

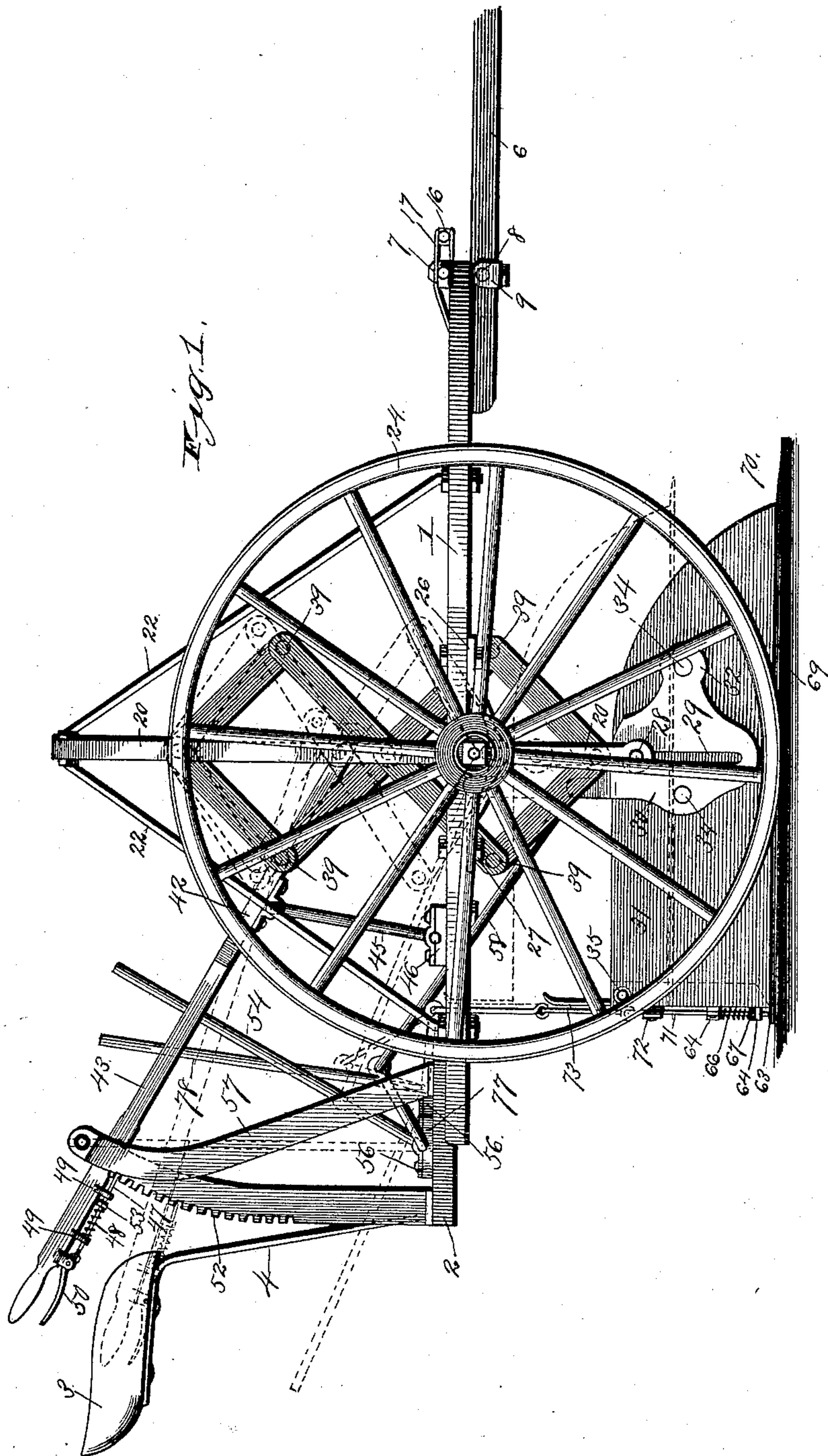
(No Model.)

T. O. O. SITLINGTON.
EARTH SCRAPER.

4 Sheets—Sheet 1.

No. 475,818.

Patented May 31, 1892.



