Jan. 15, 1952 C. V. SASS 2,582,759

DUMP BOX ATTACHMENT FOR HYDAULIC FORK LIFT

Filed Jan. 22, 1951 5 Sheets-Sheet 1

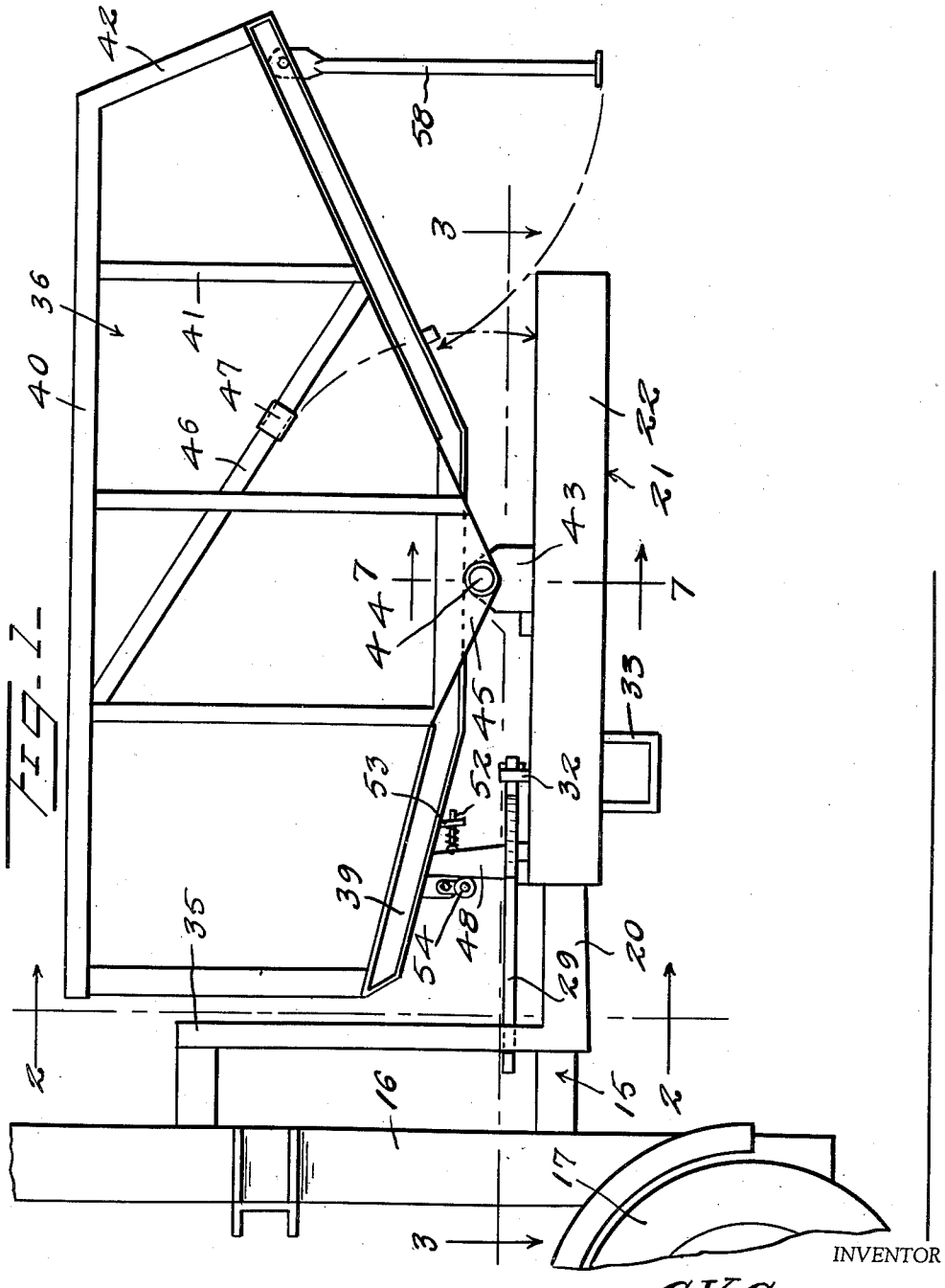


FIG. 1

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Fig. 2.

