D. R. THROOP.

LAND SCRAPER.

APPLICATION FILED NOV. 4, 1916.

1,220,379.

Patented Mar. 27, 1917.

2 SHEETS—SHEET 1.

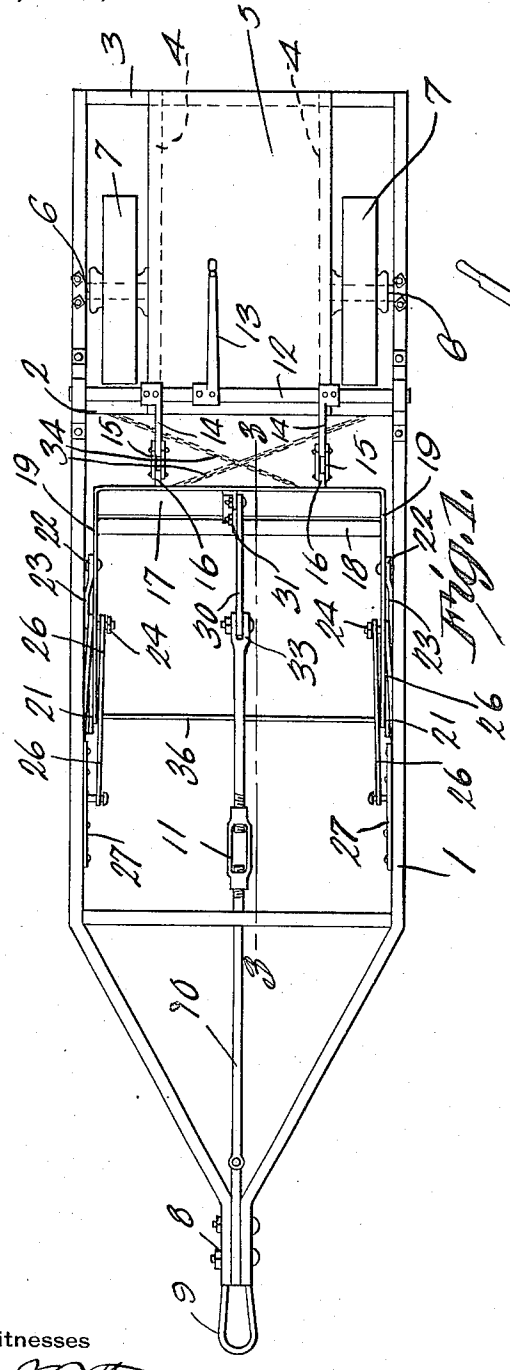


Fig. 1.

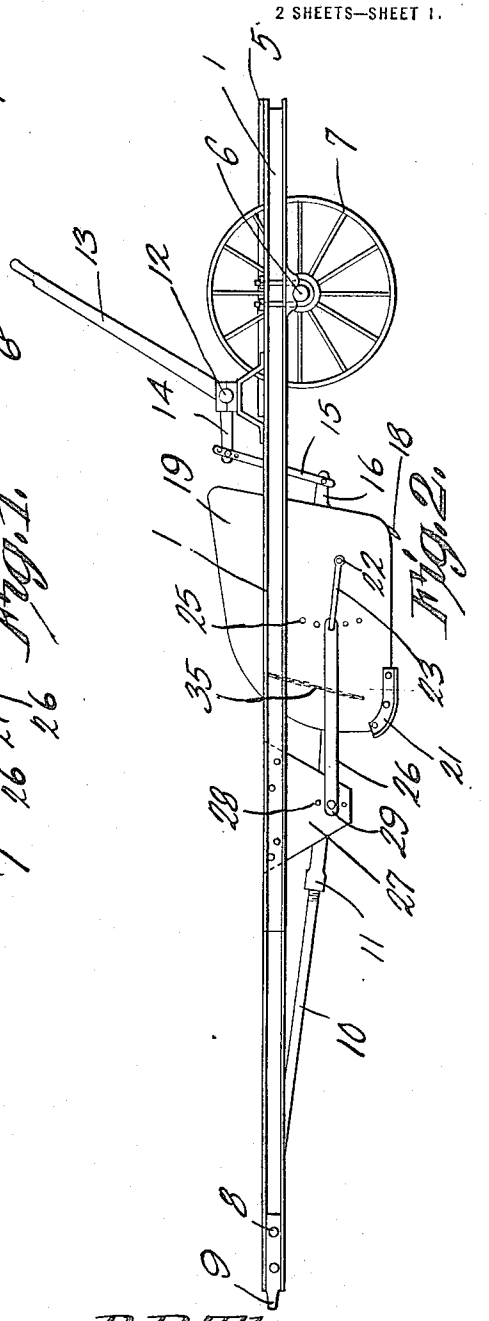


Fig. 2.

