

UNITED STATES PATENT OFFICE.

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DIRT-SCRAPER.

No. 797,709.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PER JOHAN PETTERSON, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Dirt-Scrapers, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of an excavating device embodying my invention, and Fig. 2 is a transverse sectional view of the same taken on line 2 2.

The object of this invention is the provision of an excavator so constructed and arranged that it is capable of being efficiently used for general work and also in situations where it is desirable or requisite to transport the excavated material a considerable distance and under most unfavorable conditions.

The invention consists in the novel construction and adaptation of parts, as hereinafter explained and specifically pointed out in the claims.

In the drawings, the reference-letter A designates the sides of the box-like excavator, which are rigidly connected by angle-bars B to the top wall C and end walls D D'. These walls are preferably made of a single plate, as shown, and are curved at their upper corners *d*, while the lower part *d'* of the rear wall is curved forwardly and within which last-named curved portion is detachably secured a cutter-blade E. The front end wall D extends but part way to the bottom of the sides, which latter therebelow have their front ends cut away at rearwardly-sloping edges, as *a* in Fig. 1. Pivotaly connected to the lower edge of the front wall by hinges *g* is a pendent door G of a width equal to the outside width of the box and is operatively held against the said sloping edges of the sides by a latch-bar H, which is attached at one end to a transverse angle-bar *g'*, secured to the door and by a notch *h* in proximity to its other end to a reinforcing-bar I passing around the exterior of the box. The latch-bar is held in its engaged position by a spring J and is disconnected by raising the bar thereagainst either by hand or by a line which may be conveniently attached thereto through the hole *h'*, provided in the outer end of the same. The rear end wall is braced by tie-rods K, extending through holes therein adjacent to its lower edge and thence diagonally through the box and its top, where it is adjustably secured by

nuts *h*, seated upon a web of the bar I. A longitudinally-disposed strap L is fixedly secured to each of the box sides and is provided in its protruding ends with apertures *l*, whereby it may be connected to the drag-lines M M', by which the device is operated. Supporting-feet N, positioned in proximity of the box ends, extend inwardly from the sides and are desirably formed by angle-plates O, having one of their respective limbs *o* secured upon the outer faces of the sides, while the other limbs project inwardly through slots formed in the sides and to which are removably secured the filling-pieces *p* and the wearing-shoes P. The purpose of these feet is to provide a substantial bearing or support for the box when being hauled upon the rails of an inclined platform from which the load is deposited.

The operation of the invention is as follows: In making an excavation the device is drawn, through power applied to the drag-line M, in the direction indicated by the arrow X in Fig. 1, which causes the cutter-bar at the rear end to penetrate into the ground, and in so doing lowers the entire device, so that a further forward movement will press the door into its closed position (shown by full lines in Fig. 1) and which is there locked by the action of the spring effecting the engagement of the latch-bar with the bar I. The dirt meanwhile is caused to fill the box by being scraped therein through the action of the cutter and when completely filled is prevented from losing its load by reason of the area of the open base when the door is in its described position being less than the area of a horizontal plane thereabove. When the device has reached the dump, the latch-bar is disengaged, as before explained, and the downward pressure of the load will cause the opening of the door, which may be accelerated by a backward movement of the device accomplished by a pull upon the line M', and the bottom opening being enlarged permits the unobstructed discharge of the load. The device is returned to any desired position by being drawn backwardly with the line M' and during which operation the front end will be sufficiently buried in the dirt to retain the door in its open position (shown by broken lines in Fig. 1) until the direction of travel is again reversed.

The invention while valuable for other uses is especially so for excavating auriferous material from the submerged bed of a river or beach from the fact that it takes and packs its

load through the action of its motive power and retains the same substantially intact until it is desired to discharge the same. Furthermore, when working upon a beach the action of the surf does not affect the load, as it is entirely protected therefrom by the inclosing box sides, together with the ground beneath.

The device is simple and inexpensive in construction, easy to operate, is reliable in its action, and perfectly adapted for the purposes of the invention.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device of the character described, comprising a box-like structure open at the under side and having the lower portion of rear wall curved forward, a pendent door hinged to the front wall and adapted to be swung upon either side of a vertical plane projected through the hinge connections thereof, means for retaining the said door in its rearwardly-inclined position, means for disengaging said retaining means, and a cutter-blade detachably secured to said rear wall, substantially as described.

2. A device of the character described, comprising a box-like structure open at the under side and having a curved rear wall and a partial front wall, a cutter-blade detachably secured to the rear wall, a pendent door hinged to the said front wall, a latch-bar attached to

the said door and extending through the top wall of the structure, means for engaging the said bar to retain the door in its closed position, and a spring to maintain such engagement of the bar, substantially as described.

3. In a device of the character described, the combination with the box-like structure, which is open at its under side, and having oppositely-curved rear and front walls, and a door hinged to the front wall, of the inwardly-projecting feet secured to the side walls of the structure and the detachable shoes for the said feet, substantially as described.

4. In a device of the character described, the combination with a box-like structure open at its under side and having oppositely-curved front and rear walls, devices secured to the structure whereby it may be dragged either forwardly or backwardly, a door hinged to the front wall and adapted to be tilted in the opposite direction to the movement of the structure by engaging with the ground therebeneath, and the means for retaining the door in its backwardly-tilted position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PER JOHAN PETTERSON.

Witnesses:

PIERRE BARNES,
F. DUDLEY MOSS.