Aug. 21, 1928. 1,681,282

B. C. CLUTTER

DITCHER

Filed Sept. 4, 1926

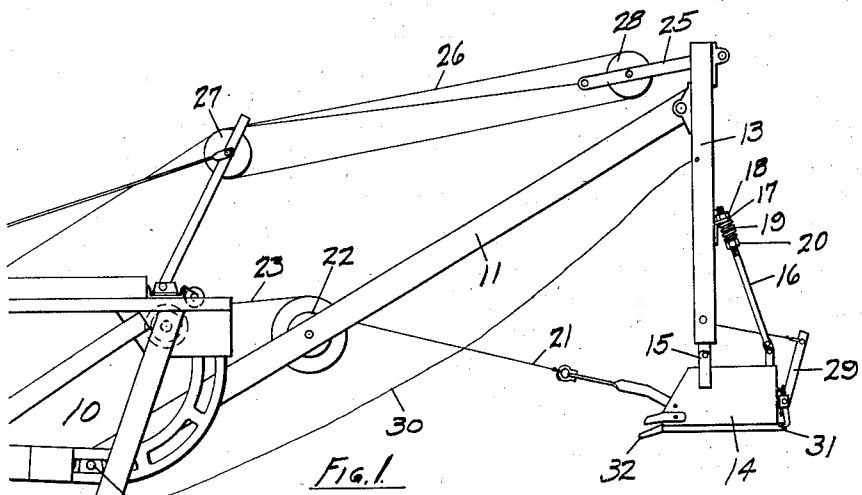


Fig. 1.

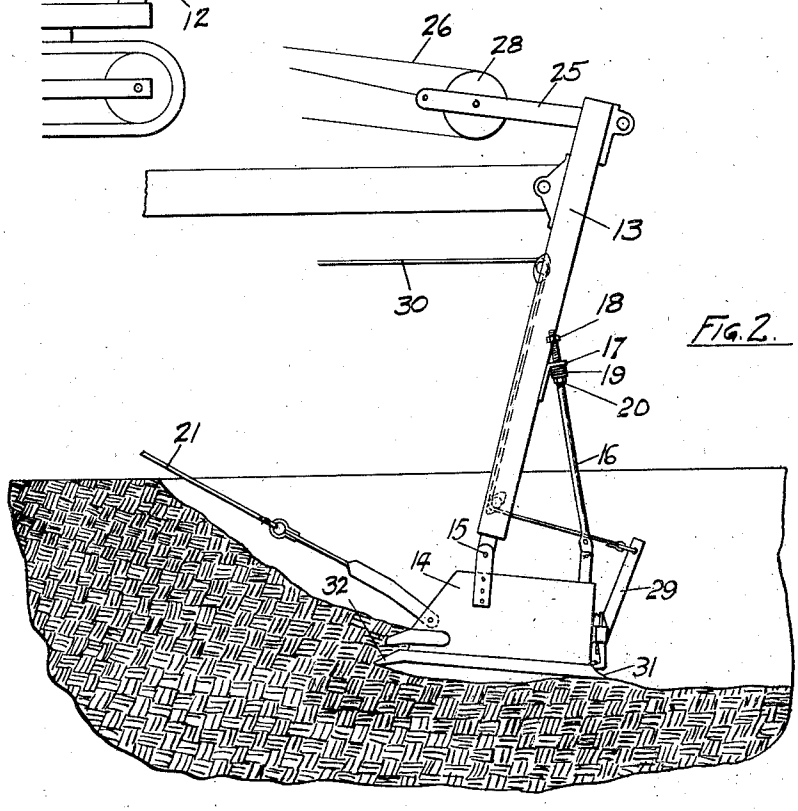


Fig. 2.

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BIRD C. CLUTTER, OF AKRON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CLUTTER-WAGNER, INC., A CORPORATION OF OHIO.

DITCHER.

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This invention relates to excavators and particularly to ditchers.

The general practice in the past has been to connect the ditcher scoop rigidly to the dipper stick. This construction is not satisfactory in that on a forward and upward movement of the scoop, in which direction the major portion of the ditching operation is performed, the "heel" of the scoop drags upon the earth in such a way as to prevent the teeth thereof from sinking the scoop in the soil to remove a full load.

The general purpose of the invention is to provide a simple, inexpensive device for connecting the ditcher scoop to the dipper stick, whereby the scoop may be effectively operated forwardly and upwardly out of a ditch to remove a full load of earth therefrom.

