(No Model.) 2 Sheets—Sheet 1.

W. HEWITT.

SULKY HARROW.

No. 402,670. Patented May 7, 1889.

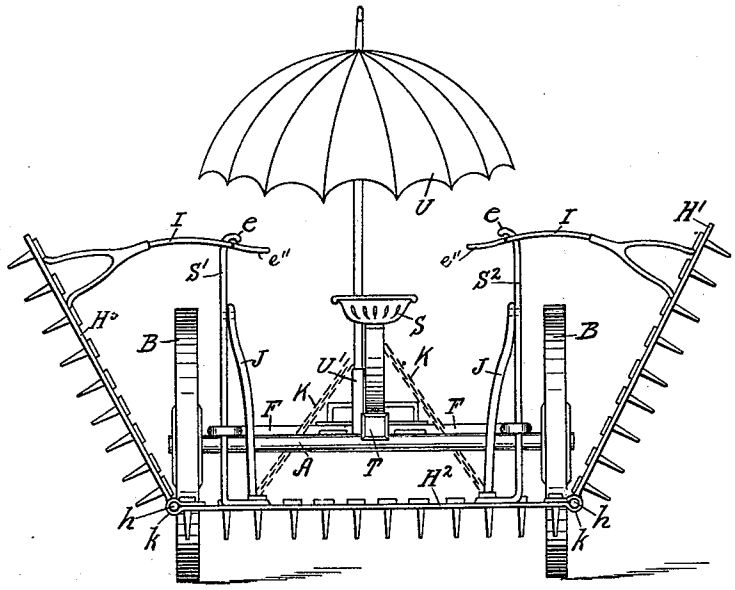


Fig. 1.

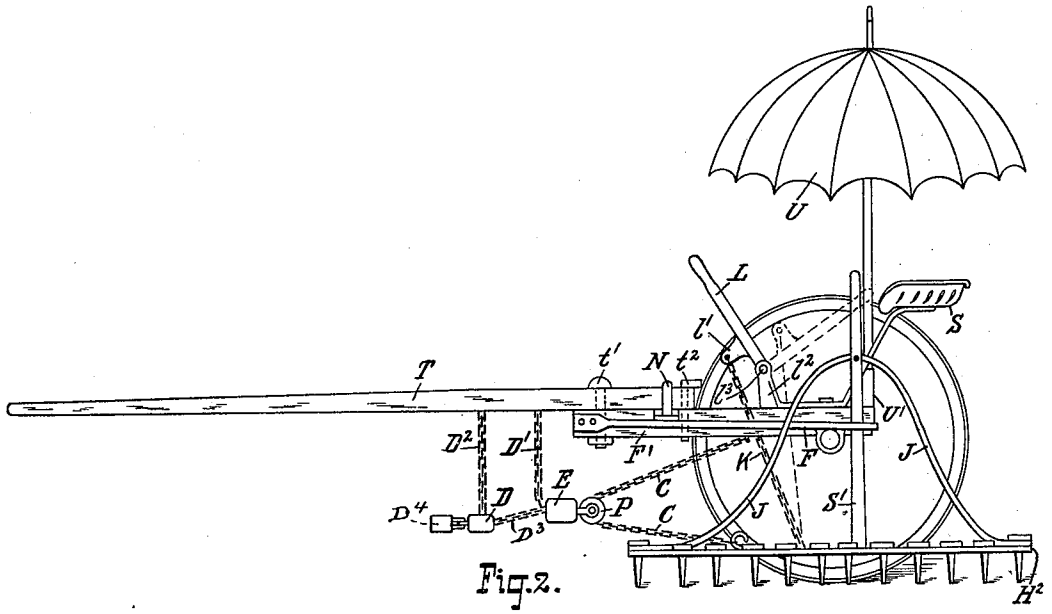


Fig. 2.

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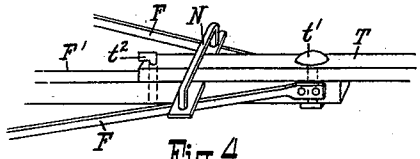


Fig. 4.

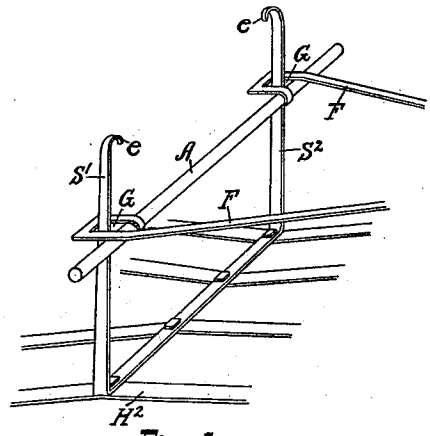


Fig. 5.

