

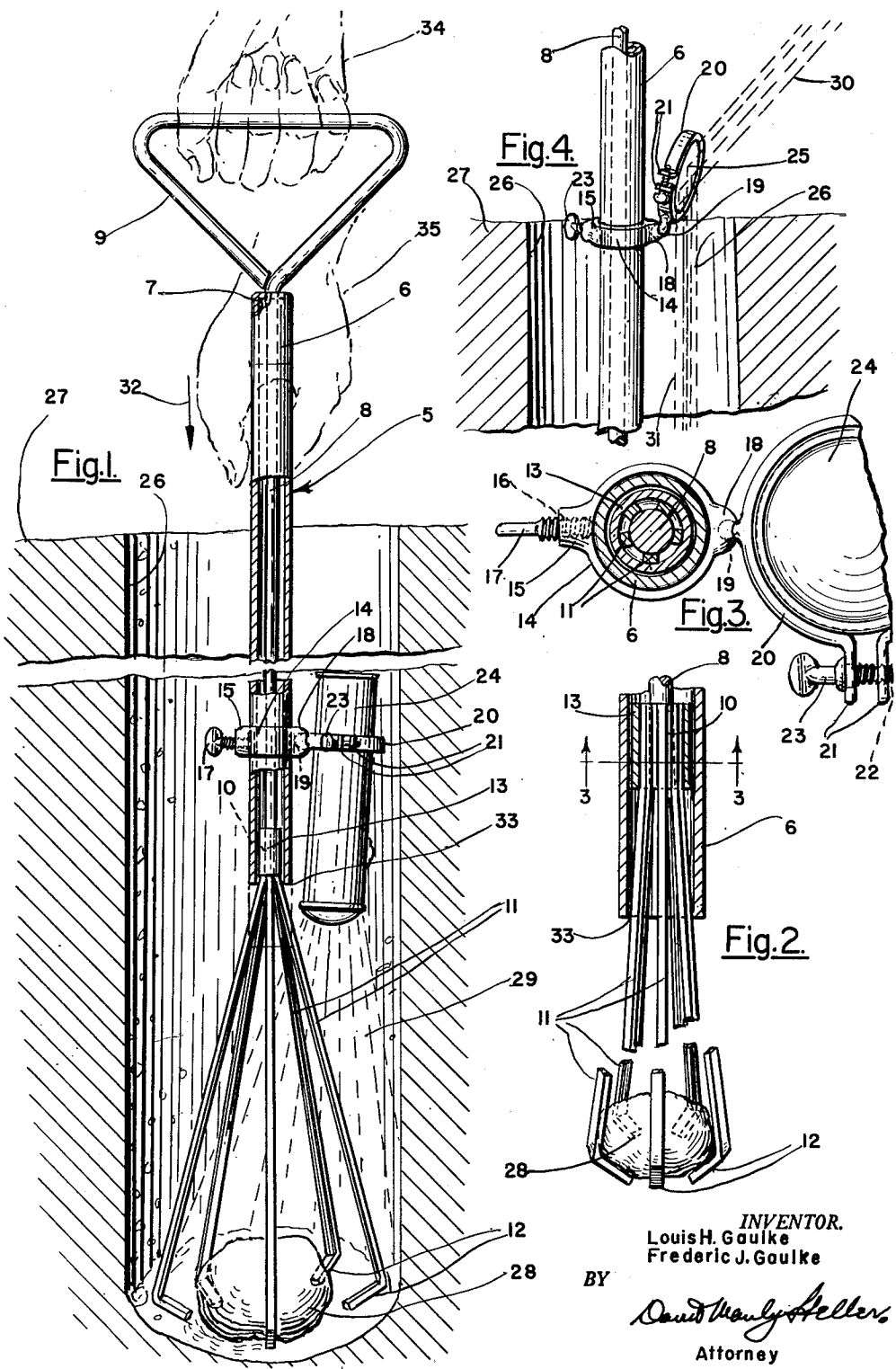
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GRAPPLE HOOK MEANS

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GRAPPLE HOOK MEANS

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Our invention relates to devices for removing or recovering objects from inaccessible places.

An important object of our invention is to provide a device of the above mentioned character, having an elongated tube and a connecting rod with resilient grapple means attached to the end thereof, which may be manipulated from the handle portion in order to remove objects such as stones from post holes or for recovering objects from inaccessible places such as the bottoms of deep holes in the ground where the human hand could not reach same.

A further object of our invention, is to provide adjustable bracket clamping means for holding a source of illumination, such as a flash-light at a point or position on the elongated tube, so that the beams of light may be directed at the bottom of the hole to illuminate the object to be recovered.

A still further object of our invention is to provide a device for removing or recovering objects from the aforementioned inaccessible places, in which the above mentioned bracket clamp may also be positioned at the top end of the extended tube and have a mirror clamped therein, for the purpose of directing rays of sun light into the hole or inaccessible place.