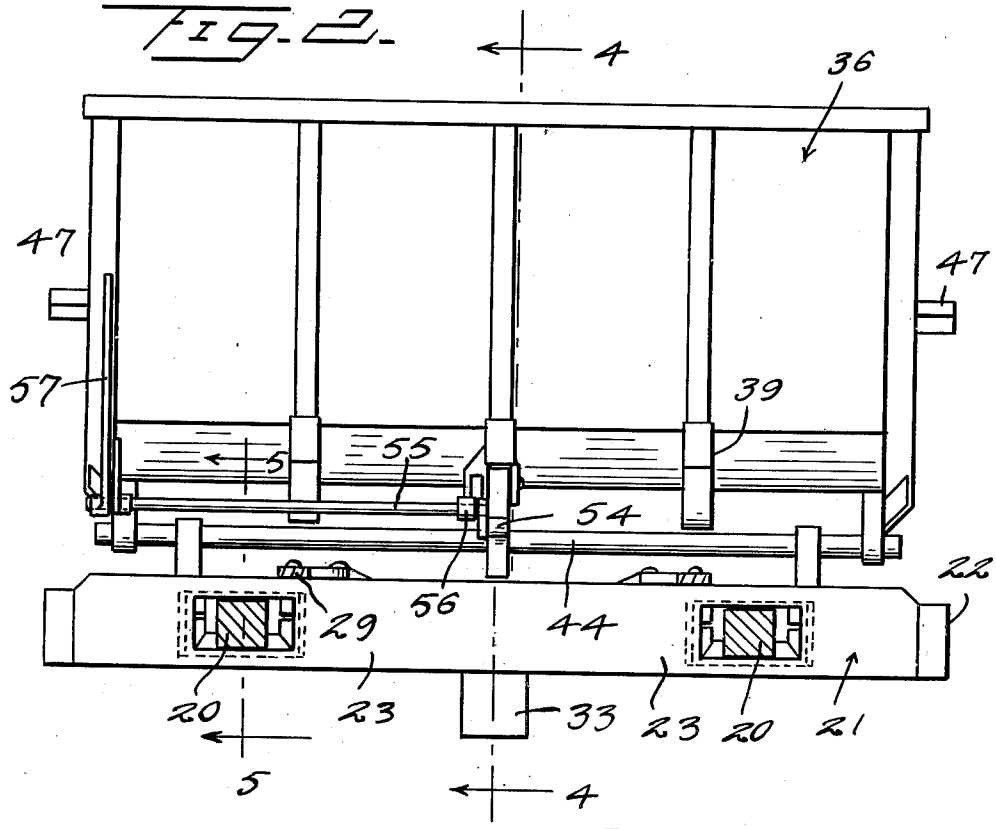


Fig. 5.

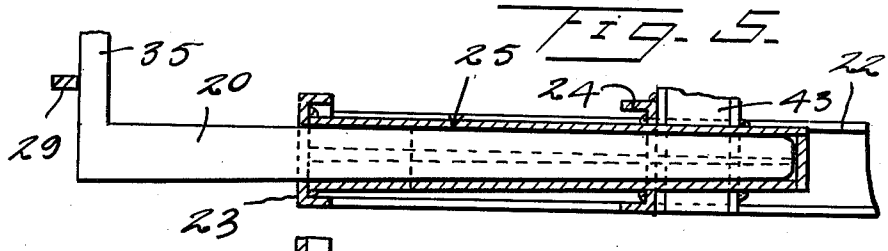
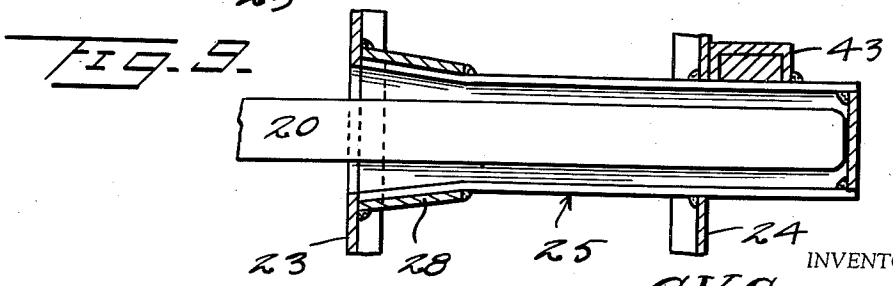


Fig. 9.



