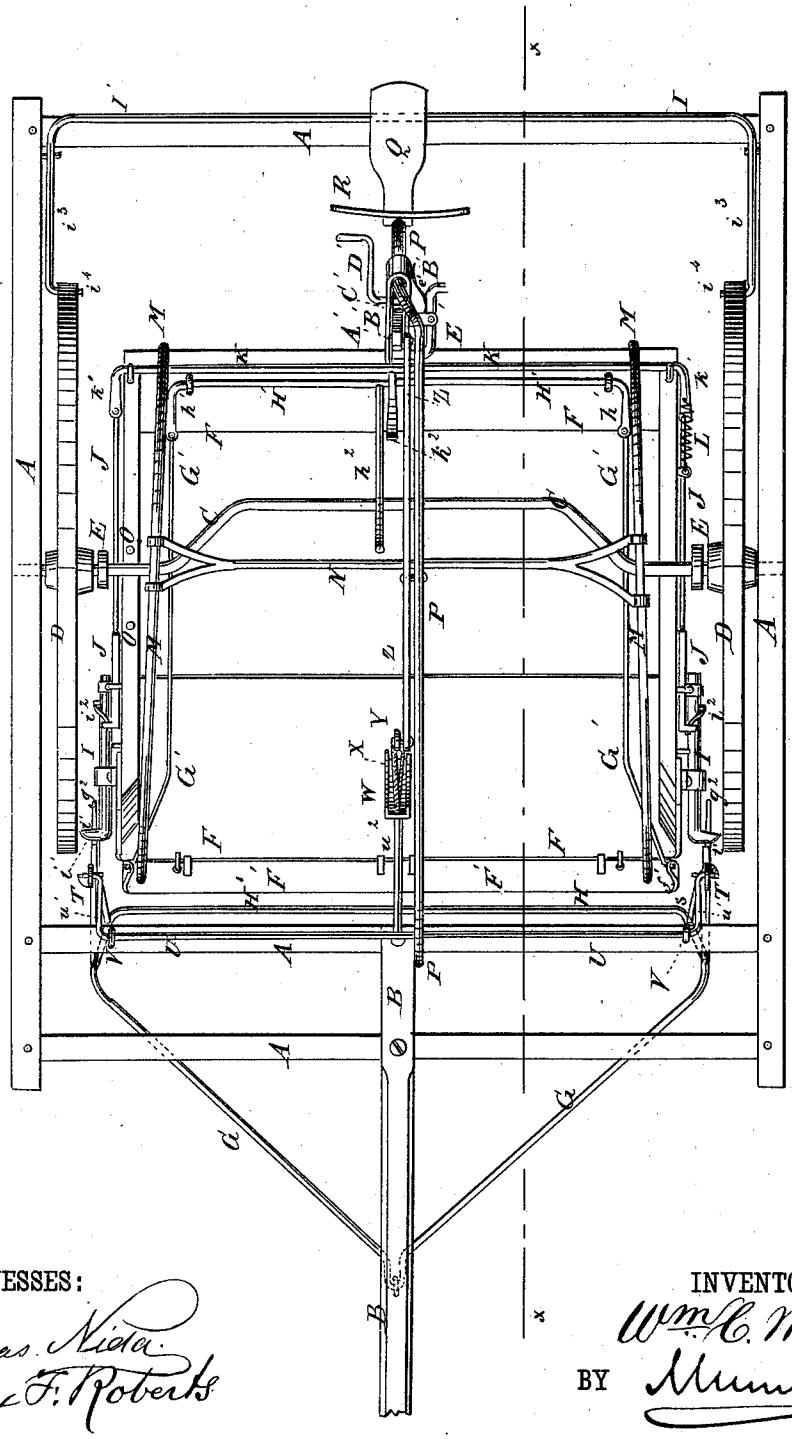
2 Sheets—Sheet 1.

W. C. MARR.

Sulky-Scraper.

No. 216,201. Patented June 3, 1879.

Fig. 1.



WITNESSES:

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2 Sheets—Sheet 2.

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Fig: 2.

