D. S. HAYS.

BAILING SCOOP.

APPLICATION FILED JAN. 9, 1919.

1,302,365.

Patented Apr. 29, 1919.

2 SHEETS—SHEET 1.

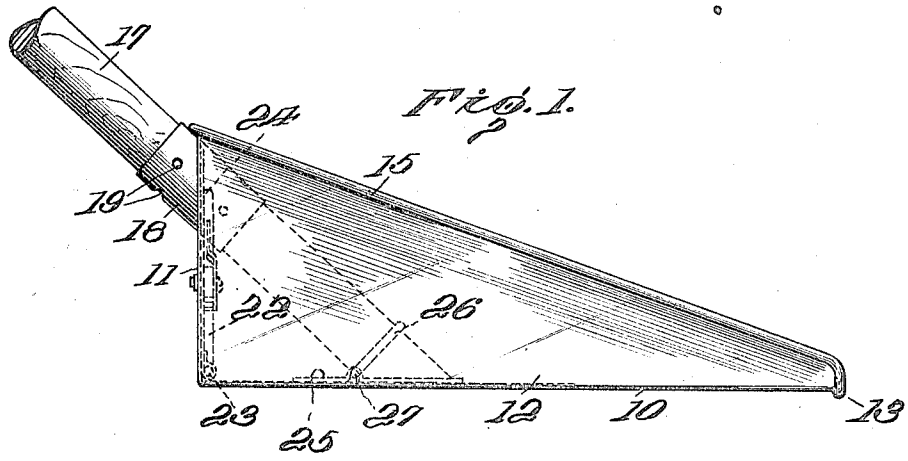
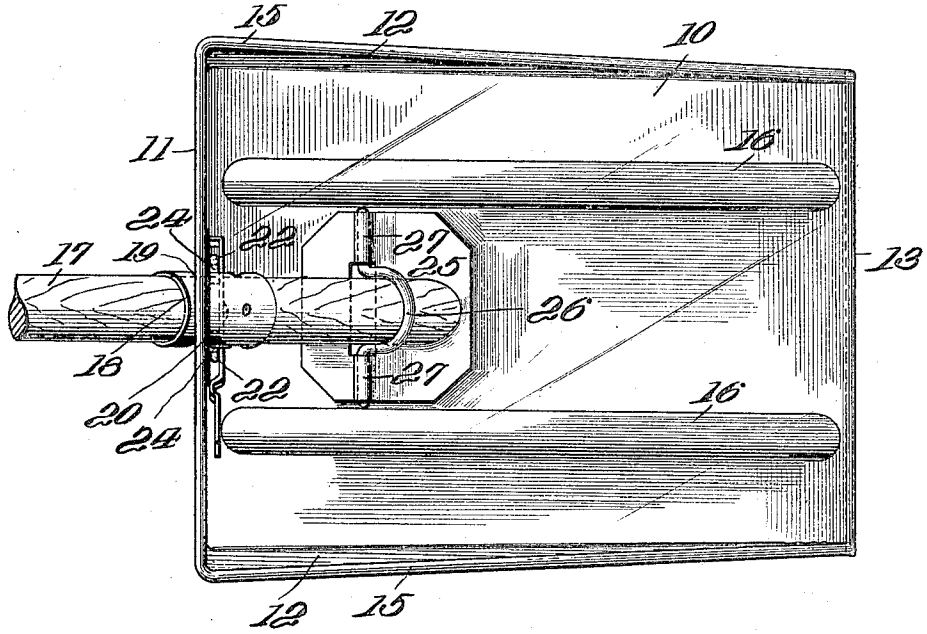


Fig. 1.

Fig. 2.



