Nov. 11, 1969 C. E. HASSELL ETAL 3,477,598

LOG HANDLING DEVICE

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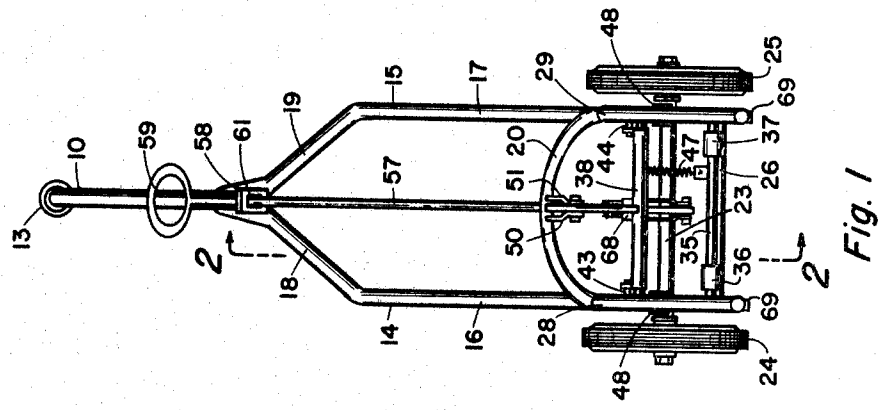


Fig. 1

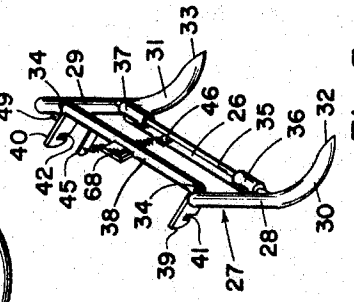


Fig. 3

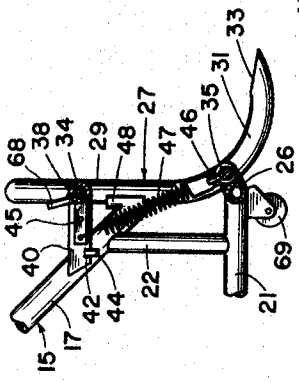


Fig. 4

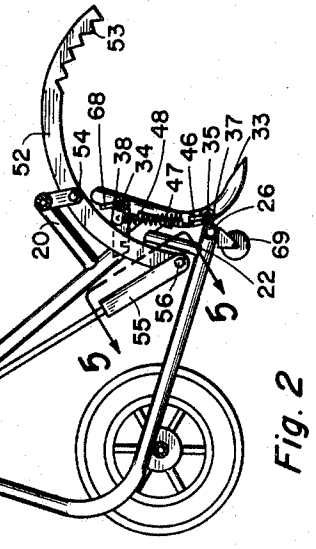


Fig. 2

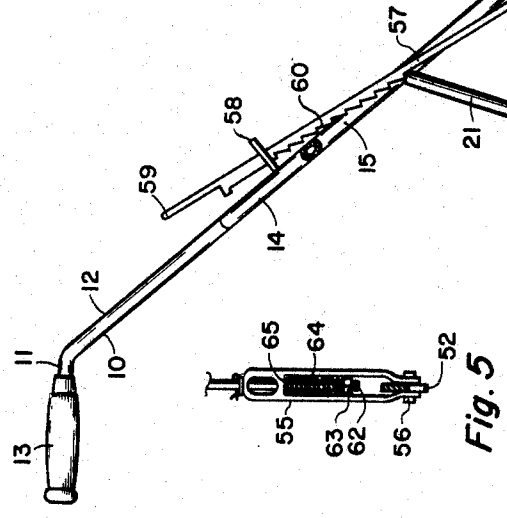


Fig. 5

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LOG HANDLING DEVICE

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Int. Cl. B65g 7/12; A01d 9/06

U.S. Cl. 214—379 3 Claims

ABSTRACT OF THE DISCLOSURE

A log handling device adapted to be pushed forwardly so that a pair of arms on a pivotal cradle can be inserted under a log or the like; a curved tong mounted on the frame of the device is pivoted downwardly towards the cradle to engage the upper side of the log after which the tong is locked into position; the device can now be wheeled to the desired position after which the tong is elevated, the cradle is released to pivot downwardly and deposit the log at the desired location.

