Jan. 24, 1956 T. T. VIOLETTE 2,732,247

BARREL LIFTING TOOL

Filed May 10, 1952

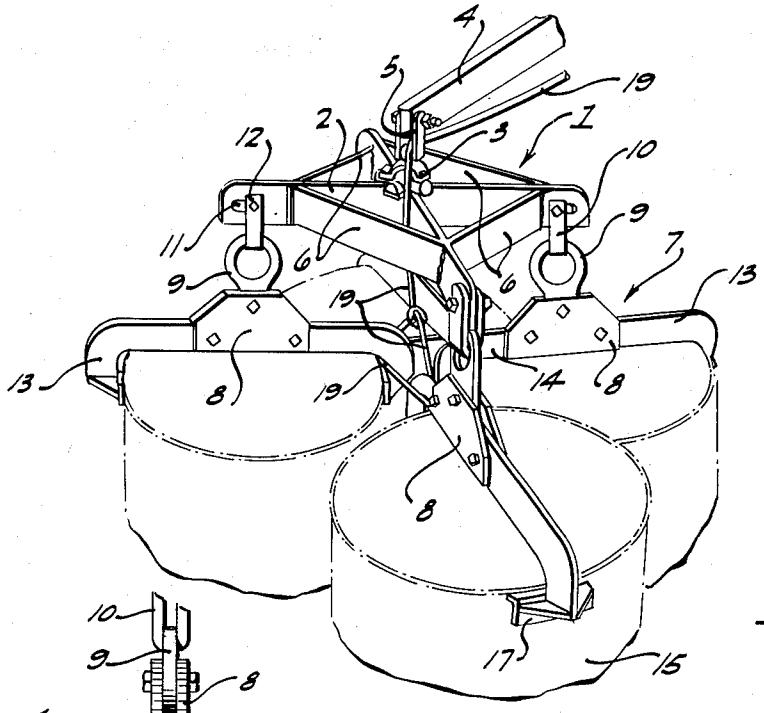


FIG. 1.

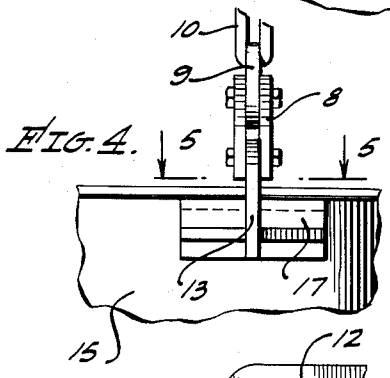


FIG. 4.

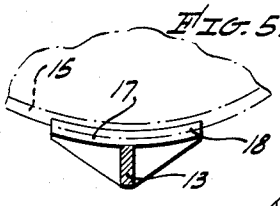


FIG. 5.



FIG. 3.

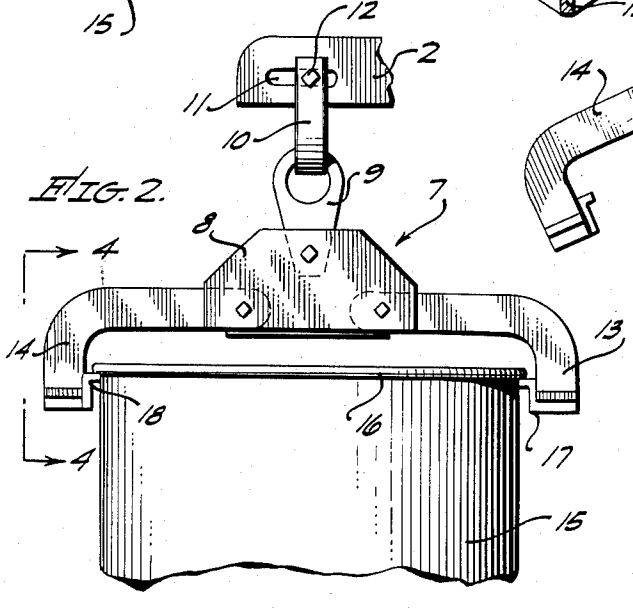


FIG. 2.

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# BARREL LIFTING TOOL

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5 Claims. (Cl. 294—87.22)

This invention relates to a barrel lifting tool whereby a plurality of barrels (preferably four) may be simultaneously lifted and transported from place to place, or stacked, as may be desired.

An object of my invention is to provide a barrel lifting tool whereby the lifting of the barrels is accomplished by pressing a plurality of barrels together at their inner meeting faces by means of tongs which engage each individual barrel.

Another object of my invention is to provide a novel barrel lifting tool which accomplishes the lifting of a plurality of barrels by exerting a vertical force through a tong on each of the barrels and simultaneously exerting a horizontal component of force on each of the barrels to be lifted.

A feature of my invention is to provide a barrel lifting tool which engages an outwardly projecting bead on the barrel chime and simultaneously lifting a number of barrels without crushing or deforming the barrels as to shape.

Another feature of my invention is to engage a plurality of barrels which are positioned adjacent to each other but not, however, necessarily in regular geometric shape relative to each other (such as a square or triangle) and still effectively engage each of the barrels with an individual tong and then moving the various adjacent barrels so that they will touch each other at their inner meeting faces.

Still another object of my invention is to provide a novel barrel lifting tool which can be effectively operated by a single operator, and in which that operator can simultaneously lift a number of barrels.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a perspective view of my barrel lifting tool.

Figure 2 is a side elevation of one of the tong units included in my barrel lifting tool.

Figure 3 is a side elevation of one of the tongs employed in my barrel lifting tool.