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM HEWITT, OF LONDON, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO FRANK B. POLLARD, OF SAME PLACE.

SULKY-HARROW.

SPECIFICATION forming part of Letters Patent No. 402,670, dated May 7, 1889.

Application filed September 6, 1888. Serial No. 284,708. (No model.) Patented in Canada June 8, 1888, No. 29,305.

To all whom it may concern:

Be it known that I, WILLIAM HEWITT, a subject of the Queen of Great Britain, and a resident of the city of London, in the Province of Ontario, Canada, have invented certain new and useful Improvements on Sulky-Harrows, of which the following specification, taken in connection with the accompanying drawings, forms a full, clear, and exact description of this invention.

This invention relates to a harrow having a wheeled carriage and seat for the driver; and it consists of the improved construction and combination of parts of the same, as will be hereinafter more fully described and claimed.

Reference being had to the accompanying drawings already mentioned, Figure 1 is a rear end elevation of a sulky-harrow embodying my invention, and showing the harrow-sections raised. Fig. 2 is a sectional view on the line *x x* of Fig. 3. Fig. 3 is a plan view of a sulky-harrow embodying my invention. Fig. 4 is a detail perspective view of a part of the pivotal tongue and connections. This view also shows a portion of the frame on which the tongue is pivoted. Fig. 5 is a detail perspective view of the standards and axle and a portion of the sulky-frame and harrow-section.

H′, H², and H³ designate a harrow formed in three sections, and A designates the axle; B B, the wheels; F, the inclined or oblique bars, and F′ the beam forming the frame of the sulky.

As shown in Fig. 3 of the accompanying drawings, the harrow-sections H′ and H³ are formed with knuckles *k*, through which brackets *h* pass, and the latter are secured to the harrow-section H²; but the knuckles *k* may be secured to the central section, H², and the bracket *h* may be secured to the outer sections, H′ and H³, if preferred; and these brackets *h* are formed much longer than the knuckles *k* to permit the outer sections, H′ and H³, to give or move back and forth independent of the central section, H², for the purpose of easing the draft of the harrow when turning or passing over obstructions.

As shown in Fig. 2 of the accompanying drawings, P designates a pulley, which revolves perfectly free in bearings secured to the evener E, and C designates a chain secured at one end to the beam F′ of the sulky. This chain C then passes over the grooved pulley P and is secured at the other end to the central harrow-section, H², for the purpose of loosely attaching the harrow-sections to the beam F′ of the sulky. At the same time the harrow will not be affected by the tilting up or down of the sulky-frame, because the chain C will run over the pulley P. This prevents any tilting motion of the sulky-frame from affecting the harrow-sections. The harrow-sections will therefore always rest and draw level on the ground when lowered for operation.

D′ D² designate chains for suspending the evener E and doubletree D, respectively, from the tongue T and clear from the ground or harrow-sections, to prevent these devices from being broken or damaged by catching in the harrow-teeth, or from being stepped on by the horses.

D³ are chains connecting the evener with the doubletree.

D⁴ are the singletrees.

S designates a seat for the driver, and U an umbrella extended over the same to protect the driver from the intense heat of the sun, and the handle of this umbrella is securely held in place in a socket, U′.

S′ and S² designate standards rigidly secured to the central harrow-section, H², and these standards S′ and S² are loosely fitted to and extend through apertures G, formed in the bent ends of the bars F, as shown in Figs. 3 and 5 of the accompanying drawings, or these apertures may be formed in any suitable rigid support, for the purpose of guiding the central harrow-section vertically as it is raised and lowered, and thereby prevent the harrow-sections or wheels of the sulky from being damaged by striking against one another; and secured to or formed integral with the upper end of these standards S′ S² are hooks *e*, with which loops *e′* on the handles I engage, and these handles are rigidly secured to the outer harrow-sections, H′ and H³, so that by grasping the hand-bends *e* they, as well as the harrow-sections secured thereto, may be elevated to the position shown in Fig.

1 of the accompanying drawings when passing through a gate or along the road or from one field to another, or, when in operation, one of the outer sections may be raised, as shown, to pass a stump, stone, or other obstruction, or one harrow-section may be raised to remove a sod or other large obstruction from the teeth of the harrow; and J J designate arched braces, which further brace and rigidly secure the central harrow-section to the standards S′ and S².