Witnesses:
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Geo. L. Condon

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T. O. O. Sitlington
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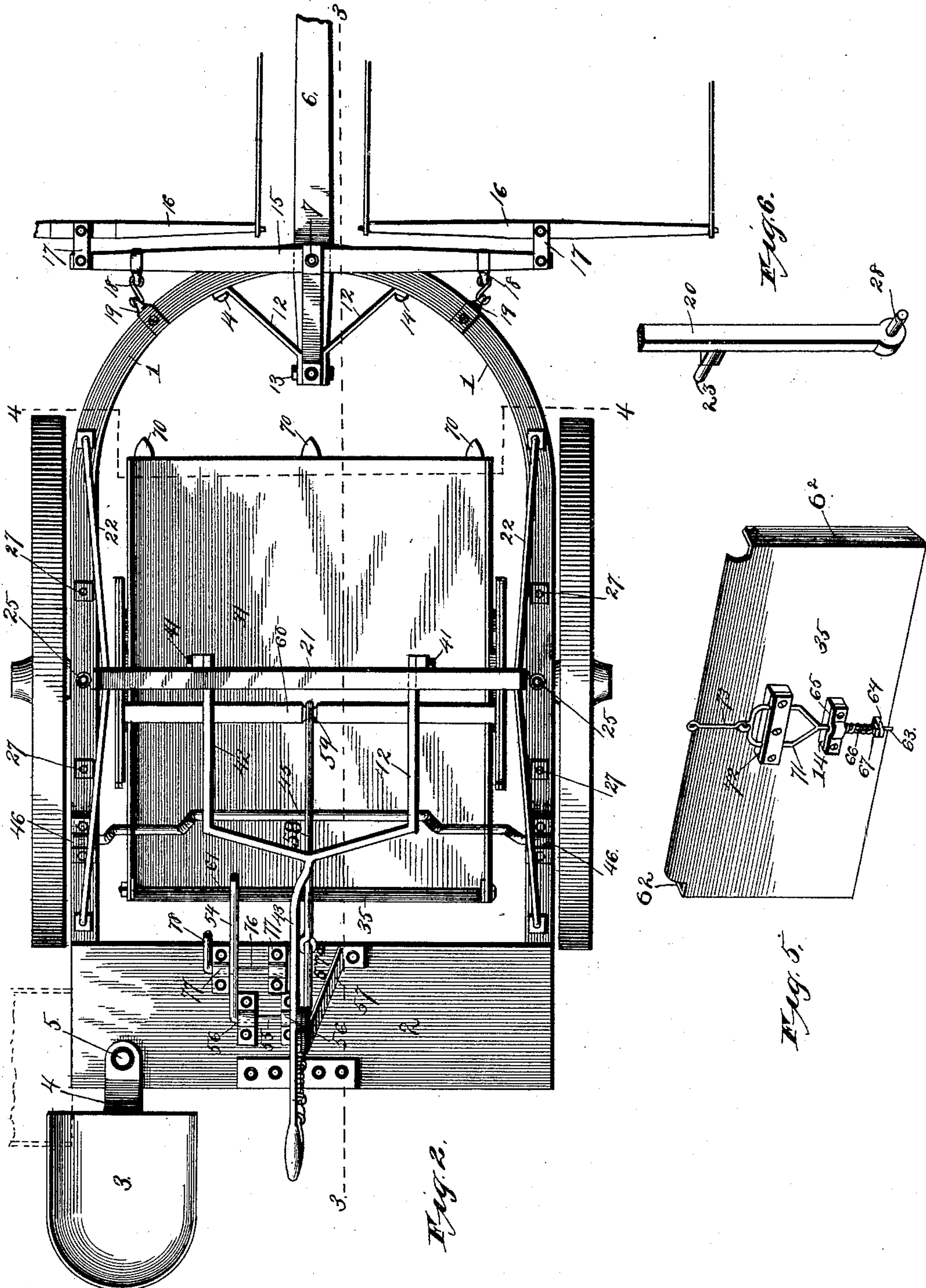
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T. O. O. SITLINGTON.
EARTH SCRAPER.

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Patented May 31, 1892.



