J. M. CONLEY.

SCRAPER.

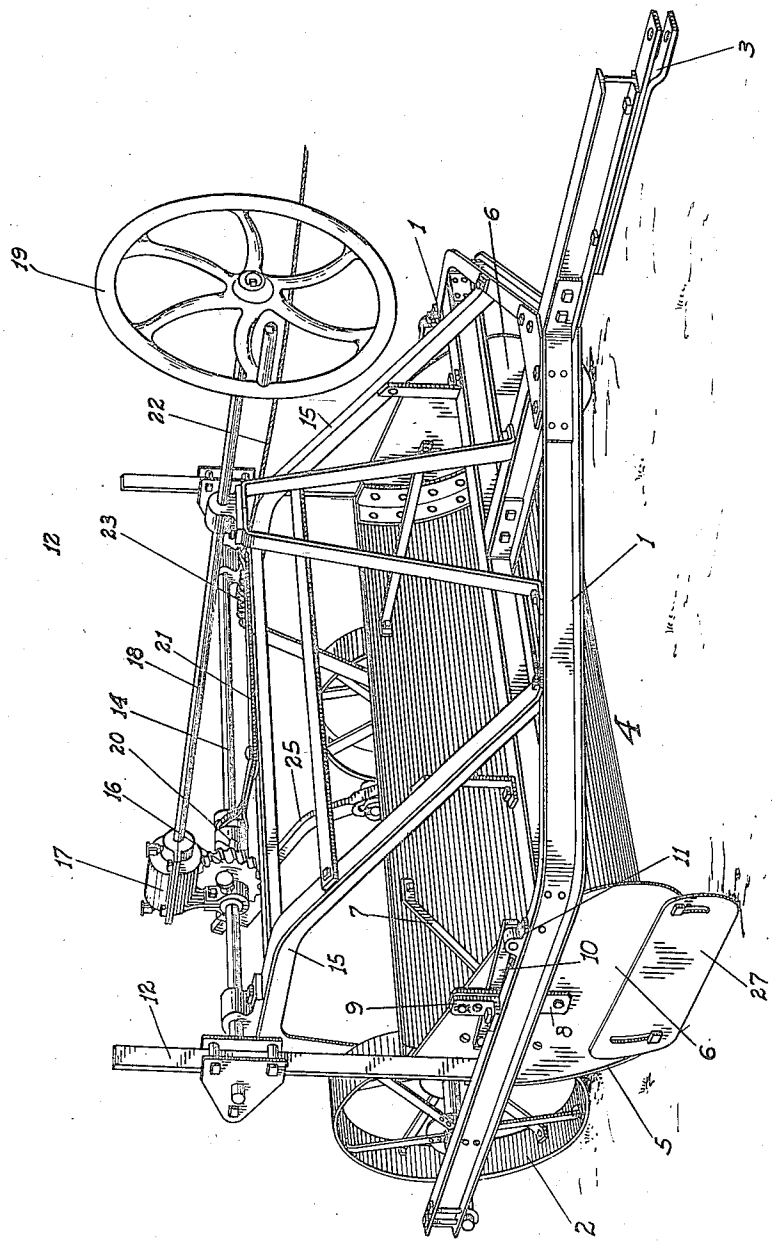
APPLICATION FILED JAN. 10, 1921.

1,438,362.

Patented Dec. 12, 1922.

2 SHEETS—SHEET 1.

Fig. 1.