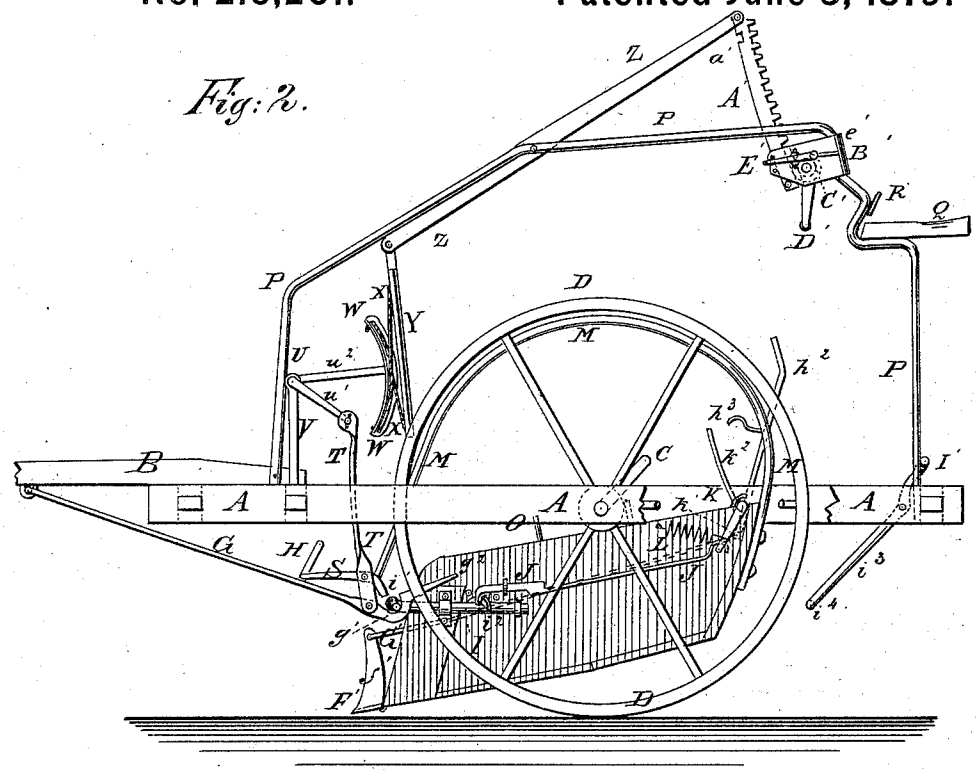
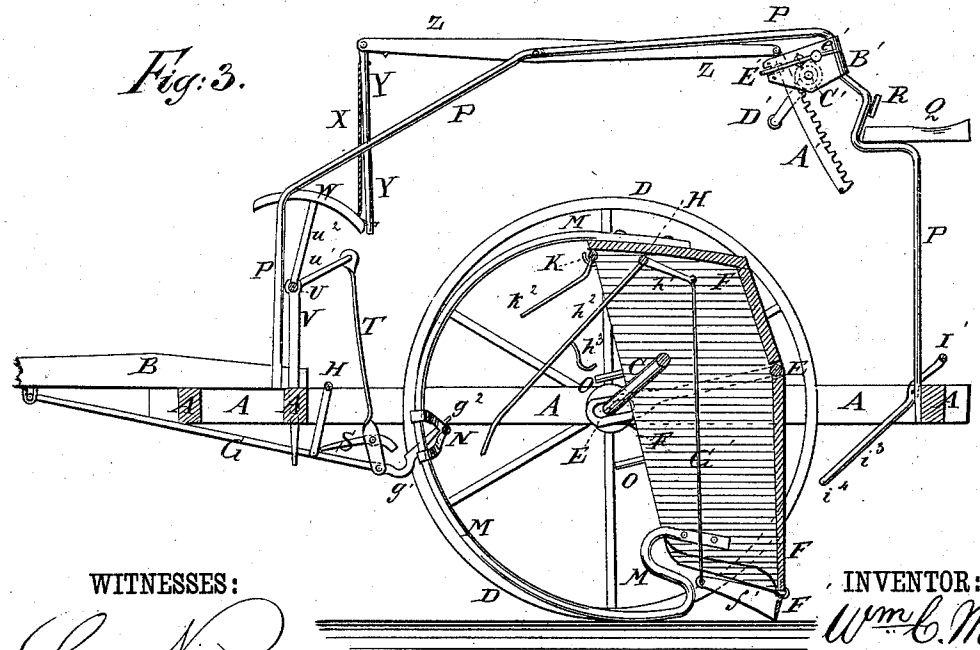


Fig: 3.



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UNITED STATES PATENT OFFICE.

WILLIAM C. MARR, OF ONAWA, IOWA.

IMPROVEMENT IN SULKY-SCRAPERS.

Specification forming part of Letters Patent No. **216,201**, dated June 3, 1879; application filed September 19, 1878.

To all whom it may concern:

Be it known that I, WILLIAM C. MARR, of Onawa, in the county of Monona and State of Iowa, have invented a new and useful Improvement in Sulky-Scrapers, of which the following is a specification.