Other objects and advantages embraced in our invention will be disclosed in the following description, and in the accompanying illustrations, in which like parts are designated by like numerals, and in which:

Fig. 1 is an elevational view, partly in cross-section of our invention; showing it with a flash-light clamped into position and being operated to remove a stone from a hole.

Fig. 2 is a fragmentary view, partly in cross-section; showing the clamping action of the grappling arm elements comprising a part of our invention.

Fig. 3 is an enlarged cross-sectional view, taken substantially on line 3—3 on Figure 2.

Fig. 4 is a fragmentary view of our invention; showing a mirror clamped in the bracket clamp thereof, and showing light rays being reflected downwardly.

Referring to the illustrations; our invention is generally designated 5, and consists of a tube element 6, having the top end thereof peened over to provide a reduced opening 7, which acts as a bearing for a connecting rod element 8. This said connecting rod element 8 has a handle portion 9 at its upper end and on its lower or tip portion 10 are fixed the ends of a number of resilient grappling arm elements 11; held securely in place by

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a retaining collar 13, as best shown in Figures 1 and 2. The free ends of the resilient grappling arm elements 11 are bent inwardly to provide engaging portions 12.

Adjustable bracket clamp means 14 consists of a clamping portion 15, which fits over and clamps on to the tube element 6, and is held in adjustment by a thumb screw 17 in the tapped opening 16 of the said clamping portion 15.

A bracket element 20 is articulately mounted on the bracket engaging portion 18, by a universal joint 19, and is provided with clamping ears 21. The said bracket element 20, is adjustable to a flash-light 24 or a mirror 25, by means of a shoulder thumb screw 23 through one of the clamping ears 21, and into the tapped opening 22 of the mating clamping ear 21.

A preferred method of using our invention, is to clamp a flash-light 24 in the bracket element 20, which together with its attaching bracket clamp means 14 is adjusted to a point near the lower end of the tube element 6.

The grappling device is thrust with the grappling arm element downward, into an inaccessible place, such as a hole designated 26 in the ground 27, and is held by hands designated 34 and 35 as shown in phantom lines in Figure 1, one hand 34 grasping tube 6 the other hand 35 grasping handle portion 9.

The resilient grappling arm elements 11, which are shown in extended position in Figure 1 are maneuvered so that the engaging portions 12 encompass an object, such as a stone 28 to be removed from the hole 26.

The hand, designated 35, makes a downward movement with tube element 6, in the direction of arrow 32, while the handle 9 is held stationary by the hand designated 34. The said downward movement of tube 6 causes the arm engaging edge 33 at the bottom end thereof to engage the resilient grappling arm elements 11, and causes them to converge until the bent engaging portions 12 engage and grip the stone 28 as shown in Figure 2.

The said engaging edge 33, also serves as a friction lock against the resilient grappling arm elements 11, locking and holding the engaging portions 12 about the stone 28; so that the said stone 28 may be removed from hole 26. When the grappling device 5 has been removed from hole 26, the stone 28 may be released therefrom, by pulling upwardly on tube 6, releasing the engagement between edge 33 and resilient grappling arm elements 11.

A second method of illuminating the hole 26, is

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by moving the adjustable bracket clamp means 14 to a position above the edge of the opening of hole 26, and placing a mirror 25 within bracket element 20, and articulating the said bracket clamp with mirror 25 to such an angle as to direct rays 30 of sun light, in a downward direction, as designated 31 and shown in Figure 4.

A particular advantage of our invention is that by means of its light holding attachment; light beams designated 29 in Figure 1, or 31 in Figure 4, may be directed at the point where the object lies, that is to be removed or recovered from a deep hole of small diameter inaccessible to the human hand; thus, saving time in finding the object and preventing its being insecurely grasped, as might otherwise be the case.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

Having thus disclosed and revealed our invention, what we claim as new and desire to secure by Letters Patent is:

1. Grapple hook means including a tubular body, light directing means secured to the said body in a varied range of longitudinally and angularly adjustable relationships, comprising bracket clamp means adjustably securable radially and longitudinally to the said body, light source clamping bracket means secured to the said bracket clamp means so as to afford limited universal movement thereto, and light directing means directed to inaccessible places and secured to the said light source clamping bracket means for directing light rays to a focal point of operation at the free ends of the said grapple hook means.

2. Grapple hook means including a tubular body, light directing means secured to the said

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body in a varied range of longitudinally and angularly adjustable relationships, comprising bracket clamp means adjustably securable radially and longitudinally to the said body, light source clamping bracket means secured to the said bracket clamp means so as to afford limited universal movement thereto, and artificial light directing means directed to inaccessible place and secured to the said light source clamping bracket means for directing light rays to a focal point of operation at the free ends of the said grapple hook means.

3. Grapple hook means including a tubular body, light directing means secured to the said body in a varied range of longitudinally and angularly adjustable relationships, comprising bracket clamp means adjustably securable longitudinally to the said body, light source clamping bracket means secured to the said bracket clamp means so as to afford limited universal movement thereto, and mirror directing means directed to inaccessible places and secured to the said light source clamping bracket means for directing the sun's rays to a focal point of operation at the free ends of the said grapple hook means.

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