The present invention relates to a log handling device which is adapted to pick up logs or other elongated objects at one location, to transport the log to another location and to deposit it at the other location with a minimum of effort being exerted by the operator. This application is a continuation-in-part of prior application Ser. No. 513,675, filed Dec. 9, 1965.

Generally speaking, logs or other elongated pieces of wood are carried by hand from their place of storage to a wood burning fire place. Some of these logs are heavy and cumbersome to carry. Some logs may be covered with dirt, saw dust, pieces or bark, etc. so that a person carrying such a log will become dirty in the process.

Therefore, it is a principal object of the present invention to provide a log handling device which can be brought to the original location of the log or other elongated device, which can pick up the log and secure it on the device, which can then be wheeled or moved to the location of use for the log and which can thereafter be operated to discharge the log at the point of intended use.

It is a further object of the present invention to provide a device of the type described herein which is capable of picking up, transporting and discharging a log in a manner more efficient than heretofore proposed or contemplated.

It is a still further object of the present invention to provide a device of the type described herein which is relatively simple and inexpensive to construct and which is simple to operate.

Other and further objects and advantageous features of the present invention will hereinafter more fully appear in connection with a detailed description of the drawings in which:

FIGURE 1 is a front elevation of a log handling device constructed in accordance with the present invention;

FIGURE 2 is a longitudinal sectional view taken along section line 2—2 of FIGURE 1;

FIGURE 3 is a perspective of the cradle sub-assembly associated with the present invention;

FIGURE 4 is a fragmentary view, on a slightly enlarged scale and with the tong omitted, of the lower forward portion of FIGURE 2; and

FIGURE 5 is a sectional view taken along section line 5—5 of FIGURE 2 showing the details of the lower end of the control rod.

Referring to the drawings in detail, FIGURES 1 and 2 show a handle 10 having a generally horizontal portion 11 and an inclined portion 12. A rubber handle or grip

13 is located on the handle portion 11. The lower end of the handle portion 12 connects with two frame members 14 and 15 which are inclined at essentially the same angle to the ground as the handle portion 12. These frame members 14 and 15 have sections 16 and 17, respectively, which are parallel to each other and upper converging sections 18 and 19, respectively, which, at their upper ends, provide the connection with the handle 10. This connection may be made by any convenient means such as welding or the like. The frame members 16 and 17 are connected together slightly above their lower ends by means of the inverted U-shaped brace 20. Two lower frame members 21, 21, only one of which is shown in FIGURE 2, are connected to the frame members 14 and 15 in a manner now to be described. The lower frame member 21 which is generally in the form of an L-shape is secured at its upper end to the lower side of the parallel section 17 of the upper frame member 15 by welding or other suitable means. At its lower and forward end the frame member 21 is secured to the upper frame member 15 by means of the strut 22, again by means of welding or any other suitable means. It should be understood that an identical frame member 21 and strut 22 are secured in exactly the same manner to the frame member 14 in parallel relation with the frame member 21 and the strut 22 shown in FIGURE 2. An axle 23 is secured in any suitable manner to the lower frame members 21 and wheels 24 and 25 are freely rotatably mounted on the ends of the axle 23 in any well known manner. A horizontal tube or rod 26 connects across the forward ends of the lower frame members 21.

The cradle sub-assembly shown in FIGURE 3 and generally designated by the reference character 27 is pivotally connected to the horizontal rod 26 in the following manner. The cradle 27 is composed of a pair of parallel arms 28 and 29 the upper ends of which are essentially straight and the lower ends of which are curved downwardly forwardly so as to provide prongs 30 and 31, respectively. The forward ends of the prongs 30 and 31 are pointed or tapered as at 32 and 33, respectively, so as to permit easy insertion under a log or other elongated article. The upper ends of the arms 28 and 29 are connected together by means of the upper rod or brace 34. The arms 28 and 29 are further connected together, intermediate their ends, by means of the lower rod or brace 35. Two short lengths of tubular steel 36 and 37 are connected to the rod 26, by welding or the like, to provide hinge portions for the cradle 27. The lower brace 35 is received through the resulting hinge portions 36 and 37 so as to provide a pivot point for the cradle 27. From the foregoing it should appear that FIGURE 3 not only includes a perspective of the cradle sub-assembly 27, but also the rod 26 and the hinges 36 and 37 which are on the forward frame of the device itself.

