Sept. 11, 1945. M. M. HICKEY 2,384,466

BUILDING FOUNDATION DIGGER

Filed April 14, 1943 2 Sheets-Sheet 1

Fig. 1.

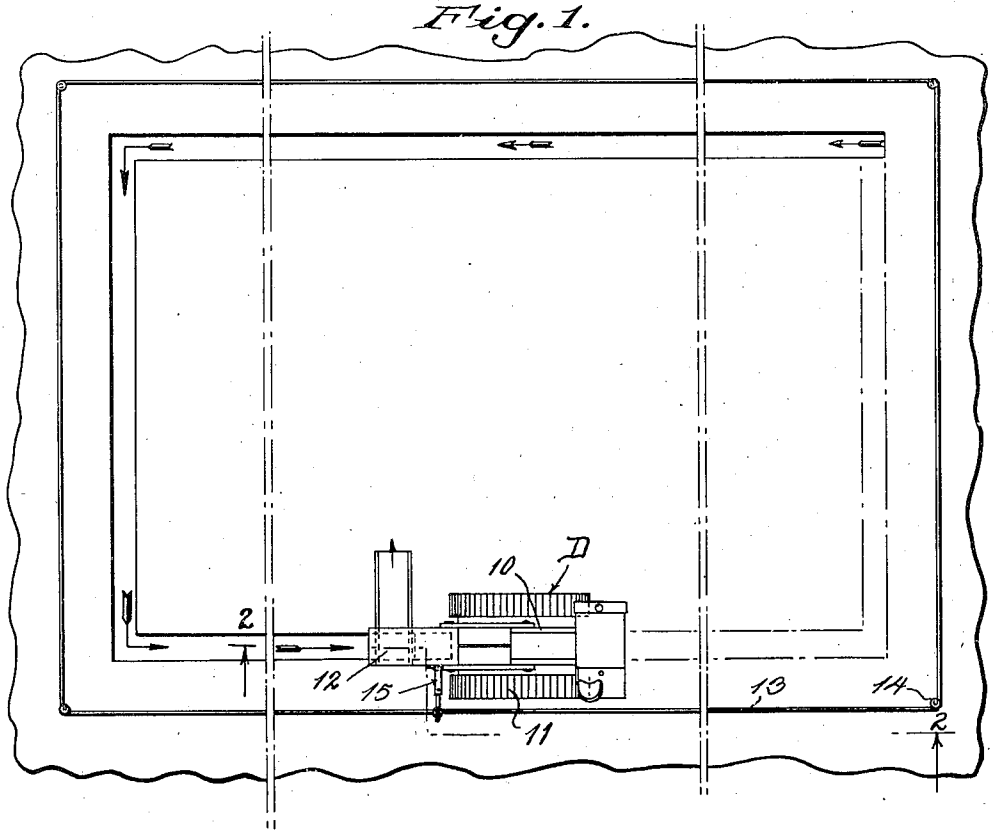

Fig. 2.

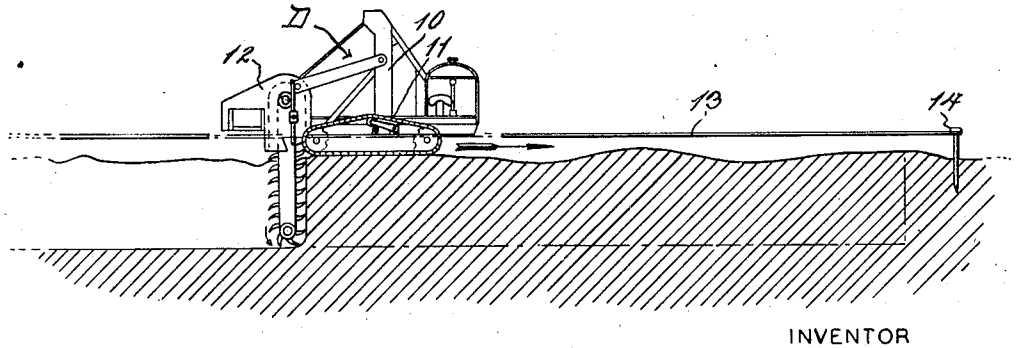

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Fig. 3.

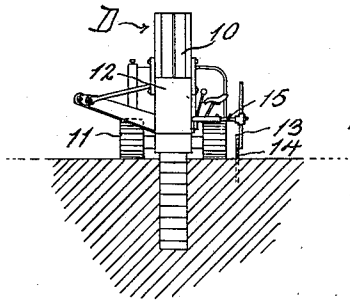


Fig. 4.