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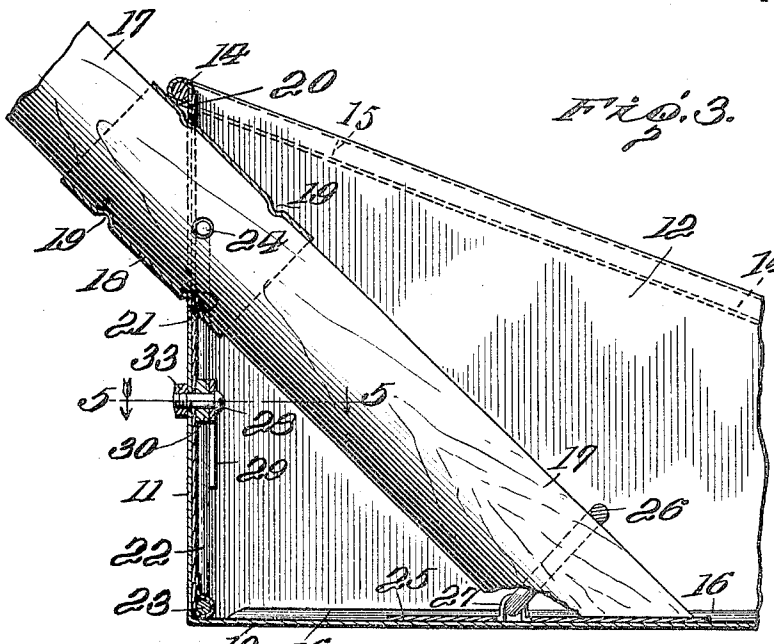


Fig. 3.

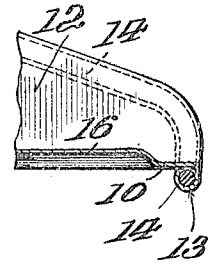
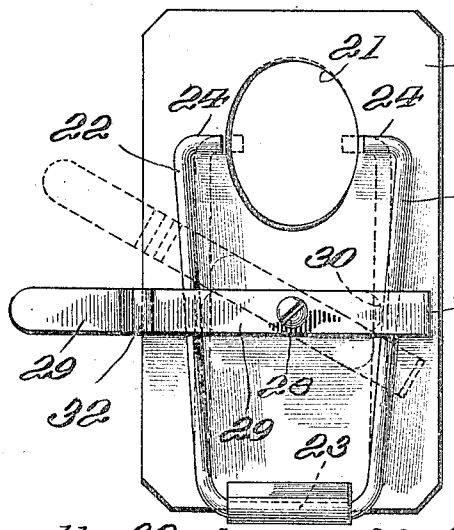
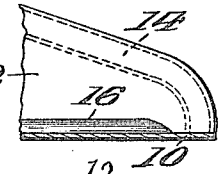


Fig. 4.

Fig. 6.





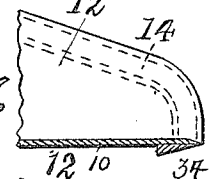


Fig. 7.

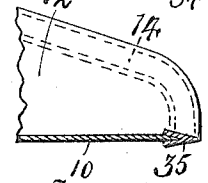


Fig. 8

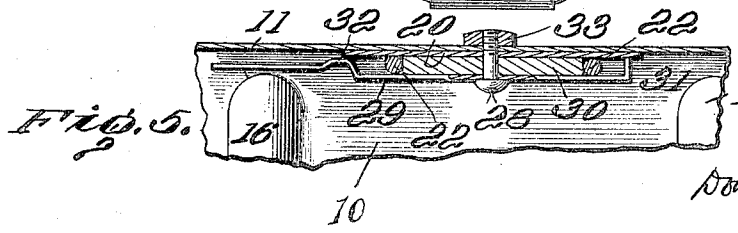


Fig. 5.

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UNITED STATES PATENT OFFICE.

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BAILING-SCOOP.

1,302,365. Specification of Letters Patent. Patented Apr. 29, 1919.

Application filed January 9, 1919. Serial No. 270,337.