Particularly the invention contemplates a construction in which the scoop is yieldingly pivoted to the dipper stick whereby the "heel" of the scoop will yield under engagement with the earth and permit the teeth on the scoop to enter into the earth and remove a full load therefrom when the scoop is operated forwardly and upwardly.

The foregoing and other objects are obtained by the construction illustrated in the accompanying drawings and described below. It is to be understood, however, that the invention is not limited to the specific form thereof shown and described.

Of the accompanying drawings:

Figure 1 is a side elevation of the front end of an excavating apparatus provided with a ditcher embodying the invention; and

Figure 2 is an enlarged side elevation showing the ditcher scoop of the invention operating forwardly and upwardly out of a ditch in the usual ditching operation.

Referring to the drawings, 10 indicates the excavator apparatus which may be of any suitable type and on which may be pivoted the boom 11 of the ditcher, the pivot in the form of excavator shown being fixed at 12. Boom 11 has pivoted on its outer end the dipper stick 13 which has a scoop 14 yieldingly pivoted thereto as will be explained.

According to the preferred form of the invention, the scoop 14 is pivoted on its opposite sides as at 15 adjacent its mouth and has connected to its back end a link 16 yieldingly connected to dipper stick 13 by being extended through an apertured lug 17 thereon and being provided with a nut 18 adjustable on its end and a compression spring 19 arranged between the lug 17 and a second nut 20 adjustable along the link. The above parts are preferably so arranged as to hold the scoop 14 parallel to the ground when the dipper stick 13 is perpendicular thereto (Figure 1).

Crowding of the scoop 14 may be effected by a cable 21 connected to the scoop and wound upon a reduction drum 22 operable by a cable 23 from the source of power on the excavator (not shown) and pulling back of the scoop may be accomplished by a lever 25 connected to the dipper stick 13 and having a cable 26 connected thereto and extending about sheaves 27 and 28 and to the source of power (not shown).

The scoop 14 may be of the bottom opening or other type, the trip mechanism 29 thereon being controlled from the operator's position on the excavator by means of a trip line 30.

In performing a ditching operation, as the scoop 14 is operated forwardly and upwardly as illustrated in Figure 2, the heel 31 of the scoop tends to ride upon the earth and hold the teeth 32 of the scoop up in such a way as to prevent the scoop collecting a full load. Due, however, to the yielding of spring 19, the dipper stick 13 may be so operated as to incline the bucket properly to find its way into the earth as illustrated and thus obtain a full load.

It will appear from the foregoing that by the exceedingly simple, inexpensive improvement set forth, the ditcher is capable of ditching at a much greater rate. It will also be apparent that modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:

1. In an excavator, a ditcher including a boom, a dipper stick pivoted on the boom, a scoop pivoted adjacent its forward end upon the dipper stick, a link having a pivotal connection with the scoop adjacent its rear end, an apertured lug on the dipper stick, said link extending through said lug and having nuts adjustable thereon on opposite sides of the lug, and a compression spring operable between the lug and one of

the nuts normally urging the rear end of the scoop downwardly, the other nut limiting such action so as normally to hold the scoop substantially at right angles to the dipper stick.

2. In an excavator, a ditcher including a boom, a dipper stick pivoted on the boom, a scoop pivoted adjacent its forward end upon the dipper stick, and a link having a pivotal connection with the scoop adjacent its rear end, said link having a yielding connection with the dipper stick such as normally to hold the scoop at right angles to the dipper stick but permitting the rear end of the scoop to yield upwardly from such position.

3. In an excavator, a ditcher including a boom, a dipper stick pivoted on the boom, a scoop pivoted adjacent its forward end upon the dipper stick, and a yielding connection between the rear end of the scoop and the stick for permitting the rear end of the scoop to yield upwardly.

4. In an excavator, a ditcher including a boom, a dipper stick pivoted on the boom, a scoop pivoted upon the dipper stick, and a yielding connection between the scoop and the stick for permitting the rear end of the scoop to yield upwardly.

5. In excavating apparatus, a ditcher comprising a boom, a dipper stick on the boom, and a scoop on the dipper stick, said scoop being connected to the stick so as to be normally substantially at right angles thereto, but capable of yielding to greater angles with respect thereto under action of the scoop upon the earth, and resilient means for resisting yielding movement of the scoop.

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