

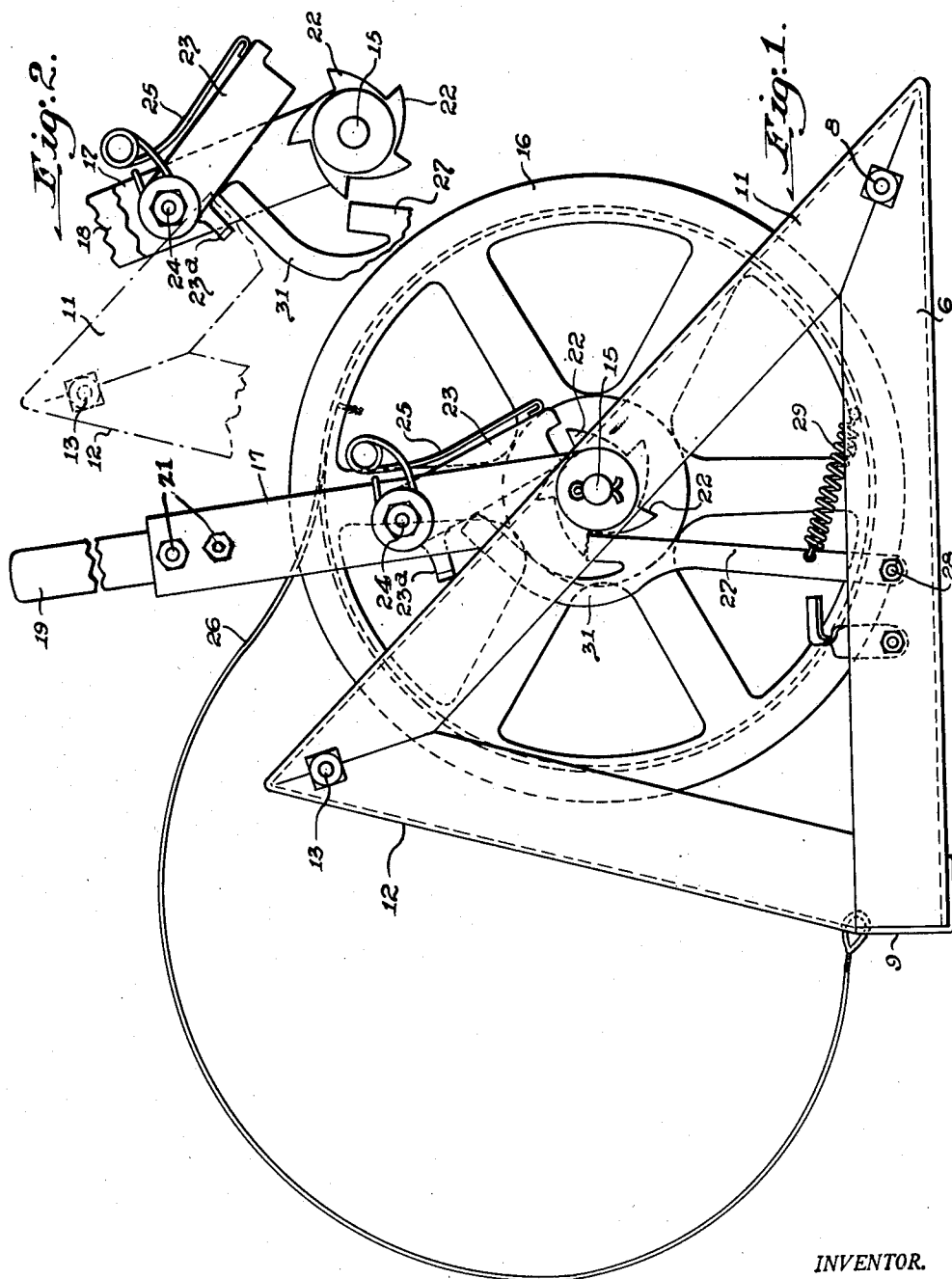
Nov. 29, 1949

T. J. KERR
CUTTING APPARATUS

2,489,784

Filed July 2, 1946

2 Sheets-Sheet 1



INVENTOR.
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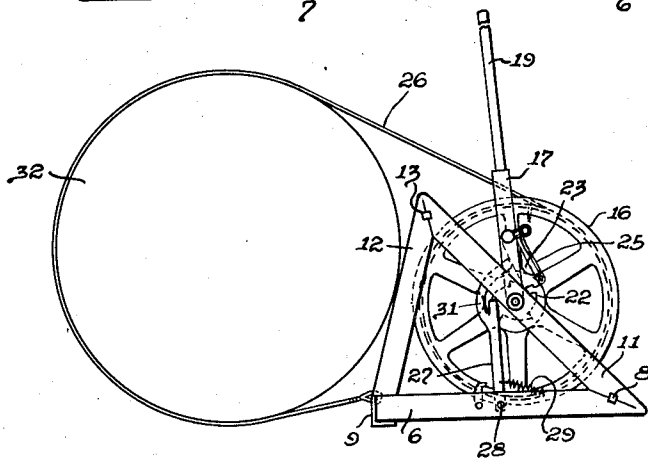
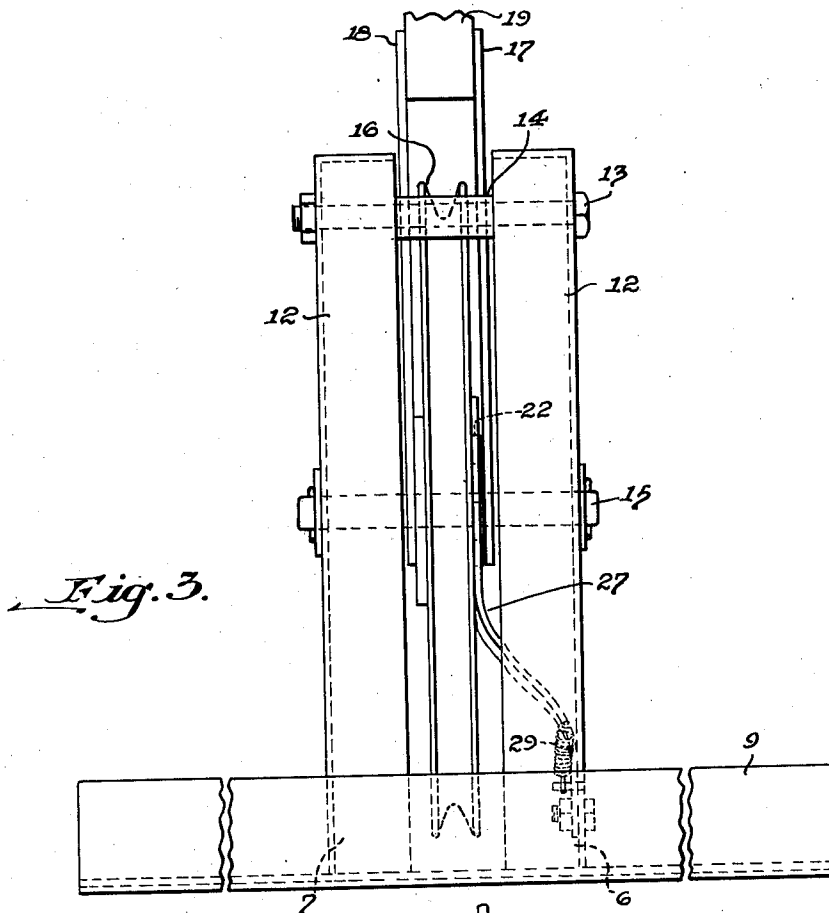
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UNITED STATES PATENT OFFICE

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CUTTING APPARATUS

Thomas J. Kerr, New Alexandria, Pa.

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3 Claims. (Cl. 25-105)

1
My invention relates to cutting devices of the type where a wire is employed as the cutting implement, and is particularly suitable in cutting asphalt, tar and materials of similar consistency, the device being particularly useful in the cutting of asphalt when it has been removed from a container and is of such consistency or temperature that it cannot readily be broken into pieces of convenient sizes. It will be understood that the apparatus can be used in the cutting of various other materials of a plastic or friable nature.

One object of my invention is to provide a device of the character referred to which can readily be moved from place to place, it being of light weight and requiring no mounting equipment at locations where it is to be used.

Another object of my invention is to provide a winch device for drawing a cutting wire through material, in a simple and effective manner, with provision of improved means for releasing the winch for free rotative movement when withdrawing the wire therefrom preparatory to a cutting operation or in winding slack wire on the winch.

Still another object of my invention is to provide a winch device for a cutting wire, having a pawl and ratchet mechanism for turning the winch in a wire-winding direction and also having a latch that prevents backward movement of the winch, together with means for automatically and simultaneously disengaging both the pawl and the latch and holding them open, through backward movement of the winch-winding mechanism to a predetermined point.

In the accompanying drawings, Figure 1 is a side view of the apparatus; Fig. 2 is a view, on an enlarged scale, of a portion of the apparatus of Fig. 1, but with the pawl and latch in their disengaged positions; Fig. 3 is an end view of the apparatus, and Fig. 4 is a reduced view showing the manner in which the apparatus is employed in cutting material.