Figure 1, Sheet 1, is a top view of my improved scraper. Fig. 2, Sheet 2, is a side view of the same, part being broken away to show the construction. Fig. 3, Sheet 2, is a vertical longitudinal section of the same, taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved sulky-scraper which shall be so constructed that it may be readily adjusted into the various positions required for collecting, carrying, and dumping the load by the driver from his seat.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

A is the frame, consisting of two side bars connected at their rear ends by a cross-bar, and at their forward ends by two cross-bars, to the centers of which latter the tongue B is attached. To the middle part of the side bars of the frame A is attached the axle C, upon the journals of which, at the outer or inner sides of the said side bars, revolve the wheels D. Upon the axle C, at the inner sides of the wheels D and the side bars of the frame A, are placed the eyes or slotted ends of the U-rod or bail E, the middle or horizontal part of which passes through a groove or slot in the bottom of the scraper F, so as to be flush with the outer surface of the said bottom, or nearly so. The U-rod E is secured in place by bearings attached to the bottom or to the lower edges of the sides of the scraper F, so as to hang the said scraper from the axle C. To the lower side of the tongue B is hinged the center or angle of the V-shaped draw-rod or bail G. The end parts of the draw-rod G are parallel with each other, and are connected and kept at the same distance apart by a rod, H, the ends of which are attached to the draw-rods G, and it is bent up at its middle to avoid the dirt when the scraper is being loaded. Upon the end parts of the draw-rod G are formed cavities g^1, and its ends also incline upward to serve as guides to guide the hooks i^1 of the rods I into the said cavities g^1.

The rods I are swiveled in bearings attached to the sides of the scraper F, and upon them are formed spiral flanges i^2, to receive the downwardly-bent forked or slotted ends of the rods J, so that the rearward movement of the said rods J may turn the rods I and incline their hooks i^1 upward to cause them to slip out of the cavities g^1 of the draw-rod G, and thus disconnect the scraper from the said draw-rod. The rods J slide in bearings attached to the sides of the scraper F, and to their rear ends are hinged the lower ends of the downwardly-projecting arms k^1, formed upon or rigidly attached to the ends of the rod K. To the middle part of the rod K is rigidly attached an arm or lever, k^2, which projects into such a position that it may be conveniently reached and operated by the driver by his foot to disengage the rods I from the draw-rod G. The rods I J K are brought back into their former position when released from the pressure of the driver's foot by a spiral or other spring, L, attached to the side of the scraper F, and connected with one of the arms k^1 of the rod K.

With this construction, when the rods I G are disengaged and the forward draft continues, the edge of the scraper F catches upon the ground and causes the rear part of the said scraper F to rise and pass over the axle C, when its weight continues the revolution and brings it again into working position. The scraper F is made to move regularly while passing over the axle C by the semicircular rods or shoes M, the ends of which are attached to the front and rear ends of the sides of the said scraper, and which are made of such a length as to roll upon the ground while the said scraper is making its revolution.

The middle parts of the semicircular rods M are connected and held in their proper relative positions by a cross-rod, N, attached to them.

The backward and forward movement of the scraper F is limited by the pins O, attached to the upper edge of its side, upon the opposite sides of the axle C, so that they may strike against the said axle. P is a rod, the

rear end of which is attached to the middle part of the rear cross-bar of the frame A, and its forward end is attached to the rear forward cross-bar of the said frame A, or to the rear end of the tongue B. The end parts of the rod P are vertical, and in the said rod, at the upper end of its rear vertical part, is formed a shoulder, to which the driver's seat Q is secured.

To a bend in the rod P, in front of and a little above the seat Q, is attached a plate, R, for the driver to lean against while operating the mechanism of the scraper. S are two dogs, which are pivoted in the slotted lower ends of the bars T in such positions that their forward ends may rest upon the upper sides of the end parts of the draw-bar G, to which said bars are attached, and their rear ends may project into the mouths of the cavities g^1 of the said draw-rod G above the hooks i^1 of the rods I. With this construction the dogs S prevent the hooks i^1 from rising out of the cavities g^1, while allowing them to pass in freely. The lower ends of the bars T are attached to the end parts of the draw-rod G a little in front of the cavities g^1, and their upper ends are pivoted to the ends of the rearwardly and downwardly projecting arms u^1, formed upon or rigidly attached to the ends of the rod U. The rod U works in bearings in the upper ends of two standards, V, attached to the rear forward cross-bar of the frame A. With this construction, the rear ends of the draw-bar G will be supported in proper position to receive the hooks of the rods I as the scraper F comes into working position after passing over the axle C.

