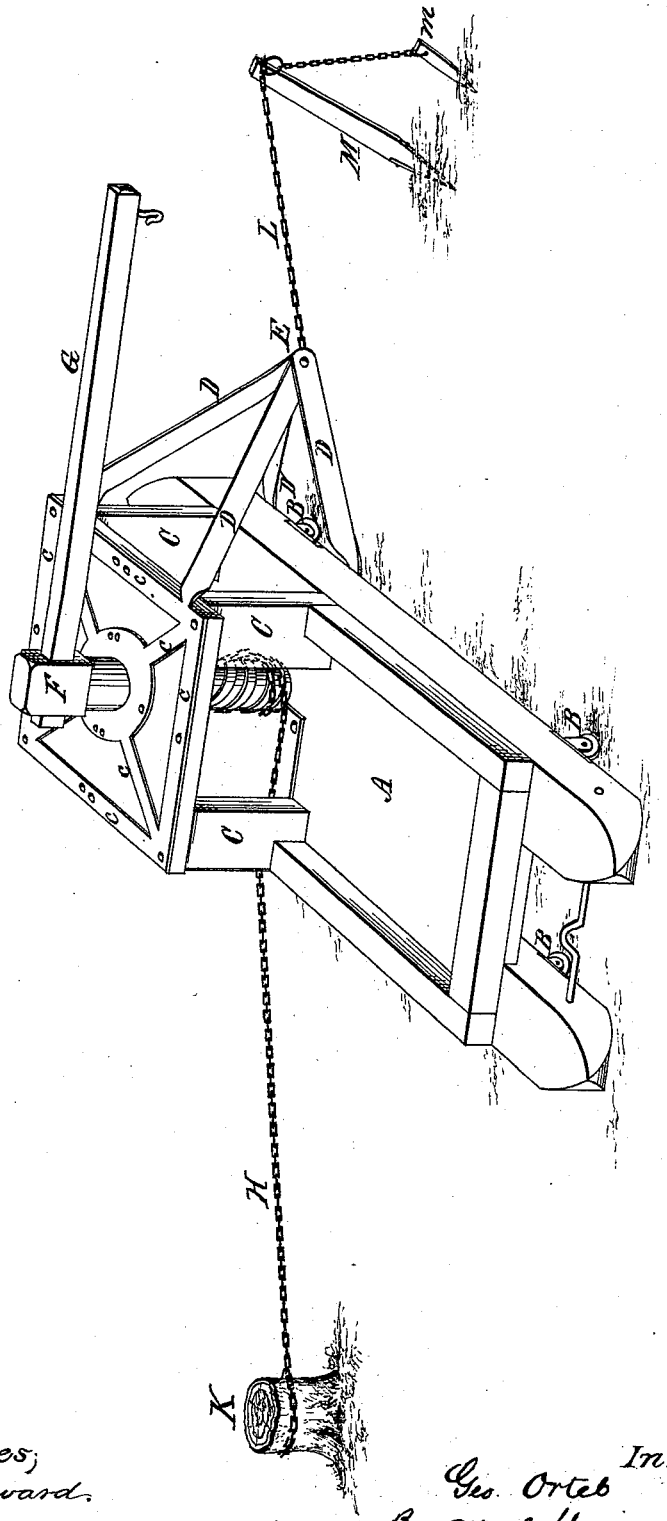
G. ORTEL.

STUMP EXTRACTOR.

No. 188,401. Patented March 13, 1877.



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UNITED STATES PATENT OFFICE.

GEORGE ORTEL, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN STUMP-EXTRACTORS.

Specification forming part of Letters Patent No. **188,401**, dated March 13, 1877; application filed April 20, 1876.

To all whom it may concern:

Be it known that I, GEORGE ORTEL, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Stump-Extractors; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

My invention relates to a novel construction of device for extracting stumps. It has for its object to so construct the machine that, while a very light strain is exerted at the anchor-point, a powerful strain may be exerted upon the stump to be extracted; it also has for its object so constructing the machine that, while the anchor-chain may remain fixed the extracting-chain may be carried to several stumps in succession, at various angles to the anchor-point, and the strain exerted to pull the stump operate initially, to adjust the machine automatically between the anchor and stump to be extracted. With these objects in view, my invention consists of a crab or capstan, mounted vertically within a suitable frame upon a truck or platform provided with caster or swiveling wheels, the crab being furnished with a drag-chain, and adapted at its top to receive a hand-spar and lever for rotating the same, and the frame and truck provided at one side with four arms, converging and joined at a point about in the same plane with the top surface of the truck, and provided with an anchor-chain, as will be hereinafter more fully set forth.

To enable those skilled to more fully understand the same, I will proceed to describe my improved stump-extractor, referring by letters to the accompanying drawing, which represents a perspective view of a machine embodying my invention.

A represents the body or truck, mounted upon caster or swivel wheels B. On the rear end of the truck a rectangular frame, C, is mounted, which is suitably bound and strengthened by binding-straps *c*, from which extend, or to which are spliced and riveted, four metallic arms, D, which converge from the top and bottom of the machine to a point, E, in about the same plane with the top surface of the truck A. F is a crab or capstan, having proper bearings in the truck and top of frame, and provided at its upper projecting end with a suitable eye or slot to receive a hand spar or lever, G, by which the crab is rotated in its bearings, to coil or wind a drag-chain, H, secured thereto. L is an anchor-chain, secured to the four arms D at their point of juncture.

It will be observed that, the arms D being rigidly secured to the frame and truck, said arms are stiff, and produce a sort of lever-power upon the truck when dragging it into alignment, and when in alignment the strain upon the machine is equally distributed to the four corners of the frame, and the same is held very steady during the extraction of the stump.

The operation of my improved machine is as follows: To extract a stump, represented at K, the anchor-chain L is secured around the base of some contiguous stump, or to an artificial stump or compound wedge-brace, M *m*. The end of the extracting or drag chain H is then made fast to the top portion of the stump to be extracted, the other end being secured to the crab F, when the lever G is swung in the arc of a circle by hand or by the power of horses attached thereto, which, winding the chain H upon the capstan, tightens the same and drags the machine in alignment with the anchor and the stump to be extracted, after which the whole power of the crab is exerted to pull over and uproot the stump K.

When there are several stumps in the same neighborhood, and at varying angles from the anchor-point, to be extracted, the drag-chain H is fastened, successively, to the remaining stumps, and the action of the strain by the capstan automatically shifts the machine on its wheels into alignment with the anchor and stump to be extracted.

I have found by actual experiment that, with the peculiar construction shown, the power exerted by the capstan upon the drag-chain H and anchor is about in the proportion of seven to two, so that a stump may be readily extracted with comparatively slight anchorage.

I am aware that it is not new to mount the capstan of a stump-extractor upon a caster-

truck, and that the anchor-chain has been secured to two vertically-converging arms, connected to the capstan-shaft, and I do not, therefore, wish to lay claim thereto; but

What I claim as new, and desire to secure by Letters Patent, is—

In combination with the truck A, mounted upon casters B, the capstan F, mounted in a frame, C, the drag-chain H, secured to the capstan, and anchor-chain L, secured to four converging arms, rigidly connected to the frame and truck, substantially as shown and described.

GEORGE ORTEL.

Witnesses:
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