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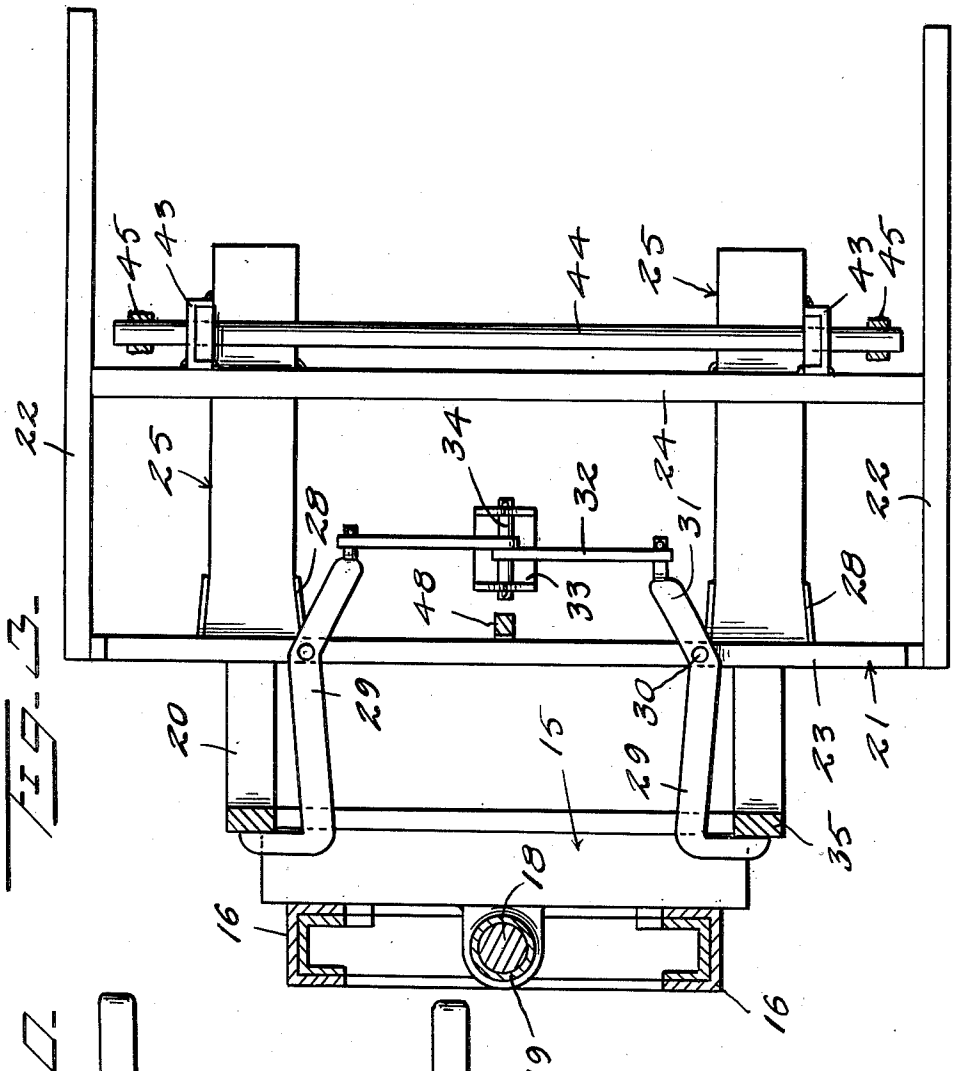


FIG. 3.

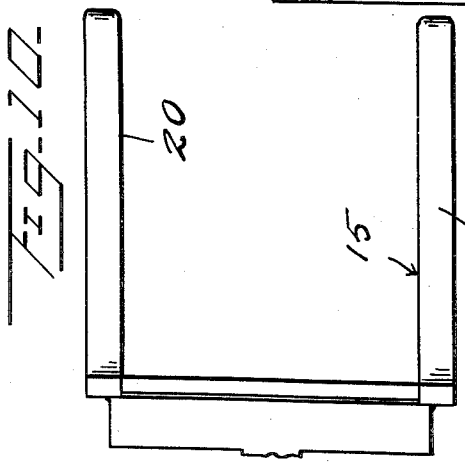


FIG. 10.

