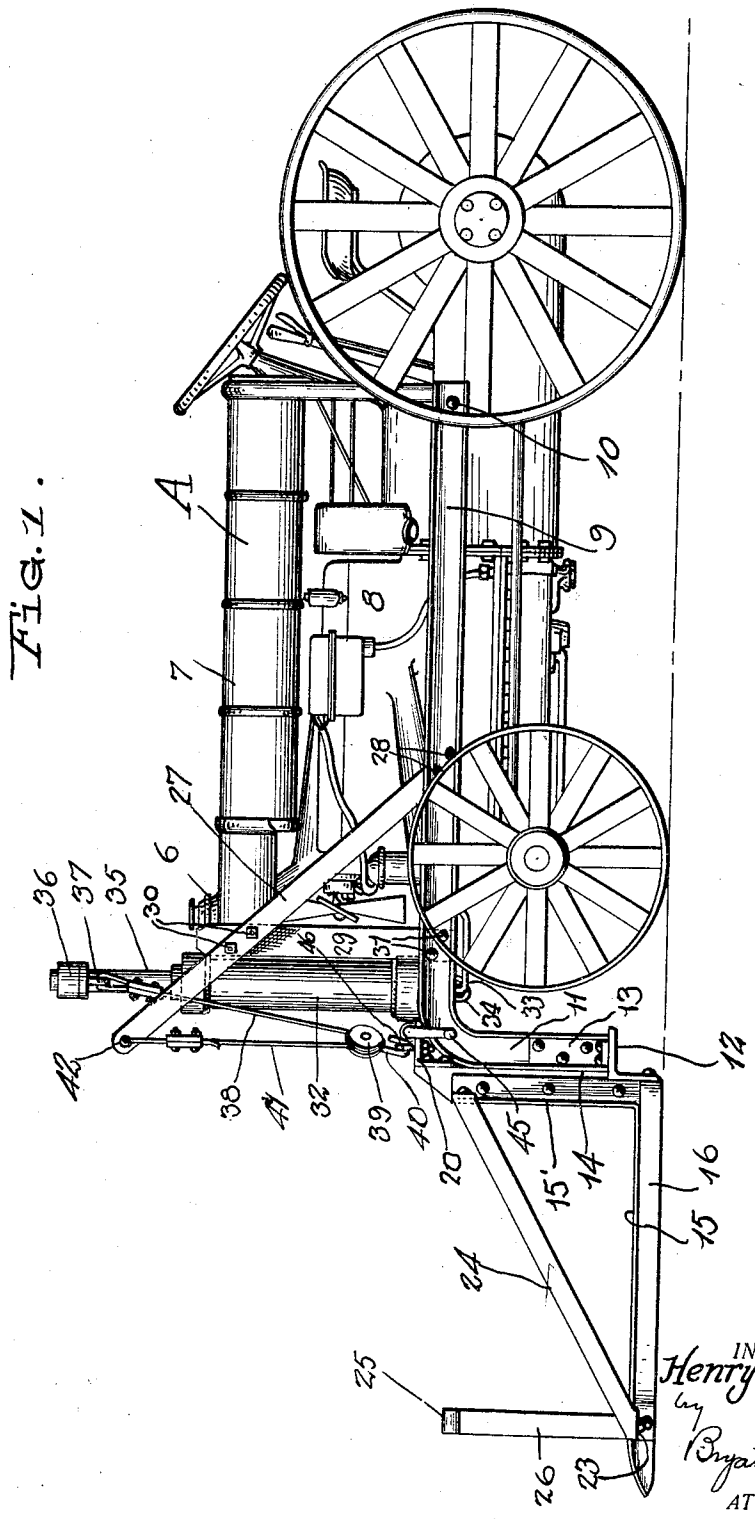

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Fig. 4.