(FILED UNDER THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

To all whom it may concern:

Be it known that I, DONALD S. HAYS, Capt., Corps of Engineers, U. S. A., a citizen of the United States, stationed at Gen. Eng. Dep., Washington, D. C., have invented an Improvement in Bailing-Scoops, of which the following is a specification.

The invention described herein may be used by the Government, or any of its officers or employees in prosecution of work for the Government, or by any other person in the United States, without payment of any royalty thereon.

This invention relates to improvements in scoop or shovel devices adapted more particularly for bailing out trenches and similar excavations, but which may also be employed for bailing out boats and the like. The improved device is designed for use primarily in military operations but may be otherwise employed if required.

The principal object of the invention is to provide a device having a detachable handle and so arranged that a plurality of the devices may be "nested" for transportation or storage when the handles are detached.

Another object of the invention is to provide a device of this character wherein the back of the scoop is practically at right angles to the bottom and omitting the fillet found in the ordinary scoop, thus preventing the spilling of water encountered in the ordinary scoop.

Another object of the invention is to provide a device of this character including a locking device for securing the handle in position, and enabling the handle to be readily detached when not required, or when the scoops are to be nested for transportation.

With these and other objects in view the invention consists in certain new and useful construction and combination of parts as will hereinafter be more fully described and pointed out in the claims.

In the drawings:

Figure 1 is a side elevation of the improved device.

Fig. 2 is a plan view.

Fig. 3 is an enlarged longitudinal section.

Fig. 4 is an elevation of the handle locking device.

Fig. 5 is a section on the line 5—5 of Fig. 3.

Figs. 6, 7 and 8 are sectional details illustrating modifications in the construction.

The improved device comprises a body of sheet metal, preferably steel, and including a bottom member 10, a rear member 11 substantially at right angles to the bottom, and sides 12, the sides being inclined slightly outwardly toward their upper edges and the upper edges likewise inclined toward the forward end of the body as shown in Figs. 1 and 2. By inclining the sides 12 a plurality of the scoops may be readily nested for transportation or storage, and thus occupy less space. At its forward end the bottom 10 is directed downwardly as illustrated at 13, and a reinforcing or binding wire 14 is rolled into the upper edges of the rear member 11, sides 12 and the depending portion 13, the terminals of the binder member being preferably located at the upper edge of the sides and forwardly of the rear 11 as indicated at 15. The terminals of the binder wire will be preferably soldered, electric welded or otherwise connected so that the binder member is practically integral with the ends. The scoop is thus materially strengthened or reinforced and the depending portion 13 correspondingly reinforced and stiffened.

When the improved scoop is to be employed for handling flour, ground flint, dry white lead or like substances or products, the forward edge will be formed as shown in Fig. 6, or sharpened as shown in Fig. 7 and the sharpened edge reinforced by a wedge shaped strip 34. The forward sharpened edge may also be provided with a V shaped guard member 35 as shown in Fig. 8.

If required, reinforcing or strengthening ribs 16 may be pressed into the bottom 10.

The handle member of the improved device is represented as a whole at 17 and is preferably formed of wood and provided with a guard ferrule 18 spaced from its

lower end, the ferrule being preferably coupled to the handle by a plurality of indentations 19 pressed inwardly into the material of the handle. The ferrule may also be secured to the handle by cold shrinking. By this means the ferrule is connected to the handle with sufficient strength to support it in position thereon. The rear member 11 is provided with an aperture to receive the ferrule 17, the aperture being elongated so that the ferrule will closely fit the aperture when disposed at an angle relatively to the body of the scoop as shown in Figs. 1 and 3. Attached to the inner face of the rear member 11 is a plate 20 having an aperture corresponding to the one in the member 11, the ferrule 18 passing through both apertures as illustrated in Fig. 3.