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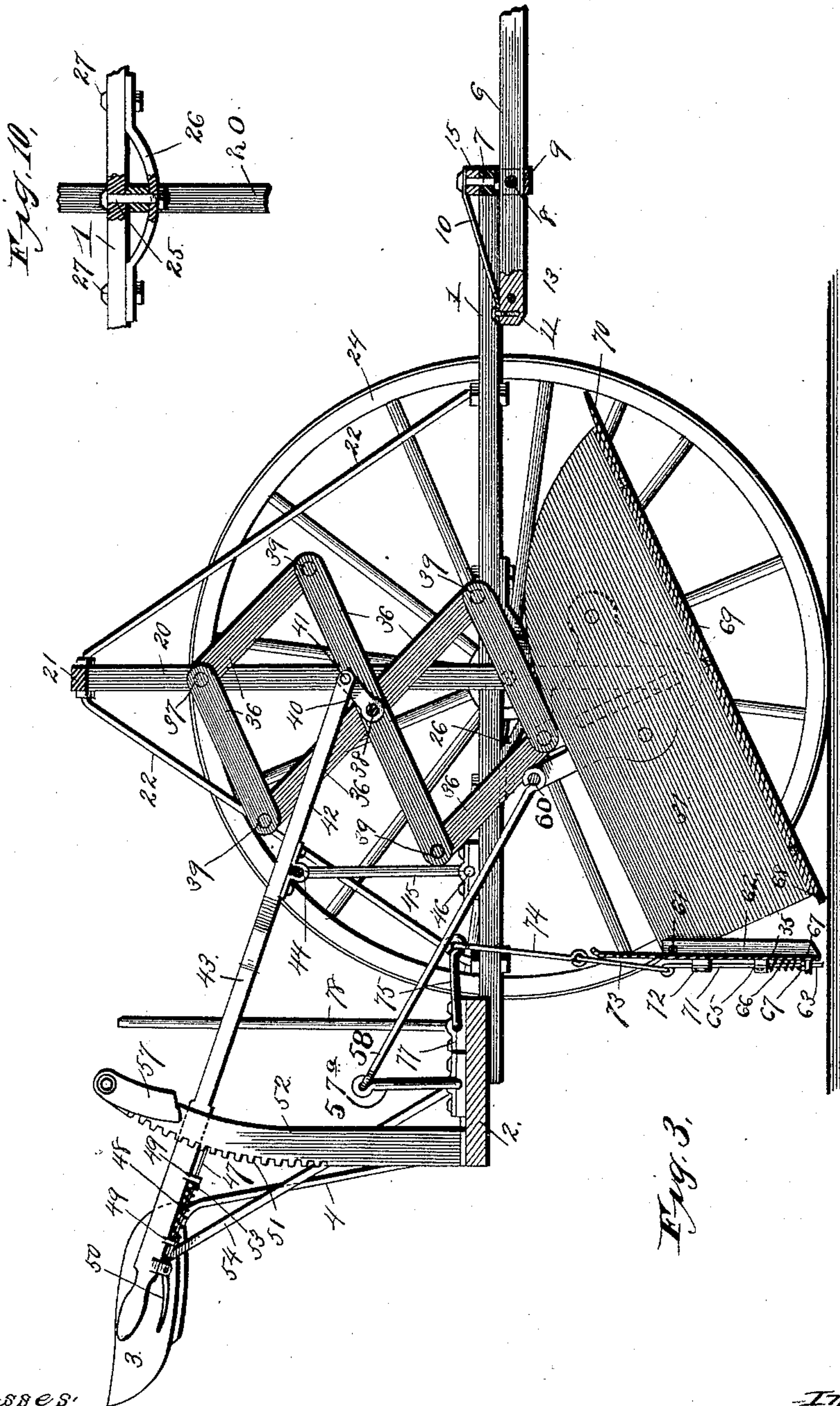
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T. O. O. SITLINGTON.
EARTH SCRAPER.

No. 475,818.