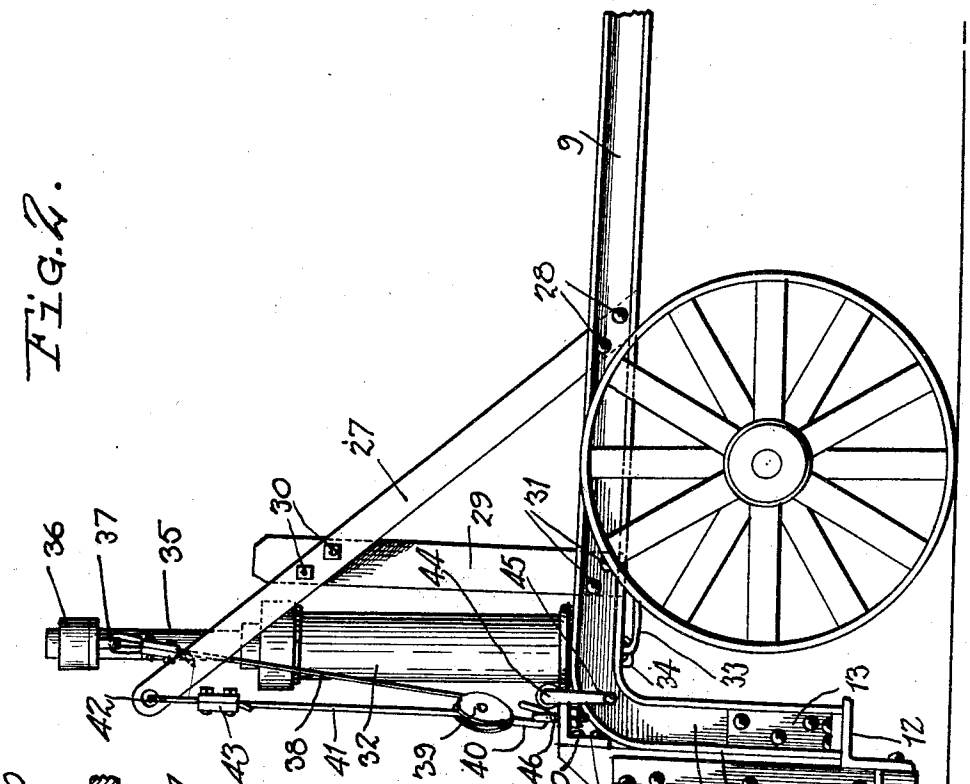

Fig. 5.

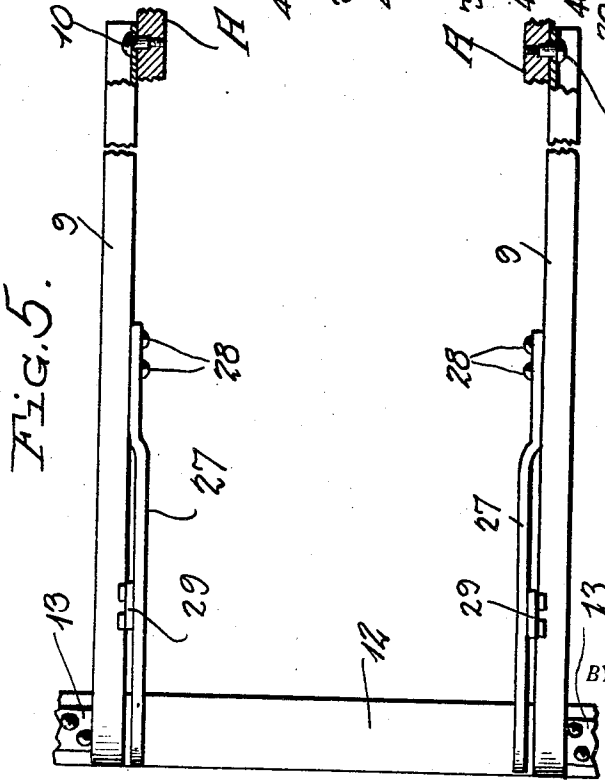

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FIG. 3.

