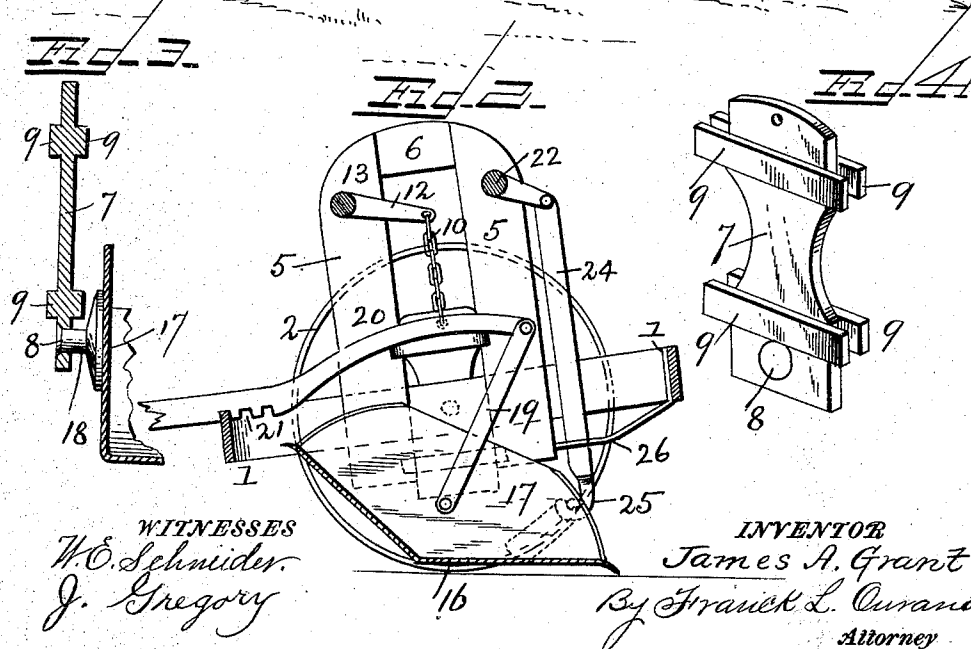
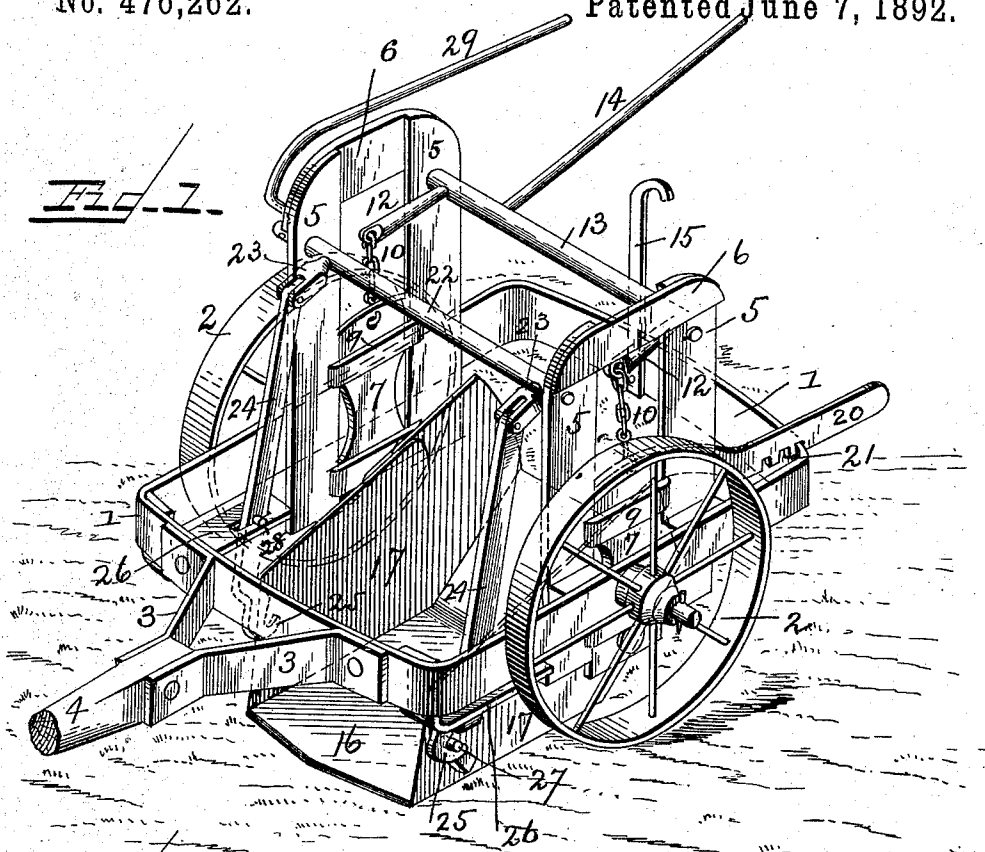


(No Model.)

J. A. GRANT.
EARTH SCRAPER.

No. 476,262.

Patented June 7, 1892.