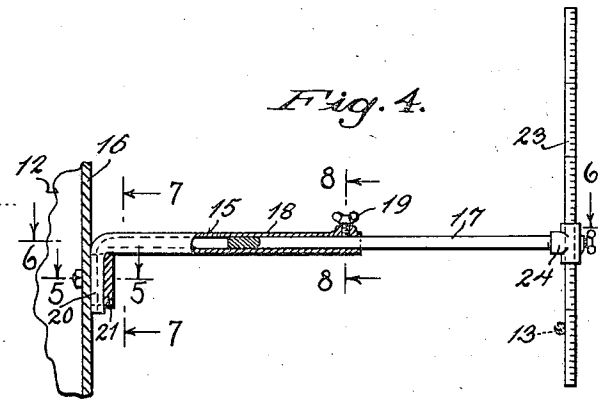


Fig. 5.

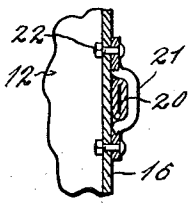


Fig. 6.

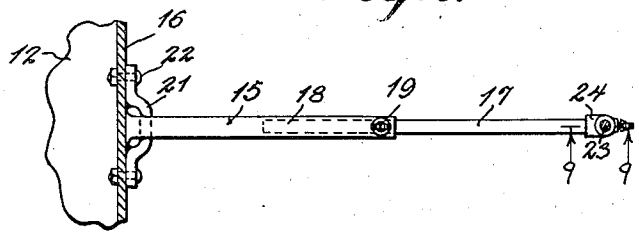


Fig. 7.

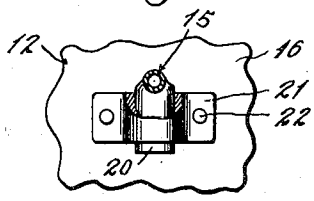


Fig. 10.

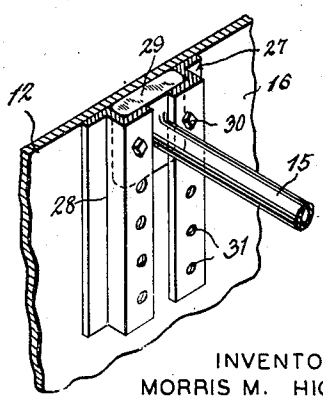


Fig. 8.

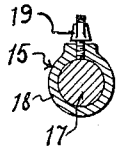
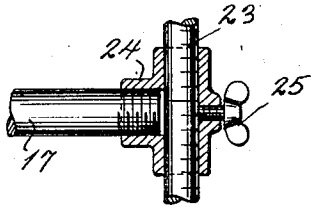


Fig. 9.



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UNITED STATES PATENT OFFICE

2,384,466

BUILDING FOUNDATION DIGGER

Morris M. Hickey, Appleton, Wis.

Application April 14, 1943, Serial No. 482,965

2 Claims. (Cl. 33—185)

This invention appertains to buildings and more particularly to a novel means for forming foundation trenches for buildings.

One of the primary objects of my invention is to provide novel means for using a ditch digging machine for the forming of trenches for foundation walls of buildings and the like, whereby such foundation trenches can be quickly and accurately dug in different kinds of ground formations with a minimum amount of difficulty and labor.

Another salient object of my invention is the provision of a ditch digging machine of the vertical boom type having novel means associated therewith for correctly guiding the machine and for accurately regulating the depth of the trench being dug during the travel of the machine irrespective of the contour of the ground over which the machine travels.

A further important object of my invention is the provision of a guide line for indicating the position of the trench and disposed parallel with the bottom wall of the trench with novel means carried by the vertical boom of the digger for engaging the guide line to guide the operator of the digger during the operation thereof.

A still further important object of my invention is the provision of novel means carried by the guide arm on the digger for indicating the depth of the cut being made, so that the operator of the machine can correctly regulate the depth of the trench irrespective of the ground contour.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, in which drawings:

Figure 1 is a top, plan view illustrating the use of the ditch digging machine for making trenches for the foundation walls of a building, the view being of a diagrammatic nature.

Figure 2 is a vertical, sectional view taken on the line 2—2 of Figure 1 looking in the direction of the arrows, the ditch digging machine being shown in side elevation.

Figure 3 is an end, elevational view of the ditch digging machine showing the same in use.

Figure 4 is an enlarged, fragmentary, side, elevational view illustrating the novel guide arm incorporated with the vertical boom of the digger, parts of the view being shown broken away and in section.

Figure 5 is a detail, horizontal, sectional view taken on the line 5—5 of Figure 4 looking in the direction of the arrows, showing the means for removably mounting the guide arm on the vertical boom.

Figure 6 is a horizontal, sectional view taken on the line 6—6 of Figure 4 looking in the direction of the arrows.