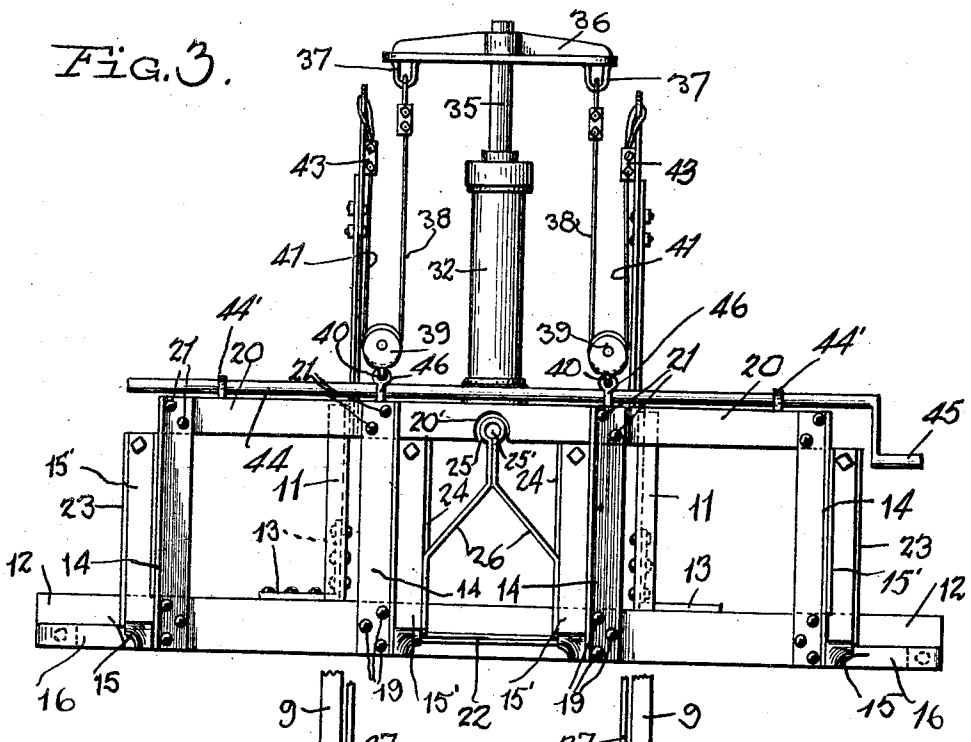
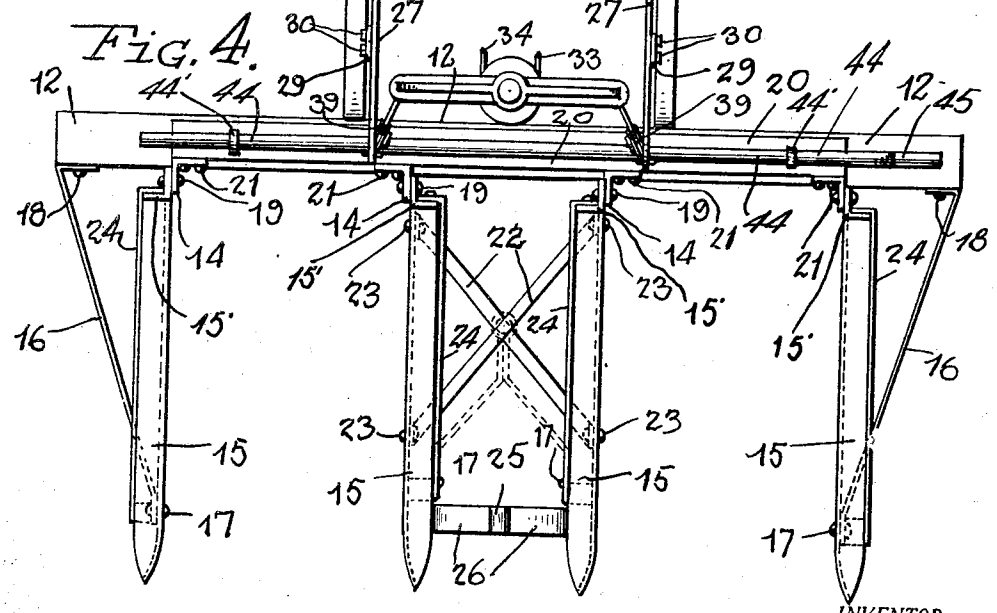


FIG. 4.



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UNITED STATES PATENT OFFICE

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CARRYING FORK ATTACHMENT FOR CLAY PRODUCTS

Application filed October 24, 1928. Serial No. 314,744.

This invention relates to hoisting attachments of the type particularly adapted to be used in the brick industry and other industries of a similar nature wherein it is necessary to transport articles in stacked arrangement and in other industries where materials can be stacked upon pallets, trays, platforms or frames and swiftly and economically handled.