WITNESSES
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UNITED STATES PATENT OFFICE.

JAMES A. GRANT, OF MOUNT PLEASANT, IOWA.

EARTH-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 476,262, dated June 7, 1892.

Application filed August 17, 1891. Serial No. 402,930. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. GRANT, a citizen of the United States, residing at Mount Pleasant, in the county of Henry and State of Iowa, have invented certain new and useful Improvements in Earth-Scrapers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in grading and excavating machines of that class in which a scoop, mounted upon wheels and drawn by any suitable motive power, is employed to loosen and receive the earth and remove it to the place where it is to be dumped or deposited.

The object of the invention is to provide a machine for the above purpose which shall possess superior advantages with respect to simplicity and economy in construction and reliability and efficiency in operation.

The invention consists in the novel construction and combination of parts herein-after described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a machine constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a sectional view of one of the vertically-sliding cross-heads, and Fig. 4 a perspective view of the same.

In the said drawings, the reference-numeral 1 designates a rectangular frame provided with laterally-extending journals, on which are mounted the supporting and driving wheels 2. This frame is also provided at the front with bars 3, to which the tongue 4 is secured.

To each side of the frame 1 are secured uprights 5 5, connected together at their upper ends by bars 6, said uprights forming ways, within which are located the vertically-movable cross-heads 7, having apertures 8 at their lower ends and provided with lateral bars 9, which overlap the edges of said cross-heads 7 and embrace the inner edges of the uprights.

At their upper ends chains 10 are connected, which are also connected to arms 12, secured to a transverse rock-bar 13, journaled in the uprights 5, and provided with an operating-rod 14, the rear end of which is adapted to engage with a hooked standard 15, secured to the rear of frame 1.

The numeral 16 denotes the scoop, consisting of the double inclined bottom and sides 17. These sides are provided with studs 18, which are journaled or pivoted in the apertures 8 in the cross-heads. Secured to one of the sides of the scoop is a pitman 19, the upper end of which is pivoted to a rearwardly-extending rod 20, provided on its under side with a series of notches 21, adapted to engage with the rear end of frame 1. Journaled in the uprights 5 is a rock-bar 22, having forwardly-extending crank-arms 23, in which are pivoted bars 24, having hooked lower ends 25, which extend through brackets 26, secured to frame 1, said hooks being adapted to engage with lugs 27 on the sides of the scoop. Said bars 24 above their hooked ends are provided with studs 28, which are adapted to engage with the brackets 26 and limit the downward movement of the bars. The rock-bar 22 is provided with an operating-rod 29.

The operation is as follows: When in the position shown in Figs. 1 and 2, the machine is ready for work, so that when drawn along the ground the front edge thereof will engage with and loosen the earth, which will be forced into the scoop. When a sufficient load has accumulated in the scoop, it is elevated out of contact with the ground by means of the cross-heads and connections and operating-rod, when the machine is drawn to the place of deposit and the scoop dumped by means of rod 20 and pitman 19, the notches in rod 20 engaging with the edge of the rear side of frame 1 and locking the same and preventing the scoop from being dumped until disengaged. By means of the hooked bars 24, rock-bar 22, and the studs 28 the depth of cut of the scoop can be regulated. From the above it will be seen that I provide a very efficient machine by which the earth may be readily excavated by the scoop and which may be dumped from the front or rear, as desired. The machine also possesses other ad-

vantages which will be apparent to those skilled in the art, and need not therefore be enumerated here.

Having thus described my invention, what I claim is—

1. In a grading and excavating machine, the combination, with the frame and the wheels, of the uprights secured to said frame, the cross-heads vertically movable in said uprights, the rock-bar having arms, the chains connecting said arms with the cross-heads, the scoop pivoted to said cross-heads, the pitman secured to the scoop, and the rearwardly-extending operating-rod connected with the pitman, substantially as and for the purpose described.

2. In a grading and excavating machine, the combination, with the frame, the wheels, and the pivoted scoop, of the transverse rock-bar having forwardly-extending arms, the bars connected with said arms, having hooked lower ends, the lugs on the scoop engaging with said hooked ends, the pitman secured to the scoop, and the rearwardly-extending operating-rod connected with the pitman, substantially as and for the purpose described.

3. In a grading and excavating machine,

the combination, with the frame, the wheels, and the pivoted scoop, of the transverse rock-bar having forwardly-extending crank-arms, the bars connected with said arms, having hooked lower ends, and studs above said ends, the brackets through which said bars pass, and the lugs on the scoop, with which said hooked bars engage, substantially as described.

4. In a grading and excavating machine, the combination, with the frame, the wheels, the uprights, the cross-heads working in said uprights, the transverse rock-bar having operating-rod and crank-arms, the chains connecting the said arms and cross-heads, the pivoted scoop, the pitman, and operating-rod connected therewith, of the hooked bars engaging with lugs on the scoop, the crank-arms and rock-bar, with which said bars are connected, and the rod for operating said rock-bar, substantially as described.

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

JAMES A. GRANT.

Witnesses:

ED LINES,

C. V. ARNOLD.