

[54] **FOLDABLE IMPLEMENT CART WITH FORWARDLY OFFSET WING SECTIONS AND TACKING MEANS FOR THE CABLE ARM RETAINING MEANS**

[72] Inventors: **Harry Sosalla; Lyle M. Meusburger; Max L. Jarnagin**, all of Sac City, Iowa

[73] Assignee: **Noble Manufacturing Company**

[22] Filed: **June 30, 1970**

[21] Appl. No.: **51,203**

[52] U.S. Cl. **172/311, 172/456, 280/411 R**

[51] Int. Cl. **A01b 65/02**

[58] Field of Search..... **172/310, 311, 456; 280/411-413**

[56] **References Cited**

UNITED STATES PATENTS

3,529,674	9/1970	Todd et al.....	172/456 X
3,606,848	9/1971	Dobbs et al.....	172/311
3,640,345	2/1972	Sosalla.....	172/311
3,548,954	12/1970	Lindemann.....	172/456
790,376	5/1905	Merrill.....	172/456
2,944,615	7/1960	Clark.....	172/456
3,302,956	2/1967	Sosalla.....	172/311
3,173,497	3/1965	French	172/456
3,428,333	2/1969	Nelson.....	172/456

Primary Examiner—Robert E. Pulfrey

Assistant Examiner—C. W. Hanor

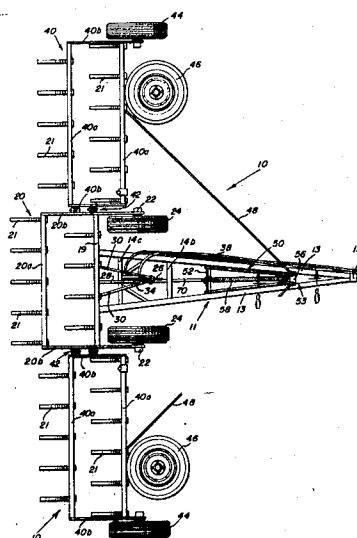
Attorney—Hofgren, Wegner, Allen, Stellman & McCord