Witnesses

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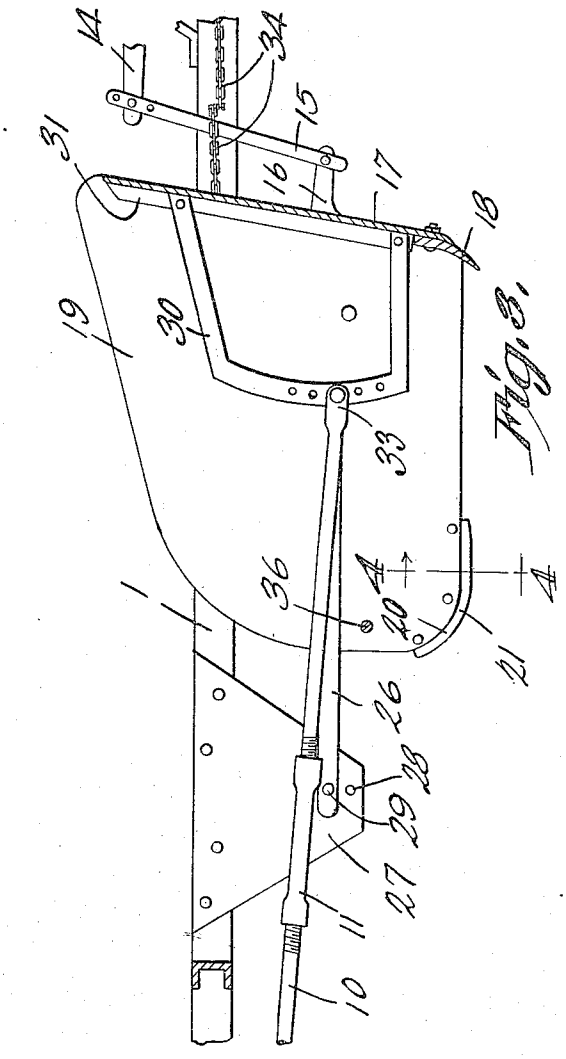


Fig. 3.

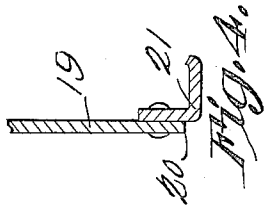


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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LAND-SCRAPER.

1,220,379. Specification of Letters Patent. Patented Mar. 27, 1917.

Application filed November 4, 1916. Serial No. 129,518.

To all whom it may concern:

Be it known that I, DAMON R. THROOP, a citizen of the United States, residing at Davis, in the county of Yolo and State of California, have invented a new and useful Land-Scraper, of which the following is a specification.

This invention relates to land scrapers, one of its objects being to provide a scraper which can be readily adjusted relative to its draft means so as to vary the resistance offered to the retarding action of the accumulated material in front of the scraper.

A further object is to provide a scraper having an open bottom and utilizing means whereby the sides of the scraper are prevented from digging into the ground while in operation.

Another object is to provide means for limiting the downward movement of the scraper relative to its supporting structure, thus to prevent the scraper from falling into holes or other depressions in the path thereof.

A further object is to provide simple and efficient means for lifting the scraper to clear the load.

Another object is to provide means whereby lateral shifting of the scraper relative to its carrying frame is avoided.

A still further object is to provide means for preventing the scraper from buckling at the center under the resistance offered by a heavy accumulation of dirt or the like.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—

Figure 1 is a plan view of a scraper embodying the present improvements.

Fig. 2 is a side elevation thereof.

Fig. 3 is an enlarged central vertical section through the scraper *per se* and adjacent parts.

Fig. 4 is a section on line 4—4 Fig. 3.

Referring to the figures by characters of reference 1 designates a frame made of suitable angle metal, there being an intermediate cross beam 2 parellel with the back end 3 of the frame and said back end and cross beam being connected by parallel beams 4 which serve to support a platform 5. Interposed between the sides of the frame and the beams 4 are short axles 6 on which are journaled supporting wheels 7. The front end of the frame 1 converges to a tongue 8 to which is connected a clevis 9 and secured to and extending downwardly and rearwardly from the tongue is a draw rod 10 made up of sections connected by a turn buckle 11.

Journaled within suitable bearings on the sides of the frame 1 is a transverse shaft 12 adapted to be actuated by a lever 13. Secured to this shaft and extending forwardly therefrom are arms 14 to each of which is adjustably connected a depending link 15. The links are pivotally attached to ears 16 extending rearwardly from the back plate 17 of the scraper. Secured to the lower edge of this back plate is a blade 18 preferably curved downwardly and forwardly and suitably sharpened so as to properly scrape the surface over which it is drawn. Attached to the side edges of the back plate 17 are side plates or fenders 19 which are preferably parallel and the lower front corners of which are preferably rounded as shown at 20. To these rounded corners are attached shoes 21 preferably made up of angle strips which provide broad bearings or runners adapted to travel over the ground and prevent the fenders from digging into the soil. Pivotally connected to each of the fenders as at 22 is a coupling link or goose neck 23 having an inturned end 24 adapted to be inserted into any one of a series of apertures 25 which series is concentric with the pivots 22. Mounted on the inturned end of each of these links or goose necks is a draw bar 26 the front end of which is pivot-

ally attached to a hanger 27 secured to one side of the frame 1. This hanger has a vertical series of apertures 28 any one of which is adapted to receive the pivot bolt 19 used for attaching the draw bar 26.