A primary object of the invention is to provide a device of the above mentioned character which may be readily attached to a truck, tractor, crane (traveling or stationary) or other vehicle and particularly adapted for hoisting, transporting and hauling.

A still further object of the invention is to provide an attachment for a tractor, motor truck, crane or the like having means thereon for operating the hoisting mechanism, such as a motor or internal combustion engine with means to propel a pump for hydraulic lifting medium or power transmitted to a mechanical cable hoist.

A still further object of the invention is to provide an attachment of the character stated having a plurality of fingers or tines which may be lowered to the ground or platform so that the same may be moved under the load easily and rapidly and without damage to the material being handled and after which the fingers are raised for hoisting the load off of the ground or platform and in order to transport the load to a different point or location.

In the brick making industry it has heretofore been common practice to load, stack or hack the freshly molded product on wheelbarrows, wheel trucks moved by hand power, wheel cars operated on steel rails and conveyors (belt and cable types) or the like and from the point of loading, transport it to the point of drying, stiffening or curing and after this drying operation has been completed the material is again picked up or moved to the burning kiln. The dried material is then set or stacked in the burning kiln in the proper manner well known to the art in any one of the known types of kilns. Such practice very often causes a very serious loss through breakage and deforming freshly molded material while being handled by careless workmen or faulty transportation equipment, thereby causing a low efficiency rating in the general manufacture of bricks and other clay products.

Another disadvantage resulting from the above practice is that it necessitates a large number of workmen to perform or carry out the above methods of transportation in the brick making industry, thereby making the same very costly. It is quite obvious that if the expense connected with the manufacture of bricks is reduced that the brick or clay product may be sold for less than has heretofore been done.

It is proposed to overcome these disadvantages by applying an attachment to a tractor, truck or other power vehicle adapted to be moved under a stacked arrangement of articles, previously hacked or stacked upon a platform, pallet or tray. The attachment after being moved under the platform supporting the stacked articles is hoisted off the ground and may then be transported to a different location and to different steps in the clay product industry.

Thus a saving is effected in that it is easier to move a load of stacked articles from one point to another than it is to toss or handle each article separately from the transport-medium to the said point, thus eliminating workmen ordinarily employed in these operations.

The efficiency of the plant employing the system above outlined and the apparatus hereinafter described is materially increased and the cost of production of clay products is materially reduced. Other objects and advantages of this invention will become apparent during the course of the following description.

In the accompanying drawings:—

Figure 1 is a side elevational view of a tractor with the attachment applied;

Figure 2 is a side elevational view of the attachment;

Figure 3 is a front elevational view of the attachment showing the same connected with hoisting mechanism;

Figure 4 is a top plan view showing the ar-

rangement of the supporting fingers of the attachment;

Figure 5 is a fragmentary plan view of the side supporting bars of the attachment.

As illustrated in the drawings a tractor A is used, however, it is to be understood that the attachment may be applied to any other suitable form of vehicle. The tractor as shown includes a radiator 6, tank 7, engine 8 all of usual pattern. The arrangement of the tractor shown in the drawings is merely for the purpose of illustration.

The attachment comprises side bars 9 pivoted to the side frame of the tractor as at 10 preferably near the rear portion of the tractor to prevent the load raising device from tilting as it is being elevated or lowered. The side bars 9 are provided with angularly disposed ends 11 which extend downwardly and are connected to a cross beam 12 by angle irons 13. The cross beam 12 is adapted to support a series of vertical angle irons 14. A series of fingers 15 having vertical angle iron extensions 15′ are adapted to be secured to the vertical angle bars 14 by rivets 19. The fingers 15 are braced by suitable bars 16 having ends connected with the outer portions of the exteriorly positioned fingers as at 17. The brace bars 16 are adapted to support the fingers 15 and prevent lateral movement thereof.