Bearing upon the inner face of the plate 20 is a handle locking member formed of relatively heavy resilient wire bent substantially into U shape whereby spaced sides are produced, the locking member being attached to the plate 20 by a clip device 23, and attached to the clip by spot welding or other means so that it will not slip within the clip. At their upper ends the side members 22 are directed inwardly as shown at 24 and adapted to be seated in apertures in the sides of the ferrule 18 and projected into the ends of an opening through body of the handle. The resilience of the sides 22 of the locking member will hold the terminals 23 yieldably within the opening through the handle and in the ferrule and thus lock the handle in position, as hereafter more fully explained. Attached in any suitable manner to the bottom 10 is a plate 25 having a holding loop 26 mounted to swing thereon as shown at 27, the loop designed to bear over the lower end of the handle member 17 and thus hold the foot portion of the handle against the body of the scoop. At its lower end the handle 17 is beveled to closely engage the upper face of the plate as illustrated in Fig. 3. By this simple means the handle is locked in position relatively to the scoop, and stands at a suitable incline for convenient use.

The loop 26 serves the two-fold purpose of a means for holding the handle locked at its lower end to the body of the scoop and also as a clamping means for applying strain to the handle to bind the same in position relatively to the bottom of the scoop.

When the body portions of the scoop are "nested" the loops 26 will fold down flat against the bottom of the same, as will be obvious.

The ferrule protects the relatively soft material of the handle and provides for the friction of metal against metal and thus prevents wear or abrasion of the handle and also provides ample clearance for entering the handle into the apertures of the members 11 and 20.

It will be noted that the ferrule bears at its outer end against the wire inclosing roll at the upper edge of the back 11, so that when strain is applied to the scoop portion in lifting the handle, the reinforced rim will receive the strain and prevent the undue buckling of the parts.

In practice, the distance between the sockets of the ferrule and the inner face of the plate 20 are slightly greater than the distance between the terminals 24 of the members 22, so that it will be necessary to force the handle endwise and apply strain between the rear end and bottom to slightly buckle or bend the bottom or the back, or both, to enable the terminals 24 to enter the sockets. The reaction of the metal of the scoop firmly holds the parts in coupled relation.

Pivoted at 28 upon the member 20 between the sides 22 of the locking member, is a releasing device comprising a lever arm 29 extending continuously over the members 22 and a portion 30 extending into the space between the members 22.

The portion 30 is designed to engage the inner faces of the members 22 when the lever arm is disposed at right angles to the longer axis of the member 20 and hold the members 22 away from each other as shown in full lines in Fig. 4, and thus disconnect the terminals 24 from the sockets in the ferrule 18 and release the handle 17. Then when the lever arm is disposed in the position shown by dotted lines in Fig. 4 the portion 30 will be disengaged from the members 22 and enable the latter to be automatically engaged with the sockets in the ferrule and in the ends of the aperture in the handle and lock the latter in operative position. At one end the member 29 is turned toward the plate 20 as shown at 31, while an offset 32 is bent into the member 29 at the opposite side of the pivot 28, the portions 31 and 32 operating as stops to limit the movement of the lever arm in one direction.

The stops also enable strain to be applied to the portions 22 to compress the terminals 24 into their sockets, if required.

The lever arm and its projection thus forms an effectual device whereby the handle may be quickly released when the "scoops" are to be packed for transportation or storage, and also as a means of positively forcing the locking portions into closed or locked position.

In using implements of this character the scoop portion is moved forwardly through the water, for instance in the bottom of a trench, boat, or other locality, and then elevated by the handle and moved laterally and discharged over the parapet of the trench or over the side of the boat. In elevating the

scoop the bottom is necessarily inclined downwardly toward the rear, causing the water to flow to the rear with considerable force, and by forming the rear side 11 substantially at right angles to the bottom 10 the rearwardly rushing body of water is checked thereby and prevented from flowing over the rear wall and sides of the scoop. Forming the rear wall of the scoop substantially at right angles to the bottom is thus an important feature of the device and adds materially to its efficiency and utility.