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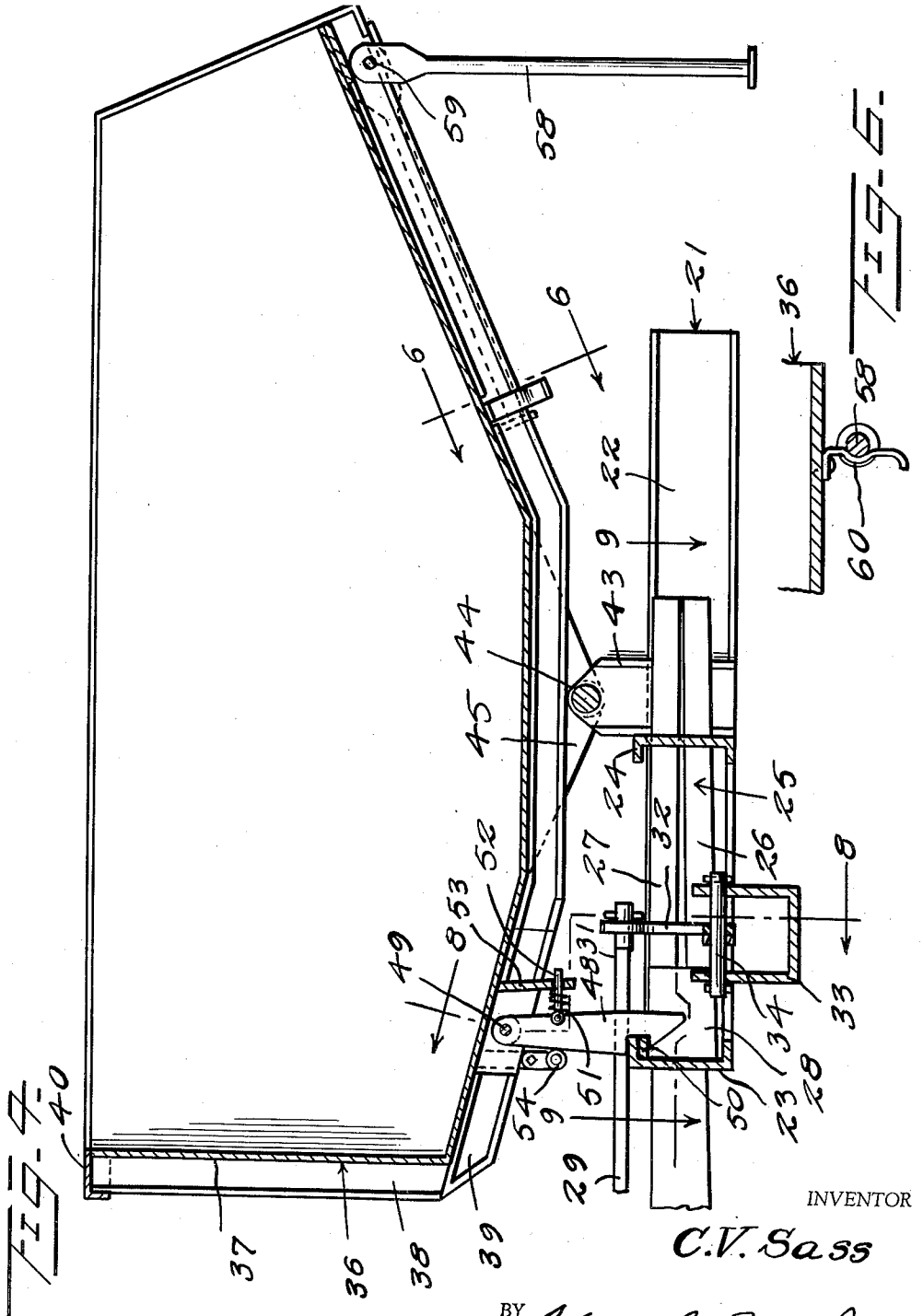


FIG. 4.

FIG. 5.