Figure 7 is a vertical, sectional view taken on the line 7—7 of Figure 4 looking in the direction of the arrows, illustrating the means for removably mounting the guide arm on the vertical boom.

Figure 8 is a detail, vertical, sectional view taken through the guide arm on the line 8—8 of Figure 4.

Figure 9 is a detail, vertical, sectional view taken on the line 9—9 of Figure 6 looking in the direction of the arrows, illustrating the means employed for adjustably holding the depth guide in a set position.

Figure 10 is a detail, fragmentary, perspective view showing another form of means for adjustably and detachably holding the guide arm on the side of the boom.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter D generally indicates a ditch digging machine and this machine can be considered of the type manufactured by the Barber Greene Company of Aurora, Illinois, and known to the trade as Model 44C standard ditcher. This ditcher D embodies a frame 10 having power driven crawlers or tracks 11. The vertical boom 12 of the digger carries an endless power driven chain having digging buckets provided with digging teeth. The buckets and teeth can be of any desired width and the boom 12 is raised and lowered by the operatoor of the machine to govern the depth of the cut being made.

Great difficulty is encountered in digging trenches for the foundation walls of a building and hand labor is generally utilized for this purpose. By my novel construction and arrangement of parts, I have found that I can use the conventional digger D for the above purpose and I am enabled to rapidly dig the foundation trench in all types of ground formations. Also with my novel arrangement I am enabled to accurately dig the foundation trench to the exact proper depth irrespective of rolling ground contours.

In accordance with my invention I erect a guide line 13 parallel to the trench to be dug and this guide line is supported at suitable distances by posts 14. Care is taken to see that the guide

line is horizontal or exactly parallel to the bottom wall of the foundation trench to be dug.

Also in accordance with my invention I mount a guide arm 15 on the side frame piece 16 of the vertical boom 12, whereby the guide arm will be raised and lowered with the boom. The guide arm is so disposed that the same will extend laterally from the boom toward the guide line 13.

In order that the guide arm 15 can reach the guide lines placed different distances from the trench to be dug, the same is made extensible and consequently I have shown an outer section 17 slidably mounted in an inner section 18. A set screw 19 can be employed for holding the section 17 in its desired extended position. The inner end of the section 18 is provided with a depending foot 20 and this foot is detachably mounted in a socket 21 which is riveted or bolted, as at 22, to the side piece 16 of the vertical digger boom. Consequently, the arm can be freely removed from the ditcher when the same is not being used.

The outer end of the arm 15 slidably carries the depth indicating guide rod 23. This depth rod 23 is graduated and is adapted to travel along the guide line 13. The depth rod 23 can be slidably mounted on the arm 15 in any preferred manner. As illustrated, I have shown a T coupling 24 secured to the arm and this coupling slidably receives the depth rod. A winged thumb screw 25 can be employed for holding the depth rod in a selected adjusted position.

The rod 23 and the arm 15 are so placed on the machine that the same will be in view of the operator of the machine and consequently the operator will be able to observe the exact contact of the rod with the guide line.

When a foundation trench is to be dug the guide arm is placed on the machine and the guide line is laid in proper position according to the character of the trench being dug. The depth rod 23 is adjusted according to the depth of the trench and to engage the guide line. The machine is now operated in the usual way and the operator keeps the guide rod, at all times, at a certain point on the guide line during the travel of the machine.

In Figure 10 I have illustrated a slightly modified form of means for adjustably, as well as detachably, mounting the guide arm 15 on the side frame piece 16 of the vertical boom 12 of the machine. In this form a guide track 27 is welded or otherwise secured to the side of the boom and as illustrated, this guide track includes spaced guide irons 28. The inner end of the guide arm 15 has formed thereon a foot 29 which is slidably received within the guide track. The guide arm can be held in a selected, adjusted horizontal position by the use of pins 30 which can be placed in any preferred opening 31 in the guide track and in openings in the foot.

Changes in details may be made without departing from the spirit or the scope of my invention, but what I claim as new is:

1. In a ditch digging machine of the type having a vertical digging boom, a socket on the side of the boom, a guide arm detachably fitted in the socket and extending laterally therefrom in a horizontal plane, and an adjustable depth rod carried by the arm and extending at right angles thereto in a vertical plane for engaging a ground guide line.

2. In a ditch digging machine of the type having a vertical digging boom, a socket on the side of the boom, a guide arm detachably fitted in the socket and extending laterally therefrom in a horizontal plane, and an adjustable depth rod carried by the arm and extending at right angles thereto in a vertical plane for engaging a ground guide line, said arm including inner and outer extensible sections.

MORRIS M. HICKEY.