Feb. 4, 1941. E. LOOS ET AL 2,230,498

EXCAVATING TOOL

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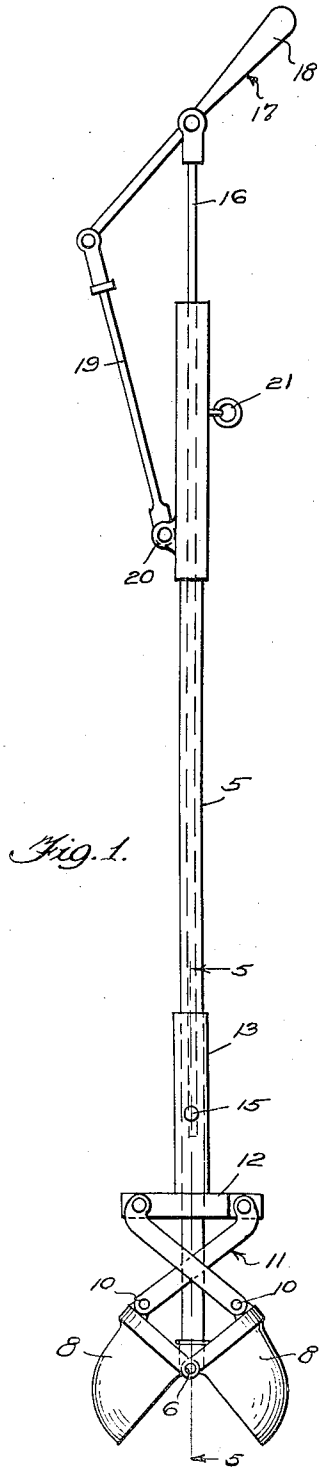


Fig. 1.

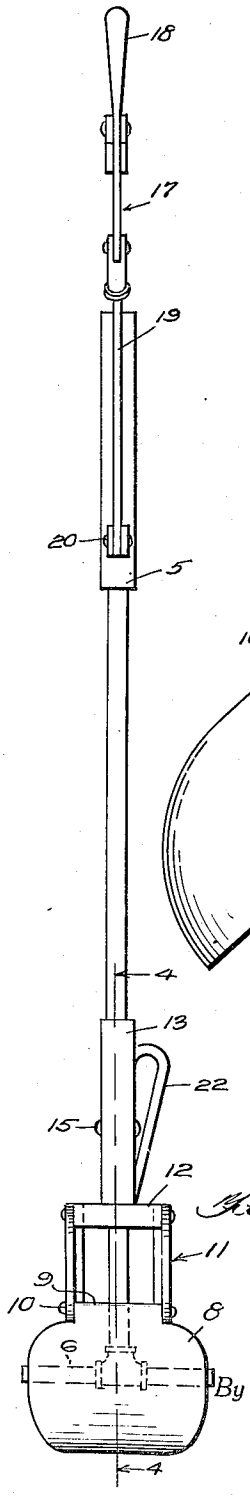


Fig. 2.

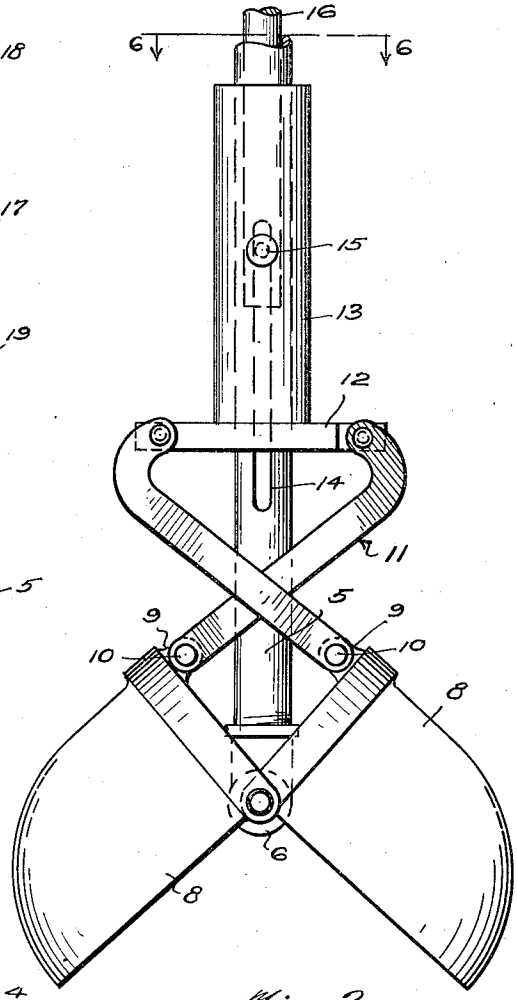


Fig. 3.