The apparatus is provided with a framework having base bars 6 and 7 which are connected at one end by a bolt 8 and at the other end by a cross bar 9. Pairs of upwardly-inclined bars 11 and 12 are secured at their lower ends to the base bars and at their upper ends connected by a tie bolt 13 having a spacing sleeve 14 to fasten together the upright members in laterally-spaced relation.

A shaft 15 is mounted in the bars 11 and a grooved reel 16 is journaled on this shaft, between the bars 11. Lever-carrying bars 17 and 18 are pivotally connected to the shaft 13 and a

2
handle or lever 19 is rigidly fastened to the bars by bolts 21. The reel or winch 16 has ratchet teeth 22 for engagement by a pawl 23 that is pivotally connected at 24 to the bar 17 and has a spring 25 that biases it into engagement with the teeth 22 so that when the lever 19 is oscillated, the reel will be turned in a clockwise direction upon each forward movement of the lever, to wind thereon a cutting wire 26 which may suitably be of piano wire.

A latch 27 is pivotally connected at 28 to the base bar 6 and is biased into position beneath the teeth 22 by a spring 29, and holds the reel against backward movement.

When the lever bar 17 is swung in a counterclockwise direction to the limit of its movement (Fig. 2), the pawl 23 engages an extension 31 on the latch to push the latch against the tension of its spring 29 and hold it out of the path of movement of the teeth 22. The pawl also will be thereby pushed to its inoperative position, where a hook 23a carried by the pawl 23 abuts against the edge of the bar 17, as the spring 25 may not be sufficiently strong to cause tripping of the latch 27, if the wire happens to be under considerable tension. The cutting wire 26 can then be unreeling for a sufficient distance to permit it to be slid over the end of the material to be cut, such as a cylindrical block 32 of asphalt. Upon then swinging the lever 19 in a clockwise direction, the latch 27 will be released and the pawl 23 moved to tooth-engaging position by its spring 23, and some of the slack of the wire taken up by the reel. Repeated oscillatory movements of the lever will cause its pawl 23 to wind the wire step-by-step upon the reel 16, until the wire has been drawn entirely through the material and cut it in two. During these oscillatory movements, the lever will not be swung so far counterclockwise as to disengage the latch 27 from the teeth as in Fig. 2, and the latch will therefore hold the reel against backward turning movement when the lever is being swung in its backward stroke. Upon completion of a cutting operation, the lever will be swung far enough to disengage the latch from the rack teeth 22 and therefore permit withdrawal of the wire preparatory to a cutting operation as above explained.

I claim as my invention:

1. Cutting apparatus comprising a frame, a winch journaled in the frame and having ratchet teeth thereon, a cutting wire having one of its ends secured to the frame and its other end secured to the winch, a lever having a pawl that is engageable with the ratchet teeth, to effect inter-

3

mittent rotative movement of the winch during oscillation of the lever, to thereby pull the wire through material that is partially encircled by the wire, a latch movable on the frame and yieldably urged into engagement with the ratchet teeth, to prevent backward movement of the winch during retractive strokes of the lever, and means for automatically moving and holding the latch at an inoperative position upon a retractive stroke of the lever beyond a predetermined point.

2. Cutting apparatus comprising a frame, a winch journaled in the frame and having ratchet teeth thereon, a cutting wire having one of its ends secured to the frame and its other end secured to the winch, a lever having a pawl that is engageable with the ratchet teeth, to effect intermittent rotative movement of the winch during oscillation of the lever, to thereby pull the wire through material that is partially encircled by the wire, a latch movable on the frame and yieldably urged into engagement with the ratchet teeth, to prevent backward movement of the winch during retractive strokes of the lever, and means for automatically shifting the pawl and the latch to inoperative positions, and holding them there, upon movement of the lever to a point beyond its normal range of oscillation, to thereby leave the winch free for unwinding the wire therefrom.

3. Cutting apparatus comprising a frame, a

4

winch journaled in the frame and having ratchet teeth thereon, a cutting wire having one of its ends secured to the frame and its other end secured to the winch, a lever having a pawl that is engageable with the ratchet teeth, to effect intermittent rotative movement of the winch during oscillation of the lever, to thereby pull the wire through material that is partially encircled by the wire, a latch movable on the frame and yieldably urged into engagement with the ratchet teeth, to prevent backward movement of the winch during retractive strokes of the lever, and an extension on the latch, that is engaged by the pawl when the lever is retracted to a predetermined point behind its normal range of oscillation, the said extension being so positioned that the latch and the pawl will thereby both be moved to their inoperative positions and permit free rotation of the winch.

THOMAS J. KERR.

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