To the middle part of the rock-rod U is rigidly attached an upwardly and rearwardly projecting arm or lever, u^2, to the outer end of which is rigidly attached the center of a bar, W. The bar W is curved in the arc of a circle, is grooved upon its convex side, and to its ends are attached the ends of two cords or chains, X, which cross each other, and their other ends are attached to the ends of the straight bar Y. The bar Y is hinged at its upper end to the forward end of the lever Z, which lever is pivoted at its middle part to the middle part of the bent rod P. To the rear end of the lever Z is hinged the upper end of the rack-bar A′, which passes down between the arms of a U-plate, B′, attached at its bend to the rod P. The teeth of the rack-bar A′ mesh into the teeth of a small gear-wheel, C′, pivoted to and between the arms of the U-bar B′, and to one of the journals of which is attached a small crank, D′. To the arm of the U-plate B′ is pivoted a lever-pawl, E′, the engaging end of which rests in a notch in the end edges of the arms of the said U-plate B′, so as, when the rack-bar A′ has been drawn down by operating the crank D′ and the gear-wheel C′, to enter a notch, a', in the smooth edge of said rack-bar A′, and lock it in position.

The pawl E′ is held forward in position to enter the notch a' by a spring, e', interposed between its rear end and the side of the U-plate B′. With this construction, by operating the crank D′ the edge of the scraper F may be lowered more or less to regulate the loading, and raised into or above a horizontal position, to prevent the load from sliding off while being carried to the place of unloading.

To the forward edge of the bottom of the scraper F is hinged the rear edge of a movable knife or cutter, F′, upon the ends of which are formed, or to them are attached, upwardly-projecting arms f'. To the upper ends of the arms f' are pivoted the forward ends of the rods G′, which pass back along the inner surfaces of the sides of the scraper F, and their rear ends are pivoted to the ends of the arms h', formed upon or rigidly attached to the ends of the rod H′. The rod H′ works in bearings attached to the inner surface of the back of the scraper F, and to its middle part is rigidly attached an arm or lever, h^2, which projects into such a position that it may be readily reached and operated by the driver from his seat.

With this construction, the driver, by operating the arm h^2, can adjust the knife or cutter F′ into proper position for entering the dirt, and can raise its forward edge to keep the dirt from falling off while being carried to the place of unloading.

The arm or lever h^2 is provided with a hook, h^3, which, when the edge of the knife or cutter F′ has been raised, may be hooked upon the axle C, to fasten the said knife or cutter F′ in place, while the loaded scraper is being carried to the place of unloading.

I′ is a rod upon the ends of which are formed, or to them are attached, arms i^3, projecting downward and forward, and having brake-shoes i^4 formed upon or attached to their lower ends. The arms i^3 are pivoted, near their upper ends, to the rear parts of the side bars of the frame A, in such positions that the rod I′ may be above and parallel with the rear cross-bar of the said frame A, and in such a position that it may be reached and operated by the driver with his feet, to apply the brakes to the wheels D, and thus retard the scraper in going down declivities.

The hinged cutter F′ and its attachments may be omitted, if desired.

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

1. The combination of the frame A and the supporting U-rod or bail E with the axle C, the wheels D, and the scraper F, substantially as herein shown and described.

2. The combination of the V-shaped draw-rod or bail G, having its arms connected near their ends by a cross-rod, H, and having cavities g^1 and guides g^2 formed upon its ends, with the tongue B and the hook-rods I i^1, attached to the sides of the scraper F, substantially as herein shown and described.

3. The combination, with bail G, of the bars

T, rock-rod U, having arms u^1, standards V, and arc-shaped bar W, having arm u^2, the latter connected with mechanism, substantially as described, whereby said bail is adjusted and supported, as set forth.

4. The combination of the rods J, having their forward ends bent downward and forked, the rod K, provided with arms k^1 at its ends, and an arm or lever, k^2, at its middle part, and the spring L, with the spiral flanges i^2 formed upon the hook-rods I i^1, that engage with the V-shaped draw-rod or bail G, and with the scraper F, substantially as herein shown and described.

5. The combination of the bars T, the rod U, provided with the end arms, u^1, and the central arm, u^2, the standards V, the arc-bar W, the cords or chains X, the hinged bar Y, the pivoted lever Z, the hinged rack-bar A′, and the gear-wheel and crank C′ D′, with the rod P, attached to the rear and front cross-bars of the frame A, and with the draw-rod or bail G, the hook-rods I i^1, and the scraper F, substantially as herein shown and described.

6. The combination of the arms f', the rods G′ and the rod H′, provided with the end arms, h^1, and the central arm and hook, h^2 h^3, with the hinged knife or cutter F′ and the scraper F, substantially as herein shown and described.

7. The combination of the dogs S with the bars T, the draw-rod or bail G, and the hook-rods I i^1, substantially as herein shown and described.

8. The combination of the driver's seat Q and the rest R, with the bent rod P, attached at its ends to the rear and front parts of the frame A of a sulky-scraper, substantially as herein shown and described.

WILLIAM CULVER MARR.

Witnesses:
MITCHELL VINCENT,
JAS. BUTTS.