Figure 4 is a fragmentary end view of one of the tongs as viewed from the line 4—4 of Figure 2.

Figure 5 is a sectional view taken on the line 5—5 of Figure 4.

Referring more particularly to the drawing, my barrel lifting tool includes a frame 1 which is formed with a plurality of radial arms 2. These arms are preferably four in number, although a lesser or greater number may be employed, if desired. The arms 2 will meet at the center and are fixedly attached to a hook fixture 3, which is attached to the beam 4 of a hoist, by means of a link 5 which is pivotly secured to the end of the beam 4. The arms 2 of the frame 1 are rigidly held in proper position relative to each other by means of the brace members 6. These braces are welded or otherwise fixedly attached to the arms 2. The beam 4 of the hoist can be moved vertically for the purpose of lifting



the barrels, all of which is usual and well known in the art, since lifting cranes are usual and well known.

On the outer ends of each of the arms 2, I mount a tong unit 7, and since these units are all identical, only one will be described in detail.

The tong unit 7 consists of a block 8 from which a ring 9 extends. The ring 9 is supported in a strap 10 which is mounted on the outer end of an arm 2. The arm 2 is provided with an elongated slot 11 and a bolt 12 extends through the strap 10 and through the slot 11, thus adjustably mounting the tong unit 7 on the arm 2, that is, the tong unit can slide radially on the arm 2 within the limits of the elongated slot 11. A pair of hooks 13 and 14 are pivotly secured at their inner ends to the block 8. The barrel 15 which is to be lifted has a chime bead or flange 16 at its top, and this chime bead is engaged by the finger 17 which is fixedly attached to each of the hooks. The fingers each have an inwardly projecting flange 18 at the top which extends under and engages the chime bead 16. A rope or cable 19 is looped around the inner hooks 14 of each tong unit so that the entire assembly of tong units can be pulled inwardly for the purpose of causing each of the tong units to engage a barrel.

In operation the barrels 15 are usually grouped in units of four, and it is not necessary that the four barrels shall be equally spaced nor geometrically placed relative to each other. The crane beam 4 lowers the barrel lifting frame 1 over the barrels and each tong unit 7 drops over one of the barrels until the finger 17 on the hooks engages the side of the barrel. The crane beam 4 is now moved upwardly until the flanges 18 engage the chime bead 16. The various tong units 7 are so arranged on the frame 1 that when this frame is lifted upwardly by the crane beam 4, that there will be a horizontal or inwardly extending component of force which tends to press all of the barrels together at their inner meeting faces, and thus assisting in holding the plurality of barrels together as a single unit or package. Each tong unit 7 is pivotally attached to one of the arms 2 by the strap 10 and this strap is mounted in a slot 11 in the arm, thus allowing each of the tong units to move inwardly on the arm 2, especially when the cable 19 is pulled by the operator. The vertical lifting is also accomplished by the fingers 17 as will be evident.

Having described my invention, I claim:

1. A barrel lifting tool comprising a frame, a hook fixture on said frame attachable to a hoist beam of a lifting crane, a plurality of radially extending arms on said frame, a tong unit on each of said arms, mounting means on each of the tong units, each of said arms having an elongated slot therein to receive the mounting means, each tong unit including a pair of hooks engageable with the outer surface of a barrel means pivotally mounting the hooks on said mounting means, all of said tong units being simultaneously raised and lowered with said frame.

2. A barrel lifting tool comprising a frame including four arms, said arms projecting radially, a hook fixture at the center of said frame attachable to a hoist beam on a lifting crane, a tong unit on the outer end of each of said arms, each tong unit including a central block, a pair of hooks pivotally mounted on said blocks, said hooks being engageable with the outer surface of a barrel, a ring projecting from the block, a strap attached to the ring, said strap being pivotly attached to an arm, all of said tong units being simultaneously raised and lowered with said frame.

3. A barrel lifting tool comprising a frame including four arms, said arms projecting radially, a hook fixture at the center of said frame attachable to a hoist beam on a lifting crane, a tong unit on the outer end of each of

said arms, each tong unit including a central block, a pair of hooks pivotally mounted on said blocks, said hooks being engageable with the outer surface of a barrel, a ring projecting from the block, a strap attached to the ring, said strap being pivotally attached to an arm, all of said tong units being simultaneously raised and lowered with said frame, each of said arms having an elongated slot therein, and a bolt extending through the strap and through said slot.

4. A barrel lifting tool comprising a frame including four arms, each of said arms projecting radially from the center of the frame, a hook fixture at the center of said frame attachable to a hoist beam on the lifting crane, a tong unit on the outer end of each of said arms, each tong unit including a central block, a hook pivotally mounted on opposite ends of each of said blocks, said hooks being engageable with the outer surface of a barrel, a ring mounted on each of the blocks, a strap attached to each of the rings, a bolt extending through the strap and through an arm to pivotally attach the strap to the arm, all of said units being simultaneously raised and lowered with said frame, and means engaging the innermost hooks whereby the tong units are moved inwardly.

5. A barrel lifting tool comprising a frame including four arms, each of said arms projecting radially from the center of the frame, a hook fixture at the center of said frame attachable to a hoist beam on the lifting crane, a tong unit on the outer end of each of said arms, each tong unit including a central block, a hook pivotally mounted on opposite ends of each of said blocks, said hooks being engageable with the outer surface of a barrel, a ring mounted on each of the blocks, a strap attached to each of the rings, a bolt extending through the strap and through an arm to pivotally attach the strap to the arm, all of said units being simultaneously raised and lowered with said frame, and manually operable means engaging the innermost hooks whereby the tong units are moved inwardly.



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