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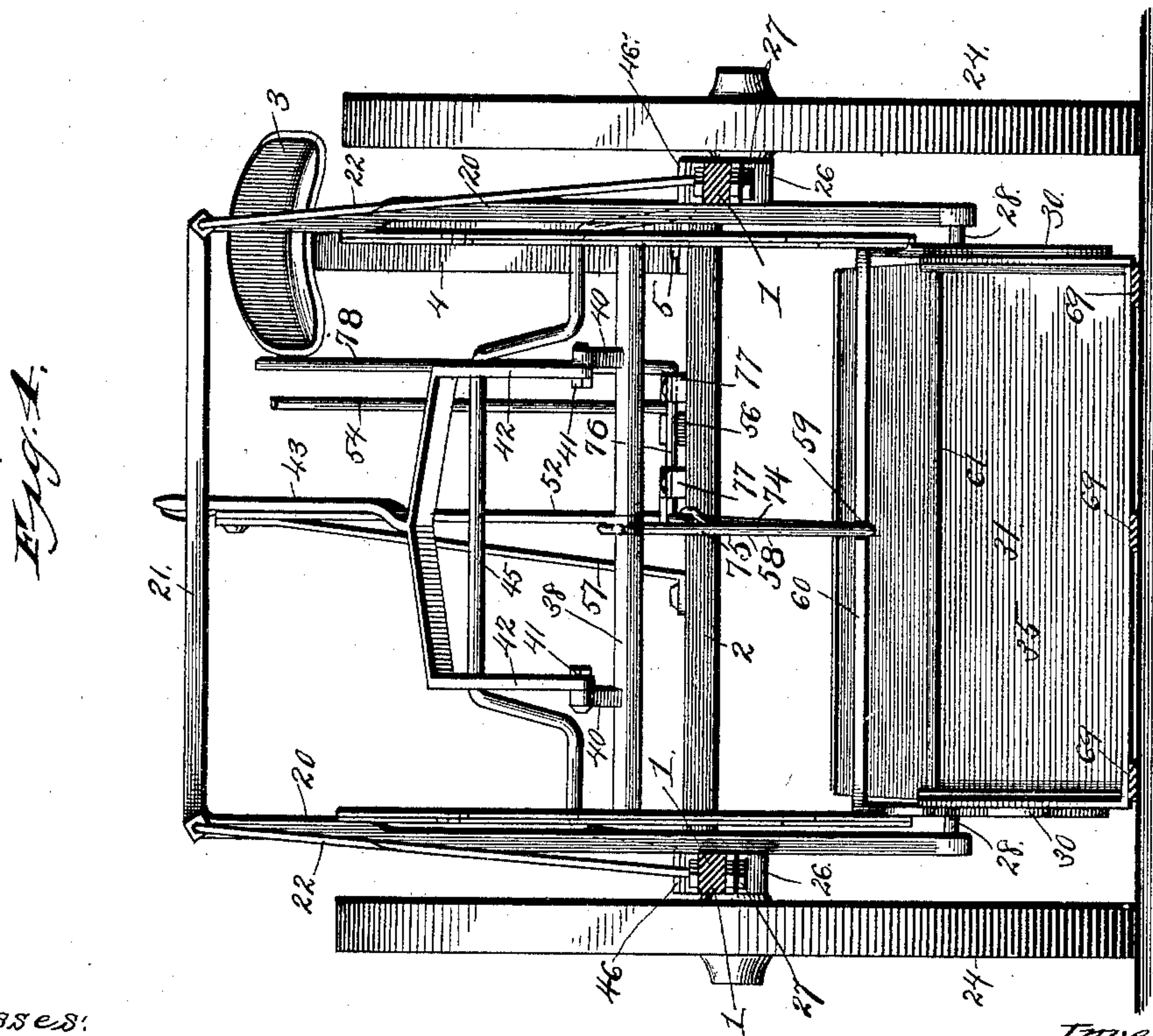
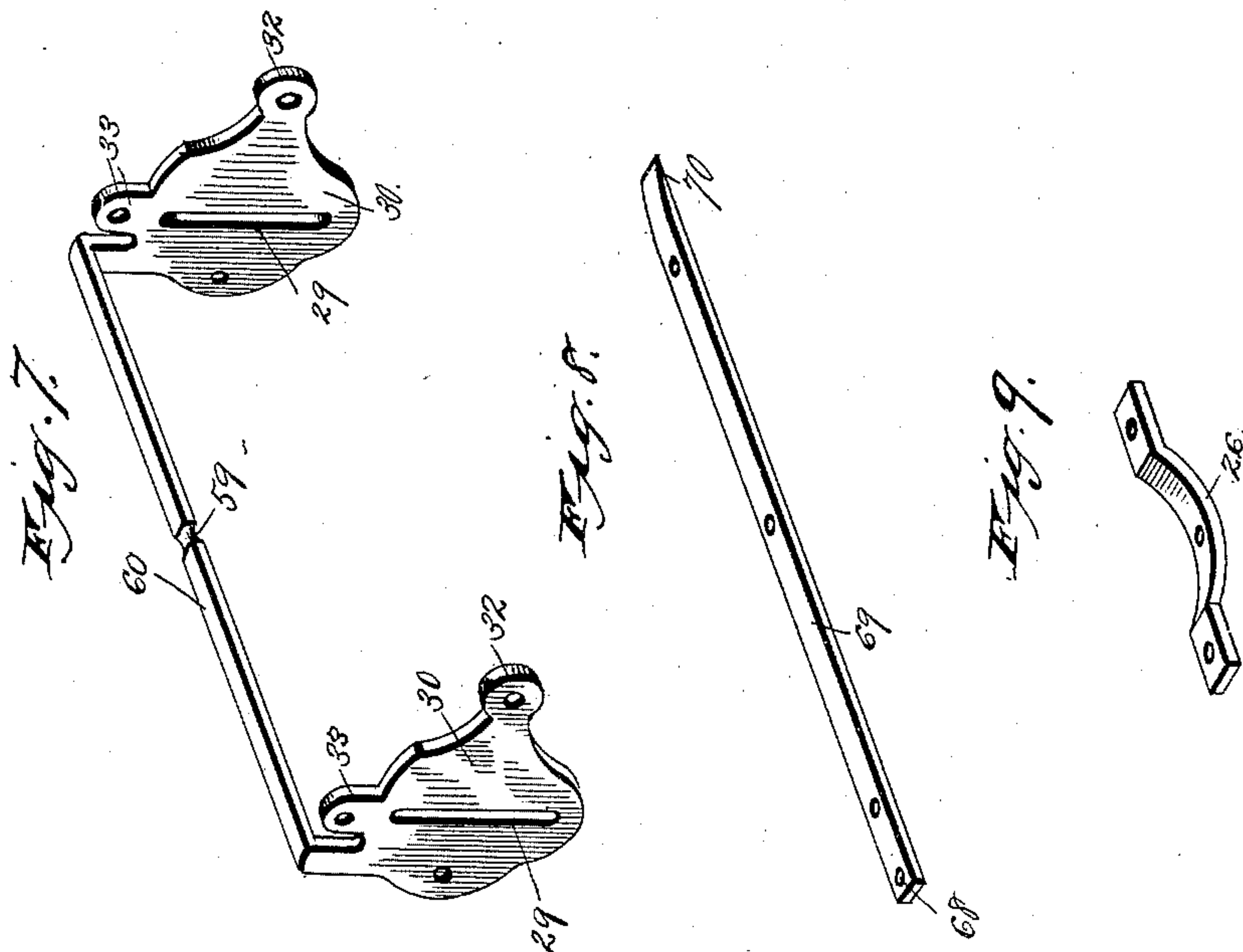
(No Model.)