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DUMP BOX ATTACHMENT FOR HYDAULIC FORK LIFT

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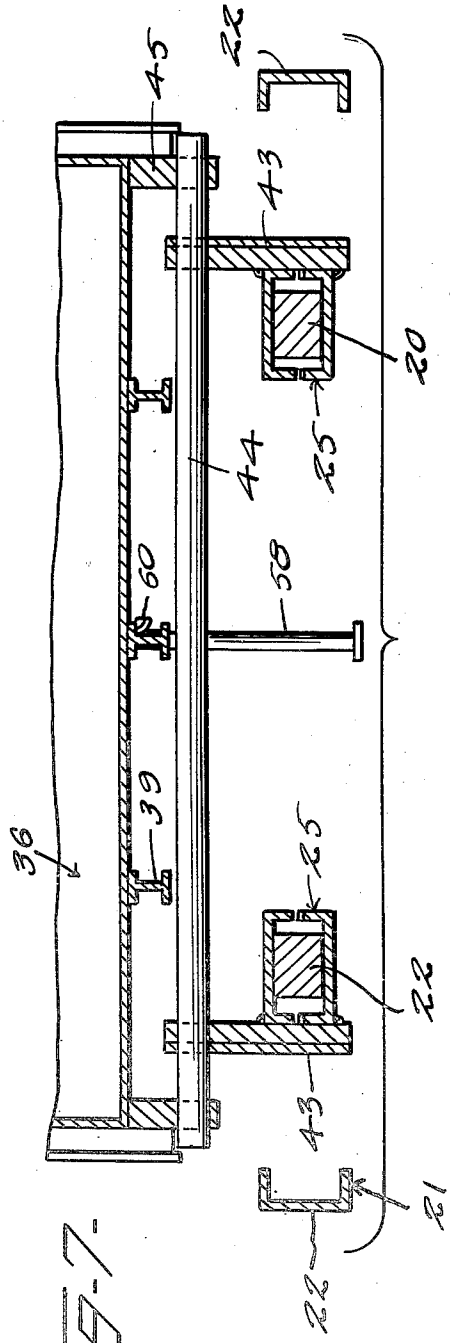


Fig. 1.

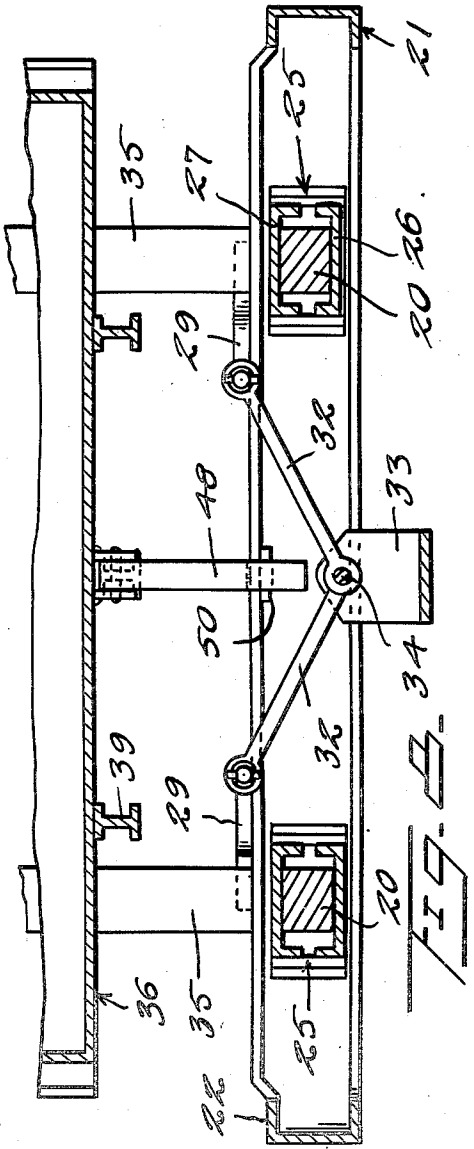


Fig. 4.

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DUMP BOX ATTACHMENT FOR HYDRAULIC FORK LIFT

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Application January 22, 1951, Serial No. 207,189

4 Claims. (Cl. 214—120)

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This invention relates to a refuse dump box and scoop attachment for a stacker and loader.

In lumber stacker and loaders an elevating fork is provided which is operated by hydraulic or mechanical means, and the fork is mounted on a mobile frame. In order to provide a means whereby the stacker may be converted into a dirt or loose material handling means, I have provided a scoop with an improved means for detachably mounting the scoop on the lifting fork.