The upper ends of the vertical angle irons 14 are connected to a transverse angle iron 20 by means of rivets 21. The intermediate fingers 15 are braced together by means of transverse bracing bars 22 secured at 23 to the flange portions of the supporting fingers 15. The hoisting fingers may be vertically braced by brace bars 24 connected to the outer ends of the hoisting fingers 15 and having their inner ends connected to the upper cross bar 20. Both connections may be made by the use of rivets or the like. A yoke 25 is pivotally connected with the intermediate finger bars 15 and may swing from a vertical position to a horizontal position and vice versa. This yoke serves as a guide for an engine cranking shaft when it is desired to start the engine and also serves to assist in strengthening the structure. The yoke 25 is provided with sloping sides 26 so that the trays may be guided upon the fingers of the load supporting device should the yoke be in an upright position.

The yoke 25 is provided with an eye portion 25^1 which is adapted to register with a cutaway portion 20^1 formed in the upper cross bar 20 and in the side wall thereof. When the yoke 25 is in a vertical position it may act as a support for an engine cranking bar 44 having a crank handle 45. The engine cranking bar 44 is slidably mounted in eyelets 44^1 carried by the upper face of the cross bar 20, better shown in Figure 4. When it is desired to crank the vehicle the crank 44 is passed through the loop portion 25^1 of the yoke and if the load supporting device is in a lowered position the end of the crank will pass through the cutaway portion 25 formed in the upper cross bar 20.

Bars 27 have their lower ends connected with the side bars 9 by rivets 28 and the said bars 27 are upwardly and forwardly inclined. The bars 27 extend over the forward portions of the bars 9 and are supported by braces 29 fastened to the bars 27 as at 30 and to the bars 9 as at 31. The tractor A has a fluid pressure hoisting device mounted upon the forward portion thereof and the said hoisting device includes a cylinder 32 having intake and exhaust pipes 33 and 34. The intake and exhaust pipes may be secured to a pumping device (not shown) for pumping fluid pressure and having the controls in close proximity to the steering wheel of the tractor. The cylinder 32 is provided with a piston rod 35 to which is secured a yoke 36 having loops 37 at the opposite ends thereof to provide means for securing the hoisting ropes 38. The hoisting ropes 38 pass around blocks 39 and the pulley blocks carry hooks 40 which are adapted to engage in eyes 46 screw threaded in the upper face of the cross bar 20. The end portions 41 of the ropes 38 pass through openings 42 in the bars 27 and are fastened by means of clevises 43 to the upper ends of the bars 27.

When it is desired to lift and transport articles which have been stacked upon pallets, the engine of the vehicle A is started by removing the crank 44 which is placed on top of the cross bar 20 and slidably mounted in the screw eyes 44′. The crank 44 is then passed through the loop portion 25′ of the yoke 25 and the free end of the crank is adapted to pass through the cutaway portion 20′ and thence to the engine crank shaft. The engine having been started, the fingers are lowered and the tractor is moved toward the stacks of articles so that the fingers are projected under the edge portions of the pallets upon which the articles are stacked. The forward end of the attachment is then swung in an upward direction by means of the tractor operated hoist 32 or by other hoisting medium, and through the medium of hoisting blocks 39 and cables 38, or other type of power and hoisting transmission. It is understood that the crank 44 and manner of its operation as above described is used for illustration only and that other well known motor starting devices may be used in connection with the power unit. The tractor is then moved toward the point at which it is desired to deposit the loaded pallets. The fingers are extended over the point at which it is desired to place the pallets and then the fingers are lowered so that the runners or lower surfaces of the pallets come in contact with the supporting surfaces upon which the pallets are

to be deposited. The tractor is then backed out and the fingers are withdrawn from under the pallets. Thus the loaded pallets are deposited at the desired points without requiring handling of the products stacked thereon.

Having thus described the invention what is claimed is:—

1. In combination with a vehicle having hoisting apparatus, an attachment comprising side bars longitudinally arranged, pivoted at their rear ends and having angularly disposed forward ends, upper and lower cross bars connected with the end portions of the side bars, fingers carried by the lower cross bar and braced from the upper cross bar, and means associated with the vehicle for elevating the side bars.

2. In combination with a vehicle having hoisting apparatus, side bars pivoted to the vehicle at their rear ends and having downwardly disposed end portions upper and lower, cross bars carried at the forward ends of the downwardly disposed portion of the side bars, fingers carried by the lower cross bar, braces extending from the fingers toward the upper cross bar, and connections for connecting the cross bars to the hoisting apparatus.

In testimony whereof I affix my signature.

HENRY F. GOSS.