4 Sheets—Sheet 4.

T. O. O. SITLINGTON.
EARTH SCRAPER.

No. 475,818.

Patented May 31, 1892.



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UNITED STATES PATENT OFFICE.

THOMAS O. O. SITLINGTON, OF INDEPENDENCE, MISSOURI.

EARTH-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 475,818, dated May 31, 1892.

Application filed November 27, 1891. Serial No. 413,360. (No model.)

To all whom it may concern:

Be it known that I, THOMAS O. O. SITLINGTON, of Independence, Jackson county, Missouri, have invented certain new and useful
5 Improvements in Earth-Scrapers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to wheeled shovels or
10 scrapers, which are employed in road making, grading, ditching, leveling, and other similar classes of work; and the objects of my invention are to produce an earth-scraper which shall be simple, durable, and comparatively
15 inexpensive in construction, rapid and effective in its operation, easily managed by the operator or attendant, and capable of quickly receiving and discharging its load and also of easily holding and transporting its load as
20 required.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement as hereinafter described and claimed.

25 In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved
30 earth-scraper, the shovel being in depressed position to receive its load. Fig. 2 is a plan view of the same. Fig. 3 is a vertical longitudinal section of the same on the line 3 3 of Fig. 2, the shovel being tilted and its end-gate
35 being opened for dumping or discharging the load. Fig. 4 is a transverse vertical section of the machine on the line 4 4 of Fig. 2. Fig. 5 is a detached perspective view of the end-gate of the shovel, showing its locking-bolt and certain of the operative connections thereof.
40 Fig. 6 is a detached perspective view of the lower portion of one end of the vertical part of the main supporting frame-work. Fig. 7 is a detached perspective view of the support or carrier-bearing for the shovel. Fig. 8 is a detached perspective view of one of the strengthening-ribs for the bottom of the shovel. Fig. 9 is a detached perspective view of one of the braces for the ends of the vertical
50 portion of the main carrying-frame. Fig. 10 is a view, partly in side elevation and partly in vertical longitudinal section, of the

adjacent or crossing portions of the horizontal and vertical frame-sections.