An elongated piece of steel tubing 38 is freely rotatably received on the upper rod 34 between the arms 28 and 29 and forms the main element for the cradle lock which will now be described. A pair of latches 39 and 40 are secured to the opposite ends of the tube 38 by any convenient means such as welding or the like. These latches 39 and 40 are tapered along their rear edges as shown and are provided with vertical notches 41 and 42, respectively. When the cradle sub-assembly 27 is in the locked position shown in FIGURE 4, the notches 41 and 42 are adapted to fit over lugs 43 and 44 which project inwardly toward each other from the upper frame members 14 and 15, respectively. An upper spring bracket 45 is connected to and extends rearwardly from the tube 38. A lower spring bracket 46 is connected to and extends upwardly from the rod or brace 35. A helical spring 47 having hooked ends as shown, connects be-

tween the upper and lower spring brackets 45 and 46 by virtue of the fact that the hooks are received in suitable holes in the spring brackets. A plurality of holes can be provided in spring bracket 45, for example, to vary the force of the spring applied to the tube 38. The lower and forward ends of the frame members 14 and 15 are provided with U-shaped seats 48, only one of which is shown in FIGURES 2 and 4 against which the rear edges of the arms 28 and 29 rest when the cradle 27 is in its engaged position. These U-shaped seats 48 can be made by taking a short length of tubular steel (not shown) having an inner diameter equal to or greater than the outer diameter of the arms 28 and 29, splitting this short length of tubular steel lengthwise and securing the resulting U-shaped members 48 to the forward ends of the frame members 14 and 15 with the concave portions facing forward. A horizontal stop 49 is welded to the latch 40 so as to extend horizontally behind the arm 29 of the cradle. The purpose of the stop 49 is to prevent the latch assembly consisting of latches 39, 40 and the tube 38 from rotating to a position below that shown in FIGURE 4 when the latch assembly is out of engagement with the lugs 43 and 44. When the cradle 27 is pivoted forwardly and downwardly from the position shown in FIGURE 4, the stop 49 will engage the rear edge of the arm 29 to prevent the latch assembly from dropping down below the desired position. Thereafter, when the cradle is rotated back towards the position shown in FIGURE 4, the tapered rear edges of the latches 39 and 40 will first contact the lugs 43 and 44 so as to elevate the latch assembly slightly whereafter, upon further rotation of the cradle 27 towards the FIGURE 4 position the notches 41 and 42 will engage the lugs 43 and 44 and will thereby be locked in the position shown in FIGURE 4 under the action of the spring 47.

A pair of parallel brackets 50 and 51 are secured to and project downwardly from the transverse frame member 20. An arcuate tong 52 having teeth 53 along one inner end and a hole at the opposite end is positioned between the brackets 50 and 51 in such a manner that an intermediate hole in the tong is in alignment with corresponding holes in the brackets 50 and 51. A suitable bolt 54 passing through the holes thus described provides a pivotal connection between the tong 52 and the brackets 50 and 51. A clevis 55 has its lower end pivotally connected to the lower and rear end of the tong 52 by means of a bolt 56. The upper end of the clevis 55 is hollow and provides a chamber for sliding movement therein of a control rod 57. The upper end of the control rod 57 passes through a slotted locking bracket 58 and terminates at its upper end in a handle 59. The portion of the control rod adjacent and below the locking bracket 58 is provided with teeth 60. In the region of the teeth 60 the cross sectional shape of the control rod 57 may be generally rectangular. The inclined dimension of the slot 61 is preferably slightly greater than the corresponding dimension of the control rod 57. The teeth 60 are adapted to engage the lower end of the slot 61 so as to prevent forward and downward movement of the control rod 57 when thus engaged. However, as indicated above, the dimension of the slot 61 is such that the handle 59 can be elevated to disengage the teeth 60 from the bottom of the slot 61 such that the control rod can be moved upwardly or downwardly with ease. The lower end of the control rod is threaded as at 62 and a threaded nut 63 is received on threaded portion 62. A spring 64 is received on the lower end of the control rod 57 between the nut 63 and a suitable stop 65, such as a shoulder or washer or the like in the clevis member 55. Thus, when an object is grasped between the prongs 30 and 31 and the tong 52, the control rod 57 is pulled upwardly, by pulling on the handle 59 until the spring 64 is somewhat compressed; at this juncture the control rod is urged inwardly and downwardly in the slot 61 until an appropriate one of the teeth 60 engages the lower end of the slot 61, the spring 64 still being held in compression. This action will serve to lock the log or other member which is held between the tong and the cradle.