As shown in Fig. 2, L designates a self-locking lever, formed with an arm, l', and the latter is connected by chains K with the central harrow-section H², as shown in Fig. 2 of the accompanying drawings, and this lever is pivoted on a pin, l^3, secured in a bracket, l^2, and the latter is secured to the beam F′. When the lever L is in the position shown by solid line in Fig. 2, the central harrow-section, H², is lowered in position for working, because the arm l' is in front and underneath said lever L, and when this lever L is in the position shown by dotted line in Fig. 2 and the loops e' on the handles I engage with the hooks e on the standards S′ S² all of the harrow-sections are raised clear from the ground to the position shown in Fig. 1, and the harrow-sections are locked in this position, because the arm l' on the lever L, to which the chains K are attached, is above, and at the rear of the pin l^3, on which the lever L is pivoted.

T designates a tongue pivoted on the pivot-bolt t', secured in the beam F′. This tongue is pivoted in this manner to prevent it from jerking or striking the horses if one side of the sulky or harrow section should strike an obstruction, and t^2 designates a pin, which may be extended through the tongue T and beam F′, so that the horses could control the machine when traveling along the road or from one field to another; and the rear end of this tongue is held in a socket-bracket, N, rigidly secured to the sulky-frame, and this socket-bracket permits a lateral but no vertical movement therein when the pin t^2 is removed, and the movement of the tongue T in this slotted bracket N permits the horses to easily turn the harrow. At the same time the rear end of the tongue T, engaging with the interior face of the ends of the socket in the bracket N, prevent the horses and harrow-sections from coming in contact, thereby preventing damage to either. In the annexed drawings this harrow is shown with teeth suitable for the purpose of harrowing; but cultivator or scarifier teeth may be used in their place, if desired, so that this machine could be used equally well as a harrow, scarifier, or cultivator.

Having thus described my invention, I claim—

1. The combination of the harrow-frame, consisting of the central section, H², having brackets h, the outer sections, H′ and H³, having knuckles k, by which they are hinged to the brackets, the axle A, the wheels B between the central section and side sections, the beam F′, the oblique bars F, the tongue T, the bracket l^2 on the beam, the lever L, having an arm, l', and the chain K, by which the arm and central section are connected, substantially as described.

2. The combination of the central section, H², the axle A, the wheels B, the beam F′, the oblique bars F, the tongue T, the evener E, supported on the tongue, the pulley P, secured to the rear side of the evener, and the chain C, passed between the evener and the pulley and having its ends connected to the central section and to the beam, respectively, substantially as described.

3. The combination of the central section, H², the axle A, the wheels B, the beam F′, the oblique bars F, the tongue T, the evener E, supported on the tongue, the doubletree D, supported on the tongue and connected to the evener, the pulley P, secured to the rear side of the evener, and the chain C, passed between the evener and the pulley and having its ends connected to the beam and to the central section, respectively, substantially as described.

4. The combination of the central section, H², the sulky-frame, the tongue T, the evener E, the pulley P, secured to the evener, and the chain C, passed between the evener and the pulley and having its ends connected to the central section and to the sulky-frame, respectively, substantially as described.

5. The combination of the central section, H², the outer sections, H′ and H³, hinged thereto, the axle A, the bars F, having bent ends forming apertures G, the standards S′ and S², secured to the central section and passed through the apertures, having hooks e, and the handles I, secured to the outer sections and provided with loops e', for engaging the hooks, substantially as described.

6. The combination of the central section, H², the outer sections, H′ and H³, hinged thereto, the axle A, the bars F, having bent ends forming apertures G, the standards S′ and S², secured to the central section and passed through the apertures, having hooks e, the arched braces J, secured to the central section and to the standards, and the handle I, secured to the outer sections and provided with loops e', for engaging the hooks, substantially as described.

7. The combination of the central section, H², the outer sections, H′ and H³, hinged thereto, the standards S′ and S², secured to the central section, having hooks e, the handles I, secured to the outer sections, having loops e' and hand-pieces e'', and the sulky-frame, substantially as described.

8. The combination of the central section, H², the axle A, the wheels B, the beam F′, the bracket l^2, the lever L, having arm l', the chains K, the evener E, the tongue T, the chain D′, the pulley P, and the chain C, substantially as described.

9. The combination of the central section,

H^2, the axle A, the wheels B, the beam F′, the bracket l^2, the lever L, having arm l', the chains K, the oblique bars F, having bent ends forming apertures G, the standards S′ S^2, the tongue T, the chain D′, the evener E, the pulley P, and the chain C, substantially as described.

10. The combination of the central section, H^2, the axle A, the wheels B, the rigid beam F′, the bracket l^2, the lever L, having arm l', the chains K, the bracket N, having a socket and rigidly secured to the beam, the pivoted tongue T, and the pivot-bolt t', substantially as described.

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

WILLIAM HEWITT.

Witnesses:
P. J. EDMUNDS,
A. EDMUNDS.