In said drawings, 1 designates the horizontal 55 portion of the main supporting-frame of the machine, said horizontal portion being of U form and its bend extending forwardly and transversely of the machine at the front thereof and its arms extending horizontally 60 rearward and parallel with each other and at opposite sides of the machine. The rear extremities of said arms also terminate at the rear of the machine.

2 designates a horizontal foot board or plat- 65 form which extends transversely of the machine at the rear of the same and the ends of which are bolted or otherwise suitably secured to the rear ends of the arms of the frame-piece 1.

3 designates the seat for the driver or attendant, said seat being formed upon or suitably secured to the upper end of a standard 4, the lower end or foot of which is secured to one end of the foot-board or platform 2 by a 75 single bolt 5, and the arrangement being such that the seat and its standard can be turned pivotally upon the bolt, as indicated in dotted lines in Fig. 2.

6 designates the tongue of the machine, to 80 which tongue the draft-animals are to be harnessed in suitable manner, the said tongue being secured to the middle of the bend of the horizontal frame-piece 1 by a vertical bolt 7 and also further secured by a horizontal cross-bolt 8, which extends transversely 85 through the arms of a U-shaped strap 9, which is bolted or otherwise suitably secured to the under side of the frame portion 1 at the middle of the bend of the same. The rear ex- 90 tremity of this tongue projects somewhat beyond the rear side of the middle of the bend of the frame portion 1 and is braced vertically by a brace-bar 10, the rear end of which is secured to the upper side of the rear end 95 of the tongue by a vertical bolt 11, and which extends thence upward and forward, the front end of the brace-bar being secured to the bend by the bolt 7, before described. The rear end of this tongue 6 is also braced later- 100 ally by two inclined brace-bars 12, the rear ends of which are secured to opposite sides of the tongue by a transverse horizontal bolt 13, and each of which extends forwardly and lat-

erally, the front ends of said brace-bars being secured to the rear side of the bend of the frame portion 1 by forwardly-extending bolts 14. A doubletree 15 is attached to the middle of the bend of frame portion 1 by the bolt 7 and carries at its ends the singletrees 16, said singletrees being secured to the ends of the doubletree by clips 17 of any suitable or preferred form. The doubletree is also shown as provided with the usual straps or similar flexible connections 18, the rear ends of which are attached to hooks 19 upon the bend of frame portion 1.

20 designates two vertical standards, the upper ends of which are connected by a horizontal cross-piece 21, and which are braced at their upper ends by four braces 22. These braces 22 are arranged in pairs at opposite sides of the machine, the upper ends of each pair of braces being bolted to the upper ends of the standards and their lower ends being bolted to the arms of the frame portion 1, one brace of each pair extending obliquely downward and forward, and the companion brace extending obliquely downward and rearward, as shown. The lower portion of each standard 20 is formed or provided with an outwardly-extending spindle 23, and the carrying-wheels 24 of the machine turn upon said spindles in customary manner. These spindles extend beneath the arms of the frame portion 1 and are connected each to one of said arms by a bolt 25, which passes vertically through the inner portion of the spindle and also similarly through the corresponding portion of the arm of frame portion 1.

In order to make a strong connection between the frame portion 1 and the spindles 23, a U-shaped brace 26 (see, also, Figs. 9 and 10) is placed beneath each of the spindles and the ends of the said braces are secured to the arms of the frame portion 1 by bolts 27, which pass vertically through the ends of the braces and similarly through the adjacent parts of the arms of frame portion 1. It will be seen that by virtue of this construction the standards are strongly braced against working strains and that the spindles are likewise effectively braced against such strains.

Each of the standards 20 extends below the arms of the frame portion 1 for a considerable distance and at its lower end carries an inwardly-extending stud or roller 28, which enters the corresponding one of two vertical slots 29, which are formed in two bearing-plates 30, each of said plates being secured to one side of the shovel 31. Each of these bearing-plates is formed with two ears 32 33, the ear 32 being at the forward end of the plate and the ear 33 being at the top of said plate, and through the ears 32 pass bolts 34, which secure the plate to the adjacent side of the shovel, preferably midway of the length of said side. The bearing-plates 30 are also secured to the sides of the shovel by similar bolts 34, which pass through the rear parts of the bearing-plates and into the sides of the