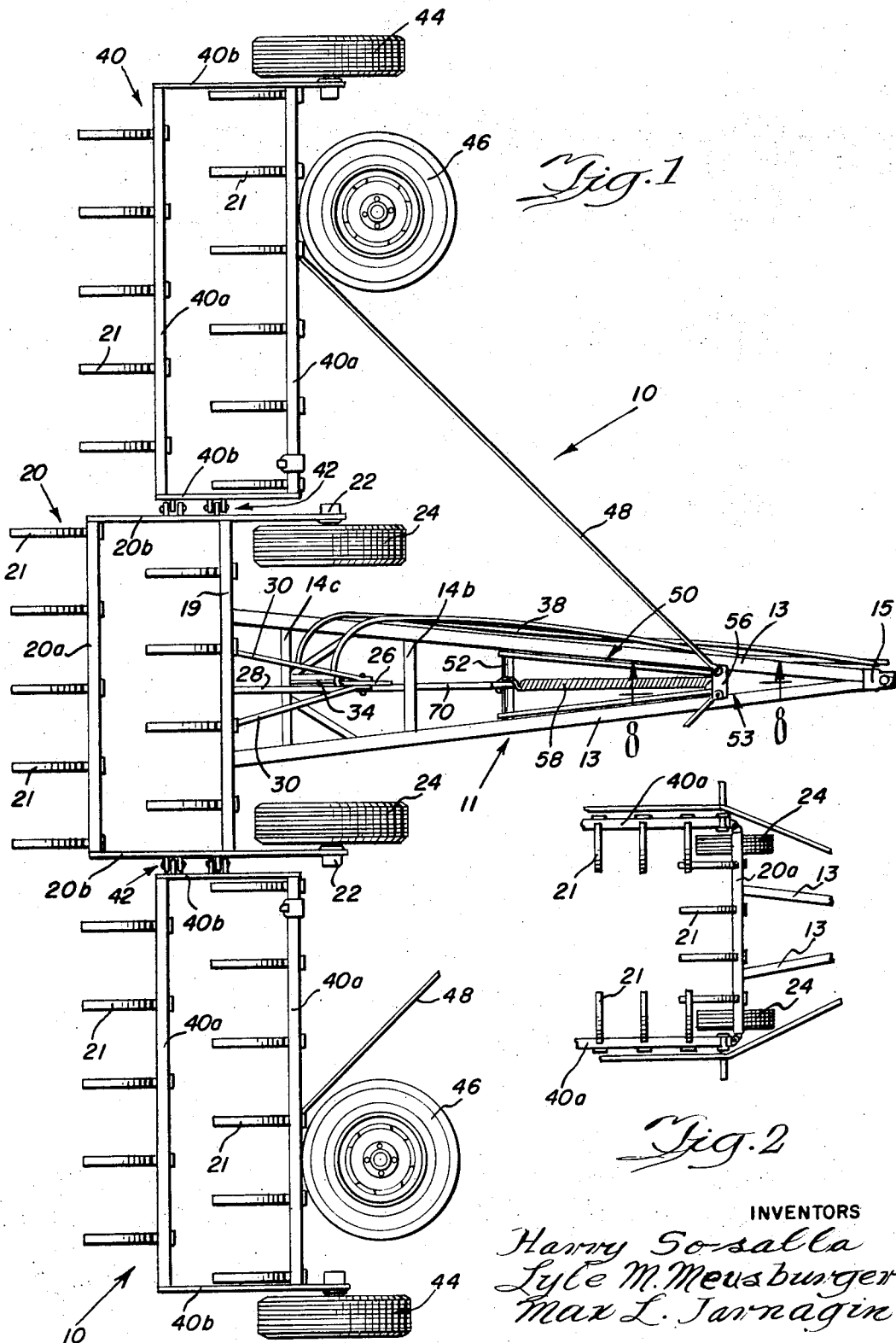
[57] **ABSTRACT**

A foldable sectional tow-type implement, including a wheel cart having a centrally located section which is

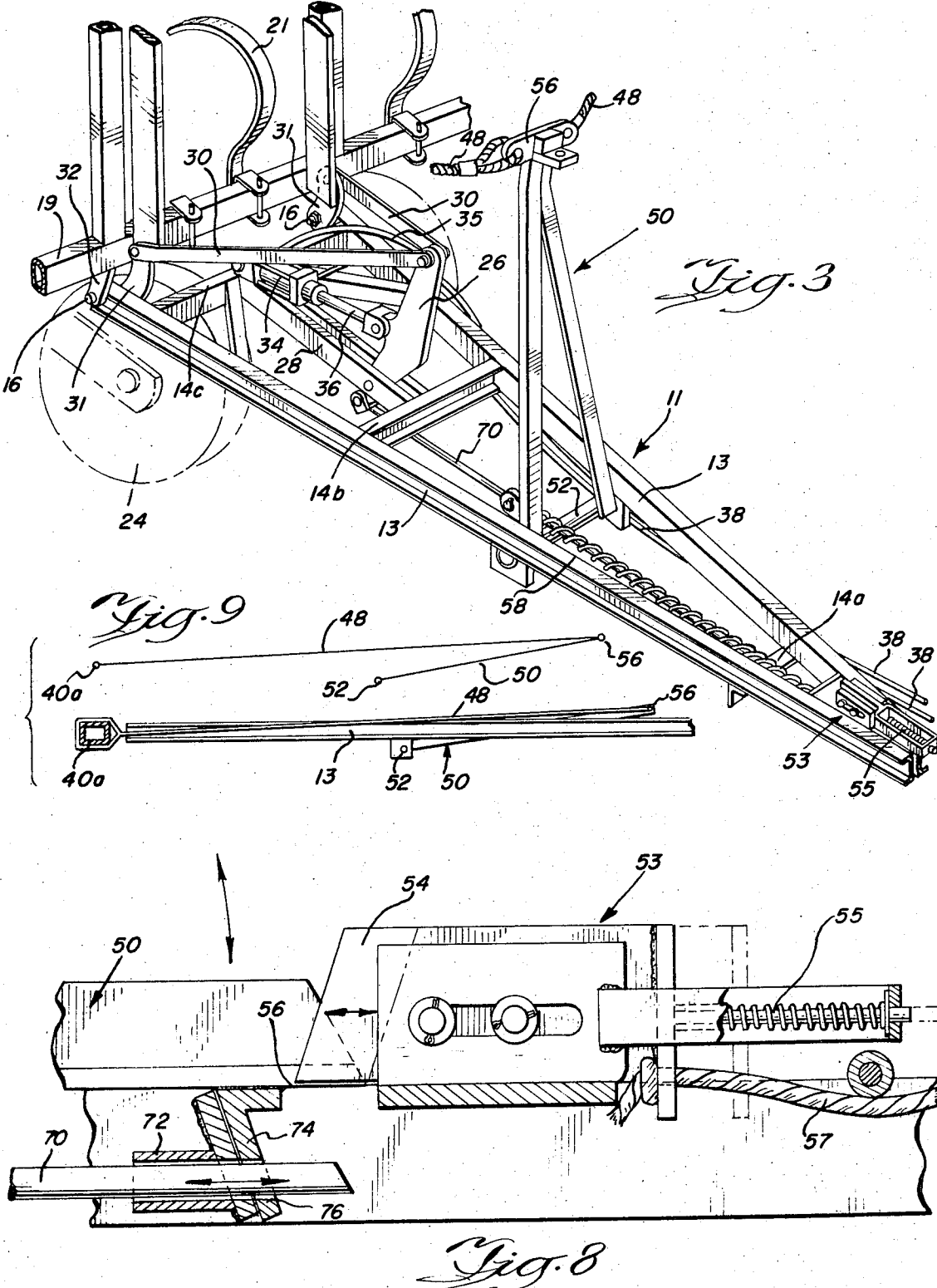
revolvably mounted on a horizontal axis extending transversely of the direction of travel for movement between a lower, generally horizontal, operative position and a generally vertical transport position, and a pair of outboard sections interconnected to the centrally located section and each being revolvable with the center section and also swingable in a fore and aft direction relative to the center section when revolved to the vertical transport position to permit folding of the outboard sections rearwardly relative to the center section. Each of the sections support or mount agricultural type tools. At least portions of each of the outboard sections are offset forwardly of the centrally located section to provide bypass clearance for the tools when the outboard sections are folded rearwardly and also to shift the center of gravity of the entire implement forwardly to facilitate revolving the sections to the vertical transport position. Wheels for all of the sections are mounted on a common horizontal axis forward of the sections. Flexible cables are connected between the outboard sections and the end of a swingable arm pivoted to the cart forward of the sections. The arm is locked in a lowered position to support the outboard sections when the implement is in its operative position. The arm is released for swinging to a rearward position to permit the outboard sections to be folded rearwardly, but the cables remain connected to the arm and outboard sections whereby the outboard sections pull the arm rearwardly during folding. An independent positive lock, hydraulically actuated when the outboard sections are lowered to their operative positions, is provided to lock the cable arm in its lowered position. The outboard sections are hingedly connected to the center section with a lost motion structure to provide for limited vertical movement of the outboard sections relative to the center section about the hinge connections to accommodate irregular terrain when the implement is moved thereover while in its folded transport position.