The improved device may also be employed for handling other material than water or mud, for instance grain and like products, and when employed for this purpose the depending forward edge 13 and its wire reinforcement may be omitted, as shown in Fig. 6.

It will be noted that the pivot member 28 is threaded to receive a nut 23, and after the nut has been turned "home" the end of the bolt is upset to a sufficient extent to prevent the nut working loose or becoming detached.

The plates 20 and 25 are rigidly attached to the back 11 and bottom 10, preferably by electric welding and operate not only as means for supporting the handle holding and locking members, but also to reinforce and stiffen the scoop structure.

If the resiliency of the arms 22 decreases in force, the force may be restored by bending the arms toward each other by a blow of a hammer or other implement.

The handle locking member may be constructed of relatively soft or untempered wire as the lateral strains are relatively slight. The locking members will thus be held in position by their own resiliency and the handle requires no other holding or locking means.

Having thus described the invention what is desired to secure by Letters Patent is:

1. A device of the class described including a body having bottom sides and rear end, the forward edge of said bottom member being deflected to extend below the lower line of the bottom, and a continuous reinforcing wire rolled into the edge of the sides, and the deflected forward edge of the bottom.

2. A device of the class described including a body having bottom sides and rear end, said sides being inclined outwardly and the rear end substantially at right angles to the bottom, the forward edge of said bottom being deflected to extend below the line of the same to form a guard to keep the device from digging into sediment or deposits, or from catching in slivers on the bottom of the boat.

3. A device of the class described including a body having bottom sides and rear end, said end having a handle receiving aperture, a handle lock including resilient side members adapted to yieldably engage a handle when thrust through the aperture, and means for disconnecting said locking members from the handle and forming a positive means for engaging the locking members in case of failure of the automatic spring.

4. A device of the class described including a body having bottom sides and rear end, said end having a handle receiving aperture, a handle member, a sheathing ferrule inclosing said handle where the same passes through the aperture and provided with sockets, a handle lock including resilient side members adapted to yieldably engage in said sockets, and means for disconnecting said locking members from the handle.

5. A device of the class described including a body having bottom sides and rear end, said end having a handle receiving aperture, a handle lock including a resilient locking member in U shape with the terminals directed toward each other and adapted to enter sockets in a handle, coupling means for connecting said locking members to the body, means for distending the sides of said locking member to detach the terminals thereof from the sockets, and means for distending the sides of said locking members to detach the terminals from the sockets.

6. A device of the class described including a body having bottom sides and rear end, said end having a handle receiving aperture, a handle lock including resilient side members adapted to yieldably engage a handle when thrust through the aperture, a releasing device comprising an arm pivoted intermediate the ends and having projections adapted to engage the sides of the locking member for disconnecting the same from the handle when the releasing device is actuated.

7. A device of the class described including a body having bottom sides and rear end, said end having a handle receiving aperture, a supporting plate attached to said end and having an aperture registering with the aperture of the same, a locking member connected to said plate and including resilient sides adapted to yieldably engage a handle when passed through the aperture, and means carried by said plate for disconnecting said locking members from the handles.

8. A device of the class described including a body having bottom sides and rear end, said end having a handle receiving aperture, a supporting plate attached to said end and having an aperture registering with the aperture of the same, a locking member connected to said plate and including resilient sides adapted to yieldably engage a handle when passed through the aperture, and a releasing device comprising an arm pivoted to said plate and having projections adapted to engage the sides of the locking member for disconnecting the same from the handle.

9. A device of the class described including a body having bottom sides and rear end, said end having a handle receiving aperture, a loop device swinging relatively to said body and adapted to receive the lower terminal of a handle and foldable against the bottom, and means adapted to lock said handle to the body.

10. A device of the class described including a body having bottom sides and rear end, said end having a handle receiving aperture, a supporting plate attached to said bottom, a loop device swingingly connected to said plate and adapted to receive the lower terminal of a handle, and means adapted to lock said handle to the body.

DONALD S. HAYS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."