shovel. The shovel itself is preferably of oblong rectangular form, but open at its front, the front edges of its sides being preferably curved upwardly and rearwardly, as shown, while the rear of the shovel is closed normally by an end-gate 34, to be hereinafter fully described. This shovel is connected to the standards 20 by means of two sets of lazy-tong bars 36, the lower ends of the lower bars of each set being pivotally connected to the ears 33 of the corresponding bearing-plates 30 by one of the upper pivot bolts or pins 34, and the upper ends of the upper set of bars being pivotally connected to the inner side of the corresponding standard 20 by a horizontal pivot bolt or pin 37, extending transversely through said ends of the bars and also similarly through the standard; or, if preferred, these ends of the bars may be pivoted upon lugs extending inwardly from the inner sides of the standards 20. As shown, there are six bars in each lazy-tong set, the middle bars being pivoted together midway of their lengths by a transverse bar 38, while the outer ends of the said bars are pivotally connected by transverse pivots 39. It is to be understood, however, that I contemplate providing any number of these lazy-tong bars between the upper and lower pairs of bars, according as circumstances may direct. To the transverse bar or rod 38 are secured two arms 40, and to the upper ends of these arms are attached by transverse pivots 41 the front ends of two parallel arms 42, which constitute the U-shaped forward portion of a lifting-lever 43. This lifting-lever is pivotally connected by U-bearings 44 with the upper portion or bend of a rocking U-shaped supporting bar 45. This bar extends transversely of the machine and its extremities are bent outward, so as to be embraced by inverted-U bearings 46, which are mounted detachably upon the upper sides of the arms of the U-shaped frame 1 toward the rear extremities of said arms. The lever 43 extends rearwardly above the foot-board or platform 2, and its rear end carries a pawl 47, which is held normally in engagement with one or another of the teeth 51 of a vertical rack 52, rising from the platform 2, a spring 48, surrounding the stem of the pawl and interposed between guide-lugs 49 on the lever, serving by pressure upon a stop 53, carried by the pawl, to hold the pawl in such engagement, a grip-lever 50 being pivoted upon the lever and connected to the rear end of the pawl-stem, serving to withdraw said pawl from the teeth when desired. The rack 52 is preferably braced laterally by an oblique brace-bar 57, the upper end of which is bolted or otherwise suitably secured to the upper end of the rack and which extends thence obliquely downward, outward, and forward, the lower end of said brace-bar being bolted or otherwise suitably secured to the platform 2. It will thus be seen that when it is desired to raise the shovel 31 or to lower it the rear end of the lever 43 is either

depressed or lifted, respectively, thus contracting or extending the two sets of lazy-tong bars 36, so as to permit the stated movements of the shovel. When the shovel has been raised after having taken its load of earth, it is desirable to tilt the shovel downward and rearward, as shown in Figs. 3 and 4, and this is accomplished by means of a lever-arm 54, which extends upward from the inner end of a horizontal rock-shaft 55, extending horizontally of the platform and working in bearings 56, which are secured to the upper side of the said platform. The opposite or outer end of this rock-shaft 55 is provided with an upwardly-extending arm 57^a and to the upper end of which is connected the rear end of a link 58. The opposite or front end of this link surrounds a reduced portion 59, which is formed midway of the length of a cross-bar 60, extending above the shovel and united at its ends to the upper parts of the two bearing-plates 30, before described. Thus after the shovel has been raised by the lever 43, as above explained, the lever-arm 54 is drawn rearward, correspondingly rocking the shaft 55 and causing the corresponding backward movement of the rock-arm 57^a to draw the link 58 rearward, and thus tilt the shovel rearwardly and downwardly, as shown in Figs. 3 and 4. With the shovel in this tilted position the machine can be transported to the place where the earth is to be dumped or deposited, and the said position of the shovel effectually prevents any wasting of the earth from the shovel during such transportation. While the load of earth in the shovel is being transported thus the end-gate 35 is of course retained in closed position. This end-gate corresponds in length to the space between the sides of the shovel and in width to the height of said sides, and the gate is connected at its upper portion to the rear of the shovel by a pivot-rod 61, which extends through the rear ends of the sides of the shovel and also through forwardly-extending flanges 62 at the ends of the gate. The end-gate 35 is retained as long as desired in closed position by a locking-bolt 63, which works vertically in guides 64 upon the outer or rear side of the gate, a spiral spring 66, which surrounds the bolt between the guides 64 and which presses downward upon a stop 67, carried by the bolt, serving to hold the bolt in its downward or locked position. When in this normal position, the lower end of the bolt passes through an opening in the rear end of the shovel-bottom and also into a socket 68 in the upper side of the rear end of a rib 69, which is formed upon or detachably secured to the under side of the shovel-bottom. As shown, the bottom of the shovel is provided with three of these ribs, and the front ends 70 of said ribs preferably extend beyond the front edge of the shovel-bottom and are beveled off to form teeth, which assist the shovel in its cutting action. It is to be understood, however, that there