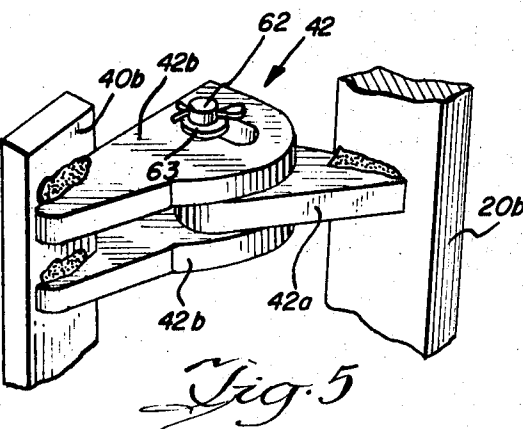
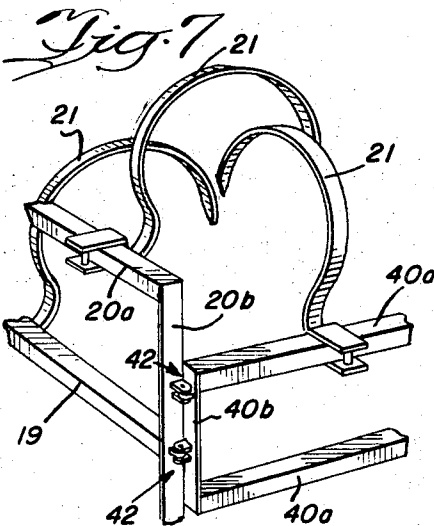
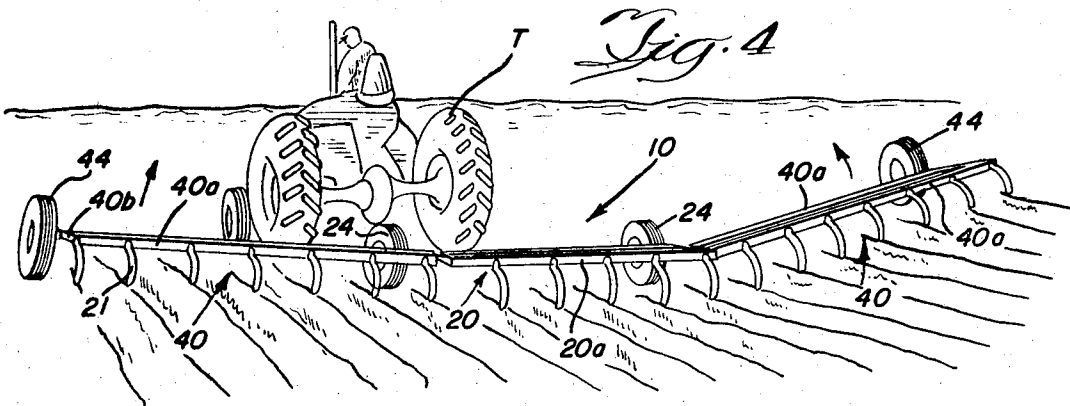
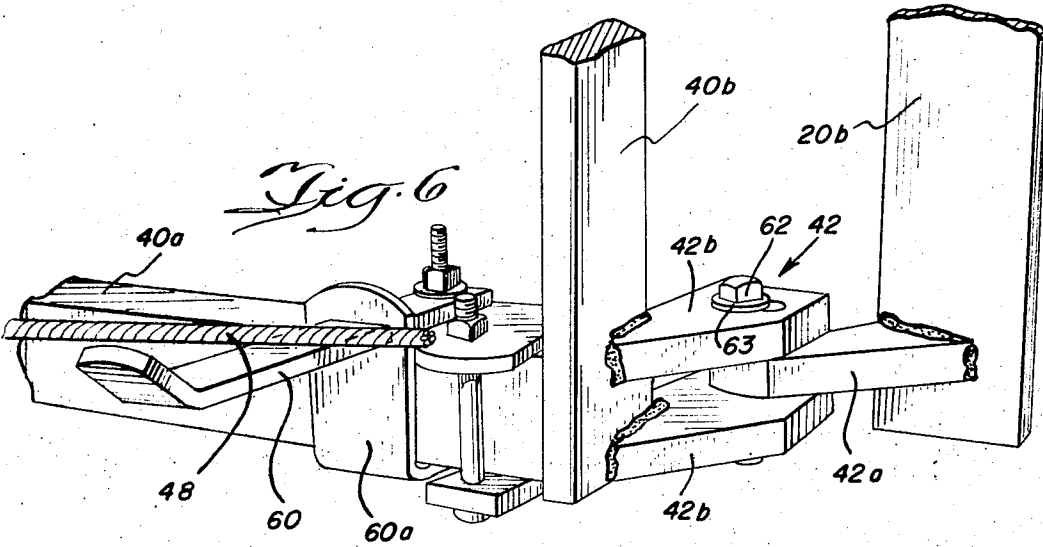
4 Claims, 9 Drawing Figures