Another object of this invention is to provide in an attachment of this kind a spring-pressed latch for latching the scoop relative to the base frame, and an extendible element pivotally mounted on the scoop for engagement with the ground to swing the scoop from a dumping position to a horizontal carrying position when the lift is lowered.

A further object of this invention is to provide an improved latching means whereby the scoop may be detachably secured to the lifting fork without the use of tools.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a detailed side elevation of a scoop attachment for a material lifting fork showing the attachment in horizontal carrying position.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary sectional view taken on the line 5—5 of Figure 2

Figure 6 is a fragmentary sectional plan view taken on the line 6—6 of Figure 4.

Figure 7 is a fragmentary sectional view taken on the line 7—7 of Figure 1.

Figure 8 is a fragmentary sectional view taken on the line 8—8 of Figure 4.

Figure 9 is a fragmentary sectional view taken on the line 9—9 of Figure 4.

Figure 10 is a fragmentary plan view of the material lifting fork.

Referring to the drawings the numeral 15 designates generally a lifting fork which is vertically adjustable in an upright frame structure 15 carried by a mobile member 17. The lifting fork 15 with the supporting structure therefor is conventional and, as herein disclosed the fork 15 is hydraulically raised or lowered by means of a plunger 18 which is slidable in a cylinder 19. The lifting fork 15 comprises a pair of forwardly projecting arms 20 which are

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adapted to engage beneath a pile of material such as lumber or the like for raising or lowering and transporting the stack of material.

In order to provide a means whereby the lifting fork 15 may be converted into a loose material carrier, I have provided a detachable frame structure generally designated as 21 which constitutes a base frame structure. The frame structure 21 includes a pair of parallel side members 22 which are connected together by a rear connecting member 23 and by a second connecting member 24. A pair of tubular members generally designated as 25 are secured to the frame 21 and each tubular member 25 comprises a pair of confronting channel members 26 and 27 which are extended through the frame members 23 and 24 and welded or otherwise firmly secured thereto. The tubular members 25 form sockets within which the arms 20 of the lifting fork are adapted to removably engage.

The rear ends of the tubular members 25 are flared outwardly as indicated at 28 to facilitate the insertion of the arms of the lifting fork therein. A pair of latching hooks 29 are pivotally mounted as at 30 on the rear frame member 23 and include forwardly projecting arms 31 with which a pair of downwardly convergent links 32 are pivotally connected. The links 32 are secured to a U-shaped weight member 33, a shaft or pin 34 extending through the arms of the U-shaped weight member 33 and the adjacent ends of the links 32. The weight member 33 is adapted to gravitatingly hold the latching hooks 29 in engagement with the upright members 35 which form part of the conventional lifting fork 15.

A scoop generally designated as 36 is rockably secured to the base frame 21 and comprises a sheet metal scoop body 37 which is reinforced by means of a plurality of rear end reinforcing bars 38 and bottom reinforcing bars 39. The scoop 36 also includes upper reinforcing bars 40 and side reinforcing bars 41. A downwardly and forwardly inclined reinforcing bar 42 extends from each one of the side upper reinforcing bars 40. A pair of upwardly projecting bearing members 43 are carried by each of the side members 22 of the base frame 21 and a shaft 44 extends through the bearing members 43 and through bearing plates 45 which are fixedly secured to and project downwardly from the opposite sides of the scoop 36.

A diagonally disposed bracing bar 46 is secured to each side of the scoop 36 and has projecting outwardly or laterally therefrom a stop member 47 which is adapted upon downward swinging of the forward end of the scoop to engage a side member 22 so as to thereby limit the downward swinging of the scoop when the latter is being discharged. A latch member 48 is pivotally se-

cured on a pivot member 49 carried by the rear bottom portion of the scoop 36 and is adapted to releasably engage the upper forwardly projecting flange 50 of the rear base frame member 23. A spring 51 engaging about a pivoted rod or pin 52 bears at one end against the latching member 48 and at the other end bears against a depending lug 53 which is secured to and projects downwardly from the scoop 36.

The latch member 48 is adapted to be moved to released position by means of an eccentric or latch releasing crank member 54 which is carried by a shaft 55 journalled in bearings 56 carried by a scoop 36. A handle 57 is secured to the outer end of the shaft 55 so that the latch releasing member 54 may be swung forwardly to move the latch member 48 to a disengaged position with respect to the rear frame member 23.