may be more or less of these ribs, as desired, the bolt 63, however, entering only one of said ribs, and that while the ribs are preferably detachable from the shovel-bottom and have the teeth 70, such teeth may be omitted and that the ribs may be formed integrally with the bottom, if preferred. The upper end of the bolt 63 is formed with a skeleton section 71, which slides vertically in a guide-box 72, which is bolted or otherwise secured to the outer side of the end-gate 35, and to the upper end of this skeleton section is connected the lower end of a link 73. The upper end of this link 73 is connected to the lower end of a second link 74, which is in turn connected at its upper end to the outer end of a rock-arm 75, which projects from one end of a horizontal rock-shaft 76. This rock-shaft extends longitudinally of the platform 2 in front of the rock-shaft 55, before described, and turns in bearings 77, secured upon said platform. The opposite end of the rock-shaft 76 carries a lever-arm 78, which extends upward from the rock-shaft, and it will be seen that by moving said lever 78 backward the bolt 63 will be lifted and that the weight of earth will then throw the end-gate 35 open and allow the earth to escape out of the rear end of the shovel. As soon as the shovel is returned to its horizontal position, as shown in Figs. 1 and 2, and which is accomplished by moving the lever 43 upward and the lever 54 forward, the end-gate 35 will close by gravity and the spring 66 will automatically force the bolt 63 into its socket 68, thus locking the end-gate in closed position.

The operation of the several parts of the machine having been described throughout the body of this specification in connection with the description of the construction and arrangement of said parts, no general operative description is believed to be necessary.

It will be seen that the machine is simple, durable, and inexpensive in construction, and rapid and effective in its operation, and also that its operations are easily effected and controlled by the operator or attendant.

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

1. An earth-scraper comprising a wheeled supporting and carrying frame, a vertically-movable and tilting shovel, and lazy-tong bars connecting the shovel with the supporting frame-work, substantially as set forth.

2. An earth-scraper comprising a wheeled supporting frame-work, a vertically-movable and tilting shovel, and two sets of lazy-tong bars connecting the shovel with the supporting frame-work, substantially as set forth.

3. An earth-scraper comprising a wheeled supporting or carrying frame, a vertically-movable shovel, two sets of lazy-tong bars connecting the shovel with the frame-work, and a lifting-lever connected to the shovel and supported upon the frame-work, substantially as set forth.

4. An earth-scraper comprising a wheeled carrying-frame, a vertically-movable shovel, two sets of lazy-tong bars connecting the shovel with the frame, a lifting-lever connected to the shovel, and a movable pivotal support for the lever mounted upon the frame, substantially as set forth.

5. An earth-scraper comprising a vertically-movable shovel, two sets of lazy-tong bars connecting the shovel to the frame, a lifting-lever connected to the shovel, a pivotal tilting support for the lever, mounted upon the frame, a rack also mounted upon the frame, and a spring-pressed grip-pawl carried by said lever and engaging the rack-teeth, substantially as set forth.

6. An earth-scraper comprising a tilting shovel having a pivoted end-gate, a spring-pressed locking-bolt carried by the end-gate and engaging a socket in the bottom of the shovel, a supporting-frame for the shovel, a rock-shaft mounted upon the frame and having a lever-arm, and a pair of links connecting a rock-arm of the shaft with the bolt, substantially as set forth.

7. An earth-scraper comprising a wheeled frame composed of a horizontal U-shaped portion, a pair of vertical standards located

at the sides of the U-shaped frame and carrying the spindles for the carrying-wheels, a pair of U-shaped braces extending each beneath one of the spindles and bolted to the arms of the U-shaped frame, and a pair of vertical bolts passing each through one of the spindles, the middle of the brace, and through the adjacent portion of the frame-arm, substantially as set forth.

8. An earth-scraper comprising a shovel having bearing-plates secured to its sides and connected by a cross-bar and provided also each with a vertical slot, substantially as set forth.

9. An earth-scraper comprising a U-shaped frame portion, a tongue connected to the bend of said frame portion, and a number of braces extending forwardly and upwardly and forwardly and laterally and connecting the inner end of the tongue to the bend, substantially as set forth.

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

THOMAS O. O. SITLINGTON.

Witnesses:

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JNO. L. CONDRON.