BY *Hofgun, Hegner, Allen, Stellman & McCord*
 ATTORNEYS





FOLDABLE IMPLEMENT CART WITH FORWARDLY OFFSET WING SECTIONS AND TACKLING MEANS FOR THE CABLE ARM RETAINING MEANS

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to a sectional tow-type implement cart which has at least a pair of outboard sections which are movable from a laterally extending operative position to a folded inoperative or transport position with the outboard sections extending generally parallel to the direction of travel and rearwardly of a center section.

Power folded sectional tow-type implements of the character described are being used extensively by farmers, and such power folding implements fall into two general classifications: those which require an operator to dismount from the tractor to manually release the foldable outboard sections after they have been revolved to a raised inoperative position so that they may be folded, and those which permit an operator to shift the various sections between operative and transport positions without dismounting from the tractor.

Exemplary structures of the first type may be seen by reference to such U.S. Pat. Nos. as Clark 2,944,615; Marvin 2,973,818; and Gellner 3,086,598. Each of these foldable structures require the operator to dismount from his tractor to release the outboard sections. Such U.S. Pat. Nos. as French 3,122,210 and 3,173,497 show exemplary structures of the second type (the raising and lowering of the outboard sections and folding and unfolding of those sections are accomplished without the operator dismounting from the tractor). Assignee's application, Ser. No. 855,840, filed Sept. 8, 1969, and entitled "Foldable Harrow Cart" points out the disadvantages of the prior art structures of the second type, referred to above, and discloses certain improvements thereover. This application relates to and discloses further improvements in such power folded sectional tow-type implements.