In order to provide a means whereby the scoop 36 may be swung upwardly at its forward end after the scoop has been released and swung downwardly to a discharging position, I have provided a scoop rocking leg or bar 58 which is pivotally mounted as at 59 adjacent the forward end of the scoop and at the bottom thereof. The scoop rocking member 58 is adapted to normally be disposed in a vertical position as shown in Figure 4 and will remain in this vertical position irrespective of the angular position of the scoop 36. During the loading and dumping of the scoop 36 the leg 58 is adapted to be releasably held in substantially parallel position with the forward portion of the scoop 36 by means of a resilient latching member 60.

In the use and operation of this scoop the base frame 21 may be disposed either on the ground or on a slightly elevated support. When it is desired to attach the scoop to the lifting fork 15 the latter is lowered to a position in alignment with the socket members 25 and then moved forwardly into the socket members until the latching hooks 29 engage behind the upright members 35 of the lifting fork 15. In picking up loose material on the ground the latching member 48 is released so that the forward end of the scoop 36 may contact with the loose material. The mobile frame or member 17 is moved forwardly to extend the scoop 36 into the loose material whereupon the scoop 36 may be manually rocked downwardly at its rear end to engage the latching member 48 with the rear frame member 23. The scoop may then be shifted to the desired position with the mobile structure and may be elevated or lowered as may be desired. The scoop 36 may be emptied by swinging the handle or lever 57 rearwardly so as to disengage the latch member 48 from the rear frame member 23. The scoop 36 will thereupon gravitatingly swing downwardly at its forward end to a discharging position.

The scoop may be relatched in its horizontal position by dropping the bar 58, the bar 58 being released from the spring latch 60. The lifting fork with the scoop at a downwardly and forwardly inclined angle may be lowered so that the now vertically disposed bar 58 will contact with the ground in order that further downward movement of the lifting fork and scoop will cause the latter to swing upwardly at its forward end until the latch member 48 engages the rear frame member 23.

This attachment will provide an improved means whereby a conventional material lifting fork of the type used in handling lumber or the like may be converted into a material handling means for handling loose materials, such as mill blocks, short or long slabs, edgings, dirt, gravel, or the like.

This dump box has been designed to be filled from a discharge chute or from a refuse conveyor. The rod or bar 58 is to be used to latch the box when it is empty.

The scoop or dump box may be made of any suitable width and length so as to carry either long or short boards, slabs or the like, and where the scoop or dump box is wider than it is long the sides of the box may project beyond the ends of shaft 44.

What is claimed is:

1. A scoop attachment for a lifting fork comprising a base, a pair of horizontally disposed rearwardly opening sockets carried by said frame, means releasably securing the lifting fork in said sockets, a scoop, means pivotally mounting said scoop on said frame, latch means for releasably locking said scoop in a substantially horizontally disposed carrying position, and a pivoted ground engaging member dependingly carried by said scoop engageable with the ground upon lowering of the fork for swinging the scoop upwardly from a discharging position to a carrying position.

2. A scoop attachment for a lifting fork comprising a frame, a scoop pivotally carried by said frame, latch means for locking said frame relative to said scoop, and means carried by said frame for detachably mounting said frame on the fork, second latch means for releasably locking said scoop in substantially horizontal carrying position, and a ground engaging member dependingly carried by said scoop engageable with the ground upon lowering of the fork for swinging the scoop upwardly from a discharging position to a carrying position.

3. A scoop attachment for a lifting fork comprising a base, a pair of horizontally disposed rearwardly opening sockets carried by said frame, latch means releasably securing the lifting fork in said sockets, a scoop, means pivotally mounting said scoop on said frame, second latch means for releasably locking said scoop in a substantially horizontally disposed carrying position, and a pivoted ground engaging member dependingly carried by said scoop engageable with the ground upon lowering of the fork for swinging the scoop upwardly from a discharging position to a carrying position.

4. A scoop attachment for a lifting fork comprising a base, a pair of horizontally disposed rearwardly opening sockets carried by said frame, latch means releasably securing the lifting fork in said sockets, a scoop, means pivotally mounting said scoop on said frame, second latch means for releasably locking said scoop in a substantially horizontally disposed carrying position, and means dependingly carried by said scoop for swinging the scoop upwardly from a discharging position to a carrying position.

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