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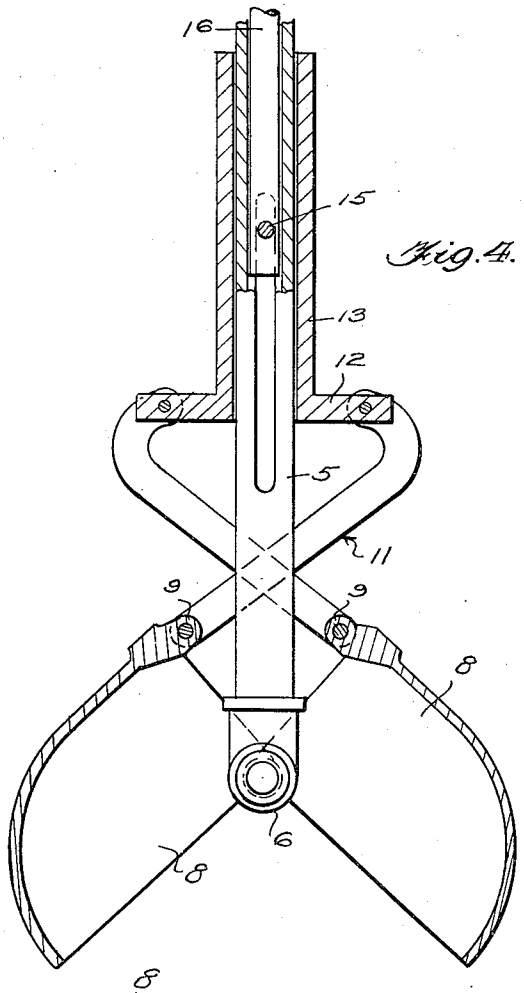


Fig. 4.

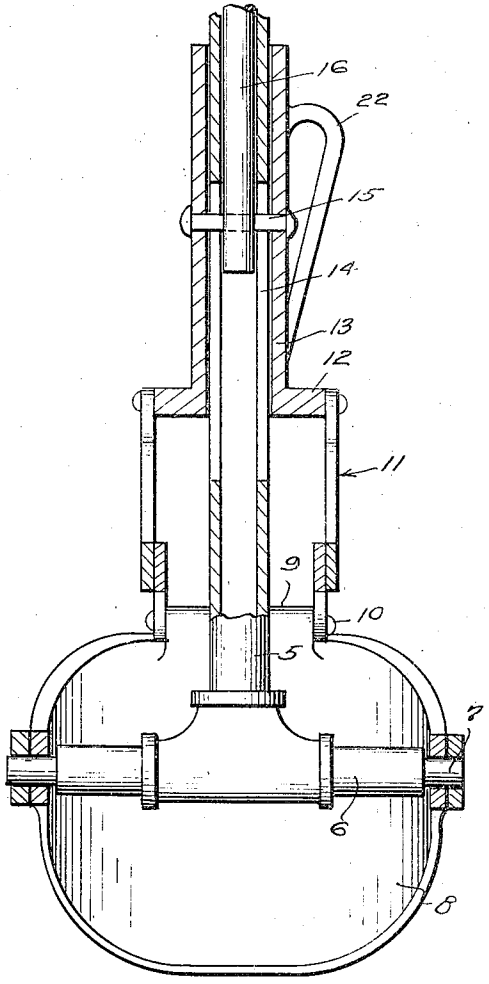


Fig. 5.

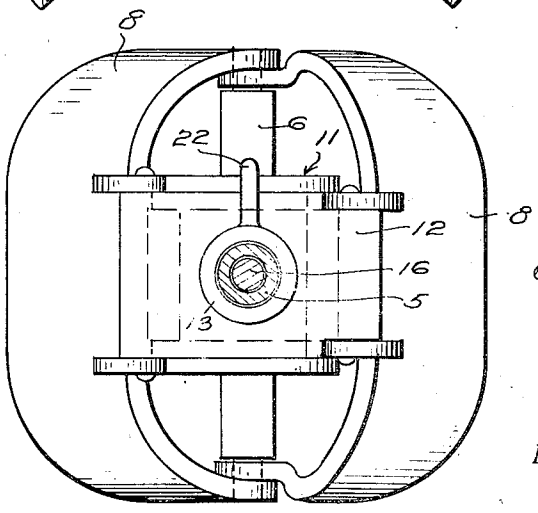


Fig. 6.