As indicated above, the tong 52 can be locked in a grasping position by pulling upwardly on the handle 59. As will now appear a downward push on the handle 59 will serve to release the cradle 27 from the locked position shown in FIGURE 4. A lug 68 is welded or otherwise secured to the tube 38 intermediate its ends and in a position directly below the tong 52. This lug 68 constitutes the means for releasing the cradle 27 from its locked position. If the control rod 57 were moved downwardly from the position shown in FIGURE 2 by pushing downwardly on the handle 59 the inner arcuate portion of the tong 52 would strike the lug 68 so as to pivot the tube 38 in a clockwise direction thereby lifting the latches 39 and 40 out of engagement with the lugs 43 and 44. The weight of the log or other element resting on the tongs 30 and 31 considered further in light of the cradle 27 itself and considered further in light of the direction of the force exerted upon the cradle by the tong 52, will cause the cradle 27 to pivot forwardly and downwardly (ina clockwise direction as it appears in FIGURES 2 and 4) about the rod or brace 35 so as to discharge the log from the cradle.

For the purpose of facilitating movement onto and over a hearth or the like (not shown) which would be above the level of the floor upon which the device of the present invention might be wheeled, a pair of casters or small wheels 69 are attached to the lower forward ends of the frame members 21, 21.

OPERATION

When it is desired to transport a log or other elongated object from one situs to another, the device of the present invention is wheeled to the first situs and maneuvered with respect to the log until the prongs 30 and 31 are beneath, or partly beneath, the log, assuming, of course, that the cradle has been locked previously in the position shown in FIGURE 4. Thereafter the tong 52 is pivoted into engagement with the upper portion of the log by pulling upwardly on the handle 59. After a sufficient pull has been exerted on the handle 59 the same is moved downwardly in the slot 61 so that the teeth 60 engage the lower end of the slot 61 and the tong 52 is thereby locked in position. By pushing downwardly on the handle 12 through the medium of the hand grip 13 the entire frame can be pivoted about the axle 23 so as to elevate the log. In this position the log can be moved by pulling on the device rearwardly or pushing it forwardly, whichever is appropriate and the log can be thus wheeled to the second situs of intended use of the log. The downward pressure on the hand grip 13 can be released such that the log and the forward end of the device are lowered into the approximate position where it is desired to deposit the log. The handle 59 is pulled slightly upwardly and outwardly with reference to the upper frame structure so as to release the teeth 60 from engagement from the lower end of the slot 61, after which the handle is pushed downwardly to release the tong 52 from engagement with the log. Continued downward movement of the control rod 57 will cause the inner read portion of the tong 52 to strike the lug 68 thereby releasing the cradle 27 in the manner previously described. The log is thus deposited at this second situs and the log handling device can be withdrawn from this location.

In order to lock the cradle 27 in the FIGURE 4 position, it is merely necessary to lift up on the handle 13 so that the tongs 30 and 31 engage the surface of the floor (or other surface) thereby pivoting the cradle 27 in a counterclockwise direction until the notches 41 and 42 engage the lugs 43 and 44 as previously described.

In the event that the hearth, for example, is elevated from the general level of the floor upon which the log handling device is being wheeled, and prior to any attempt to discharge the log from the device, a further

downward pressure can be exerted on the handle **13** so as to elevate the log considerably above the floor and somewhat above the level of the hearth or, at least until the wheels **69** are slightly above the level of the hearth. At this point the device is urged forwardly until the wheels **69** are above the surface of the hearth after which the downward pressure on the handle **13** is slightly released until the wheels **69** actually engage the surface of the hearth. At this time the entire device can be lifted from the lower level around the wheels **69** as a fulcrum until the wheels **24** and **25** are substantially even with the level of the hearth after which the entire device can be moved forwardly on the wheels **69** until the wheels **24** and **25** contact the surface of the hearth.