INVENTOR

J. M. Conley

BY Campbell & Webster ATTORNEY

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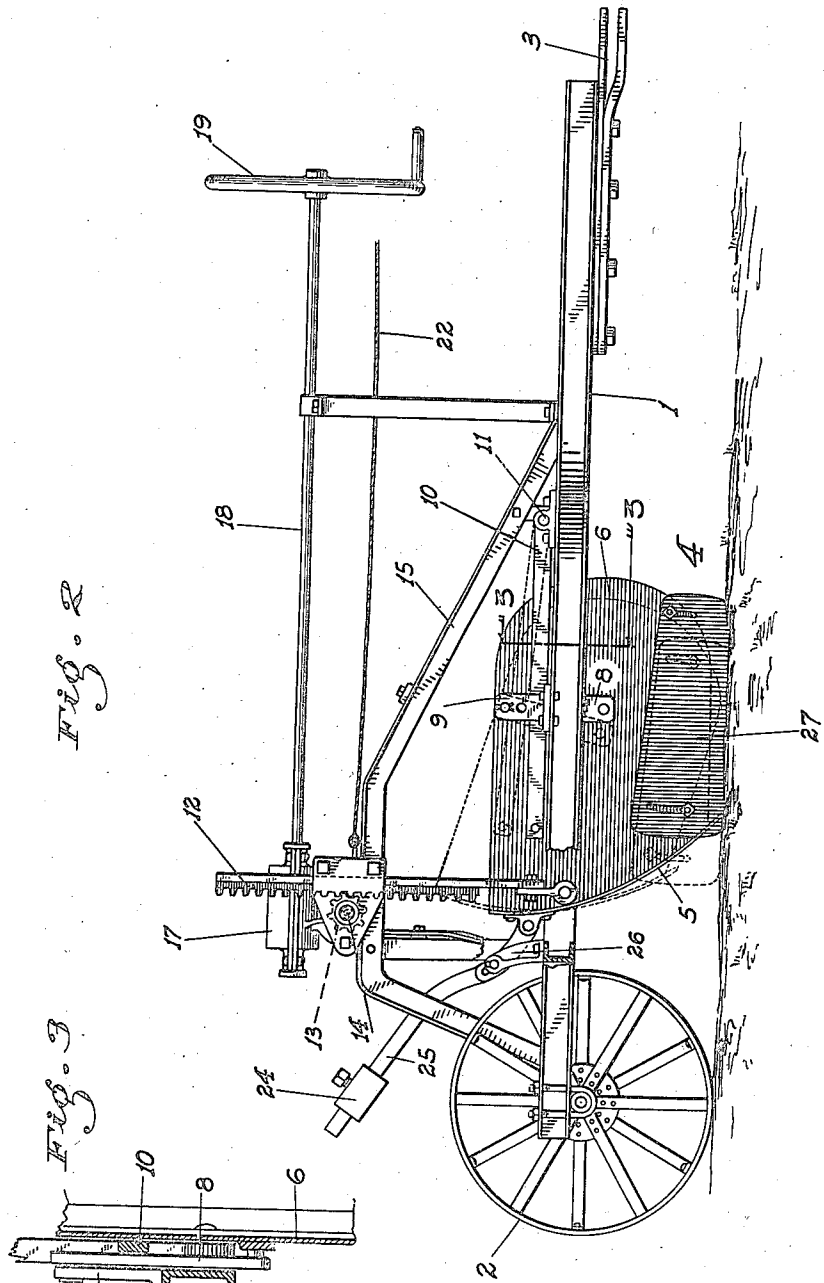


Fig. 2

Fig. 3

INVENTOR

J. M. Conley

BY Percy J. Webster ATTORNEY

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UNITED STATES PATENT OFFICE.

JOHN M. CONLEY, OF STOCKTON, CALIFORNIA, ASSIGNOR TO D. R. THROOP, OF STOCKTON, CALIFORNIA.

SCRAPER.

Application filed January 10, 1921. Serial No. 436,074.

To all whom it may concern:

Be it known that I, JOHN M. CONLEY, a citizen of the United States, residing at Stockton, county of San Joaquin, State of California, have invented certain new and useful Improvements in Scrapers; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in scrapers, and particularly to a type adapted to be drawn by a tractor, the principal object of the invention being to construct a scraper in which the loading, spreading or dumping operations may be easily controlled by the driver of the tractor.

Another object is to provide means for allowing the scraper to dump automatically, or to position and hold the same to scrape or spread at varying levels.

I have also hung the scraper bowl in such a manner that comparatively slight pressure on the controls is needed to tilt the bowl considerably, for dumping, spreading or scraping purposes.

A further and important object is to so hang or position the scraper bowl that at the will of the operator it may be adjusted to itself carry and sustain the larger part of its load instead of merely dragging it along the ground. This not only allows a light draft machine in the operation of which the strain of pulling the same at such times is reduced, but the dirt can be moved for a considerable distance without loss. To aid in effecting the last named result, I have provided automatically adjustable wings on the sides of the scraper bowl, which always maintain contact with the ground and prevent side-spilling of the load.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Fig. 1 is a perspective view of the scraper.

Fig. 2 is a side elevation of the same partly broken away to show certain features of construction.

Fig. 3 is a fragmentary cross section taken on a line 3—3 of Fig. 2.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes the main frame beams, of suitable design, which are supported at their rear end by wheels 2, and converge at their forward ends, where they are provided with a drawbar 3 for rigid connection to a tractor, so that the latter will support the frame at that end.