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UNITED STATES PATENT OFFICE

2,230,498

EXCAVATING TOOL

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Application June 5, 1940, Serial No. 339,035

4 Claims. (Cl. 294—50.8)

This invention relates to an excavating tool or dipper, and has for the primary object the provision of a device of this character which will be convenient to use in the removal of earth and other loose particles from an excavation and which will be simple to operate and includes clam-shaped jaws and an operating means therefor whereby said jaws may be easily and quickly closed and opened and when open may be readily forced through earth so that on being closed a maximum amount of earth will be trapped therein and conveyed to a place of dumping without the loss of earth.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination and arrangement of parts as will be hereinafter more fully described and claimed.

For a complete understanding of our invention, reference is to be had to the following description and accompanying drawings, in which

Figure 1 is a side elevation illustrating an excavating tool constructed in accordance with our invention.

Figure 2 is an elevational view taken at right angles to the showing made in Figure 1.

Figure 3 is a fragmentary enlarged side elevation showing the jaws of the tool in a fully open position.

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

Figure 5 is a sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a sectional view taken on the line 6—6 of Figure 3.

Referring in detail to the drawings, the numeral 5 indicates a tubular mast which has secured to one end a cross head 6, the ends of which are reduced to form pintles 7 and journaled on the latter are clam-shaped jaws 8. Formed on the non-working edges of the jaws 8 are bearings 9 to receive pivot pins 10 for connecting to the jaws toggle type links 11 and said links are in turn pivotally connected to a plate 12 forming an integral part of a sleeve 13 slidably mounted on the mast. The sliding movement of the sleeve 13 in opposite directions will bring about opening and closing of the jaws.

The mast 5 adjacent to the head 6 is provided with opposed elongated slots 14 through which a connecting pin 15 extends, said pin 15 having its ends riveted against the sleeve 13 after passing through the latter. An operating rod 16 has the pin 15 extending therethrough. The operating rod extends outwardly of the mast and is pivotally connected to an operating lever 17. The operating lever 17 includes a handle 18 at one end thereof and its opposite end is pivotally connected to a connecting link 19 which is pivoted on the mast, as shown at 20, acting as a fulcrum for the pivotal movement of the lever 17. The pivotal movement of the lever 17 in one direction with the mast held in a relatively fixed position will bring about closing of the jaws and a reverse movement of the lever 17 will bring about opening of the jaws.

By referring to Figures 4 and 5 it will be seen that the toggle links are arranged in pairs with the links of each pair crossing the links of the other pair and each link includes a straight portion with a hook-shaped end. The hook-shaped end is pivoted on the plate 12 of the operating sleeve 13.

The mast may be provided with a ring 21 to which a hoisting cable may be connected while the sleeve 13 is equipped with a loop member 22 to which a dumping cable may be connected.

A tool of the character described and shown in the drawings, will be extremely durable, economical to manufacture and maintain in use and easily repaired. Furthermore, it will be seen that a tool of this character is extremely simple to handle and operate for the purpose of closing the jaws onto earth and then opening the jaws to free the earth when the device has been moved to a selected place.

While we have shown and described the preferred embodiment of our invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of the invention as claimed.

What we claim is:

1. In a tool of the character described, a mast, clam shell type jaws pivotally mounted on one end of the mast, an operating sleeve slidably mounted on the mast, means for connecting the sleeve to said jaws, an operating rod slidable in said mast, means for connecting the operating rod to said sleeve, and an operating means connected to the rod for imparting movement in opposite directions thereto to bring about opening and closing of the jaws.

2. In a tool of the character described, a tubular mast, a cross head secured to one end of the mast and having reduced ends to form pintles, clam shell type jaws journaled on said pintles, a sleeve slidable on the mast, toggle means connecting the sleeve to said jaws, an operating rod

slidable in the mast, means for connecting the rod to said sleeve, and a hand operated means connected to the rod and to the mast.

3. In a tool of the character described, a tubular mast having opposed slots, a cross head secured to one end of the mast, jaws pivoted on the cross head, a sleeve slidable on the mast, a pin carried by said sleeve and extending through the slots, toggle links connecting the sleeve to said jaws, a rod slidable in said mast and connected to the pin, and an operating means connected to the mast and to the rod.

4. In a tool of the character described, a tubular mast having opposed slots, a cross head secured to one end of the mast, jaws pivoted on the cross head, a sleeve slidable on the mast, a pin carried by said sleeve and extending through the slots, toggle links connecting the sleeve to said jaws, a rod slidable in said mast and connected to the pin, a hand lever pivoted to said rod and including a handle, a connecting link pivoted to one end of the lever and pivotally mounted on the mast.

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