Whereas the present invention has been described in particular relation to the drawings attached hereto, it should be understood that other and further modification apart from those shown or suggested herein may be made within the spirit and scope of this invention.

What is claimed is:

1. A log handling device comprising a frame, wheels mounted on said frame intermediate the ends thereof to permit tilting of said frame about said wheels and to permit rolling movement of said device, forwardly projecting prong means located at one end of said frame for insertion beneath a log, forwardly projecting tong means pivotally mounted at said one end of said frame and movable with respect to said prong means whereby said log is grasped between said tong means and said prong means, a slidable control bar mounted on said frame and pivotally connected at one end to said tong means for moving the same about the pivotal mounting for said tong means, first handle means at the other end of said frame, second handle means at the other end of said control bar, a resilient locking means for holding said control bar in a fixed position relative to said frame when a log is grasped between said tong means and said prong means, said pivotal connection between said control bar and said tong means including a clevis slidably receiving said one end of said control bar, said clevis being pivotally connected to said tong means, spring means coacting between said control bar and said clevis to urge said control bar towards said tong means, a slotted bracket mounted on said frame and received around said control bar intermediate the ends thereof, and a plurality of teeth extending longitudinally along a portion of said control bar and slidable through the slot in said slotted bracket, said teeth being adapted to separately engage one end of said slot, said resilient locking means being constituted by said slotted bracket, said teeth and said spring.

2. A log handling device comprising a frame, wheels mounted on said frame intermediate the ends thereof to permit tiliting of said frame about said wheels and to permit rolling movement of said device, forwardly projecting prong means located at one end of said frame for insertion beneath a log, forwardly projecting tong means pivotally mounted at said one end of said frame and movable with respect to said prong means whereby said log is grasped between said tong means and said prong means, a slidable control bar mounted on said frame and pivotally

connected at one end to said tong means for moving the same about the pivotal mounting for said tong means, first handle means at the other end of said frame, second handle means at the other end of said control bar, a resilient locking means for holding said control bar in a fixed position relative to said frame when a log is grasped between said tong means and said prong means, a cradle pivotally mounted at said one end of said frame, said prong means extending forwardly from said cradle, a spring mounted latching means mounted on said cradle and engageable with said frame for resiliently locking said cradle in position on said frame, and means on said cradle for unlocking said resilient latching means in response to the opening of said tong means relative to said prong means.

3. A log handling device as set forth in claim **2** wherein said pivotal cradle includes a pair of spaced parallel arms having upper straight sections and lower curved sections constituting said prong means, a first horizontal rod connected between the upper ends of said arms, a second horizontal rod connected between said arms intermediate the ends thereof, hinge means mounted on the forward end of said frame and received around said second rod and constituting the pivotal connection between said cradle and said frame, a horizontal tube rotatably mounted on said first rod, a pair of slotted latching members mounted on said tube and extending rearwardly thereof, a pair of lugs mounted on said frame and engageable with the slots in said slotted latching members for locking said pivotal cradle in a relatively fixed position with respect to said frame, a first spring bracket connected to and extending rearwardly from said horizontal tube, a second spring bracket connected to and extending upwardly from said second rod, a spring connected between said spring urging said latching members resiliently against said pair of lugs, a release lug connected to said tube and extending upwardly therefrom in the path of movement of said tong and engageable by said tong when the latter is moved to its open position with respect to said prongs so as to lift said latching members out of engagement with said pair of lugs for unlocking said pivotal cradle to permit downward pivotal movement of said prong means relative to said frame, said spring mounted latching means being constituted by said first rod, said horizontal tube, said pair of latching members, said pair of lugs, said spring brackets and said spring.

References Cited

UNITED STATES PATENTS

1,255,070	1/1918	Waller	214—377
1,551,928	9/1925	Bryan	214—379
2,350,207	5/1944	Wyscaver	294—104
2,636,771	4/1953	Schneider	294—104
3,165,345	1/1965	Gardner	294—104 XR

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