Mounted between the beams 1 ahead of the wheels is the scraping bowl 4 comprising a back scraping plate 5 normally having a considerable forward slant from top to bottom, and side plates 6, suitably braced as at 7. This scraper bowl is connected to the frame at two points on each side. First: by means of normally vertical links 8 pivoted at their lower end to the side plates 6 at a point somewhat forward of the center of length of the said plates, and similarly connected to brackets 9 projecting upwardly from the frame beams 1, either of said pivotal connections being adjustable at will to alter the effective length of the links and to alter the level of setting of the plates 6. Second: by means of substantially horizontal bars 10 extending between the plates 6 and links 8, these bars being pivoted to the plates 6 at a point intermediate the links and the rear plate 5 of the scraper, and to the frames 1 a certain distance ahead of the scraper, as at 11. In this manner, the scraper is both supported from the ground adjacent its forward end, and the strain of scraping taken off the links and transmitted to the heavy frame. Besides this, the scraping member has a natural tendency to tilt upwardly at its rear end, which makes for easy spreading.

To hold the scraping member against undesired movement, and to control such movement when desired, I provide vertical rack-bars 12 flexibly connected to the scraper plates 6 and meshing with pinions 13 mounted on a common shaft 14 extending transversely of the scraper above the same and supported by an auxiliary framework 15.

Turnable on the shaft 14 is a worm wheel 16 arranged to be rotated by a worm preferably enclosed in a supporting casing 17, which in turn is rotated by means of a horizontal shaft 18 extending to the forward end

of the frame 1, on which end is a hand wheel 19.

The worm wheel 16 is normally operatively connected with the shaft 14 to turn the same by means of a common form of clutch 20, which may be released at will by means of a lever 21 having a pull-cable 22 extending forwardly therefrom and adapted to be pulled from the tractor ahead. A spring 23 connected to the lever pulls on the same to normally hold the clutch engaged.

Of course the scraper could be raised and lowered entirely by manipulating the hand wheel, but this would increase the time necessary to accomplish this to a considerable degree, and is not necessary when the clutch, and another feature about to be described, are used. This feature is a weight 24 adjustably fixed onto an arm or lever 25 connected to the plate 5 behind the same and fulcrumed to a bracket 26 on the frame 1 at a point suitably positioned in the length of said arm. When the clutch is released, the scraper will of itself climb out of the ground sufficiently to allow the dirt to spread with a forward movement of the machine, but with the addition of the weight, this movement is accelerated and the scraper may be raised to dump much higher than would be automatically possible without the same. Of course if desired when working under certain conditions, this weight may be omitted.

By reason of the peculiar pivotal mounting of the scraper, the rear end is the only portion which raises to any extent, thus keeping the side plates adjacent the ground, while the forward slant of the back plate 5 enables the major part of a load of dirt to be supported by the said plate instead of by the ground, making it easier to transport the load.

To aid in preventing dirt from escaping at the sides when spreading or transporting the same, I have provided plates or wings 27 flexibly connected to the outside of the bowl-plates 6 for vertical movement relative thereto and arranged to contact with the ground by reason of their own weight with any position of the bowl.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A scraper including a frame supported from the ground, a scraping bowl positioned therein having side plates, vertical links pivoted to the plates and to the frame thereabove, and horizontal bars pivoted to the plates to the rear of the links connected therewith and to the frame ahead of said plates.

2. A scraper including a frame supported from the ground, a scraping bowl positioned therein, vertical links pivoted to the sides of the bowl and to the frame thereabove, horizontal bars pivoted to the bowl to the rear of the link connected therewith and to the frame ahead of said plates, and means connected to the rear end of the bowl and independent of said links and bars for tilting the same about its pivotal connections.

3. A scraper including a frame supported from the ground, a scraping bowl positioned therein and arranged for vertical movement, side plates on the bowl, and wings on the outside of the side plates flexibly connected thereto for relative vertical movement and adapted to contact with the ground irrespective of the positioning of the bowl relative thereto.

4. A scraper comprising a frame, a scraper bowl, means flexibly connected to the back of the bowl for moving the same vertically, horizontal bars pivoted to the bowl and to the frame ahead of the bowl, and vertical bars pivoted to the frame and to the bowl and positioned intermediate the ends of the horizontal bars, the pivotal length of said vertical bars being adjustable.

In testimony whereof I affix my signature.

JOHN M. CONLEY.