Where the scraper is of considerable width, a bracket 30 is extended forwardly from the center of the back plate 17, there being an angle strip 31 attached to said back plate and to the bracket as shown in Fig. 3. The forward end of this bracket has a series of apertures 32 in alinement with the corresponding apertures 25 and the draw rod 10 hereinbefore referred to is adapted to be pivotally connected to this bracket by a bolt 33 extending through any one of the apertures 32. In practice it is designed to have the bolt 33 in line with the inturned ends of the links or goose necks 23.

Crossed chains 34 are attached to the side portions of the back plate 17 and to the end portions of the cross beam 2, these crossed chains offering no resistance to the up and down movement of the scraper but, at the same time, preventing the scraper from shifting laterally so as to come into contact with the sides of the frame 1.

Chains 35 are attached to the sides of the frame 1 and also to the front portions of the fenders 19 and serve to limit the downward swinging movement of the scraper so that, should the scraper pass over a hole or depression, there will be no danger of the same moving downwardly thereinto.

In using the device herein described the scraper is lowered into contact with the ground by swinging lever 13 forwardly. The shoes 21 will slide over the ground in the same way as runners and the blade 18 will scrape the dirt so that it will accumulate in a pile in front of the back plate 17. When the space between the fenders or side plates 19 has been practically filled by the accumulated dirt, the scraper can be raised by pulling back on lever 13, whereupon the accumulated dirt will be left in a pile while the blade 18 will pass thereover.

By adjusting the draw bars 26 and the rod 10 so that their pivotal connections with the fenders 19 and bracket 30 will be at the uppermost point, the efficiency of the device as a scraper will be reduced but, by adjusting the pivotal points downwardly the blade 18 will be caused to dig more positively into the soil and thus increase the efficiency of the device as a scraper. By providing the central draw bar or rod 10, it is possible to make the scraper of considerable width without danger of buckling at the center. This bar or rod 10 will not be used, however, in connection with small scrapers.

It is to be understood that instead of providing a hand lever 13 for lifting the scraper, any suitable power means can be employed. Under some conditions a spreader bar 36 can be secured to the front ends of the fenders 19 above the lower edges thereof so as to stiffen them. This, however, is not always essential.

What is claimed is:—

1. The combination with a portable frame, of a back plate adjustably supported within and extending below the frame, a ground scraping element carried thereby, fenders extending forwardly from and fixed relative to the back plate, an angularly adjustable link connected to each fender, a draw bar pivotally mounted upon each link and adjustably connected at its forward end to the portable frame, and flexible adjustable connections between the front portions of the fenders and the portable frame for limiting the downward tilting movement of the fenders.

2. The combination with a portable frame, of a back plate adjustably supported within and extending below the frame, a ground scraping element carried thereby, fenders extending forwardly from and fixed relative to the back plate, an angularly adjustable link connected to each fender, a draw bar pivotally mounted upon each link and adjustably connected at its forward end to the portable frame, flexible adjustable connections between the front portions of the fenders and the portable frame for limiting the downward tilting movement of the fenders, and crossed flexible connections between the back plate and the sides of the portable structure for holding the fenders out of contact with the sides of said frame.

3. The combination with a portable frame, of a back plate adjustably supported within and extending below the frame, a ground scraping element carried thereby, fenders extending forwardly from and fixed relative to the back plate, an angularly adjustable link connected to each fender, a draw bar pivotally mounted upon each link and adjustably connected at its forward end to the portable frame, flexible adjustable connections between the front portions of the fenders and the portable frame for limiting the downward tilting movement of the fenders, and an adjustable jointed connection between the front portion of the portable structure and an intermediate portion of the back plate.

4. The combination with a portable frame, a back plate, a scraping element at the lower edge of the plate, and means for raising and lowering the plate relative to the frame, of forwardly extending fenders at the sides of the plate, a forwardly extending bracket between the ends of the plate, adjustably mounted pivot devices connected to the

fenders, a draw rod attached to the frame and adjustably connected to the bracket, and draw bars connecting the frame to the pivotal elements on the fenders, said points of connection between the bracket and its draw rod and the fenders and their draw bars being in alinement.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

DAMON R. THROOP.

Witnesses:
J. C. CURLY,
E. P. HUSTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."