Therefore, a principal object of this invention is to provide a new and improved foldable sectional tow-type implement wherein an operator may shift the various sections between operative and transport positions without dismounting from his tractor.

Another object of the invention is to provide a foldable sectional working implement of the character described in the preceding paragraph which is power operated, such as by hydraulic power means mounted on the mobile cart, for revolving the sections about a horizontal axis to permit folding of the outboard sections. A pair of wheels are rotatably journaled on a pair of arms fixed to a drawbar of the centrally located section and extend forwardly thereof when the implement is in its lowered operative position. The wheels have a common axis of rotation and form the axis about which the centrally located section and the outboard sections are revolved to the vertical inoperative position.

Certain improvements are provided to lessen the pressure on the hydraulic power means. More particularly, the outboard sections are offset forwardly relative to the central section with at least portions of the outboard sections disposed forwardly of the center section drawbar to shift the center of gravity of the implement forwardly to lessen the pressure on the hydraulic power

means. Furthermore, each of the outboard sections has at least one wheel disposed forwardly thereof on the common axis for the center section wheels to provide a longer moment arm for the outboard sections to further lessen the pressure on the hydraulic power means. The offsetting of the outboard sections relative to the center section is important also to provide bypass clearance for agricultural tools mounted on the outboard sections and tools mounted on the center section when in the folded transport position.

Flexible cables are connected between the outboard sections and an arm which is pivotally mounted to a wheel cart forward of the center section. The arm is locked in a lowered position to support the outboard sections when the implement is in its lowered operative position. The arm is released for swinging to a rearward, generally upright position to permit the outboard sections to fold rearwardly, but the cables remain connected to the arm and outboard sections whereby the outboard sections pull the arm upwardly and rearwardly during folding against the biasing of a spring means between the arm and the wheel cart. During unfolding of the cart, the spring means biases the arm back to its lowered forward position where it is locked in place. Thus tension remains in the cables at all times during folding and unfolding. An independent positive lock, hydraulically actuated when the outboard sections are lowered to their operative positions, is provided to lock the cable arm in its lowered position.

An additional feature of the invention is that a lost motion means is provided in the hinge connections between the outboard sections and the central section when the outboard sections are in their folded, transport positions to provide for limited vertical movement or pivoting of the outboard sections relative to the center section about the hinge connections to accommodate for irregular terrain when the implement is moved thereover while the implement is in its fully folded transport position.

Another feature is the provision of means on the outboard sections to prevent the released flexible cables from dropping onto the ground when the outboard sections are in their fully folded transport position during turning movement of the tractor and implement.

Other objects, features and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of the foldable, sectional, tow-type implement of the present invention in its lowered, extended operative position;

FIG. 2 is a top plan view, partially cut away and on a reduced scale, of the mobile implement in its fully folded transport position;

FIG. 3 is a perspective view of the wheel cart which is forward of the center section of the implement, with the cable arm in position when the outboard sections are folded rearwardly;

FIG. 4 is a perspective view of the mobile implement, on a reduced scale from that shown in FIG. 1, attached to a tractor and in its extended operative position with harrow teeth in engagement with the ground;

FIG. 5 is a perspective view of one of the hinge connections between the outboard sections of the implement and the center section when the sections are folded, on an enlarged scale from that shown in FIGS. 1 and 2 and with portions of the sections cut away;

FIG. 6 is another perspective view of a hinge connection and showing one of the outwardly protruding arms which prevent the cables from dropping onto the ground when the implement is turned during travel;

FIG. 7 is a partial perspective view illustrating the bypass clearance for the tools mounted on the implement, when in folded position;

FIG. 8 is a partial sectional view, on an enlarged scale, taken generally in the direction of line 8—8 of FIG. 1; and

FIG. 9, at the bottom thereof, is a partial vertical elevation looking in the direction of line 9—9 in FIG. 1, with a schematic diagram at the top thereof showing the triangle formed by the cables and cable control arm.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings in greater detail, the invention as illustrated herein is embodied in a foldable, tow-type, mobile sectional implement, designated generally by the numeral 10 in FIGS. 1 and 4.

The implement 10 includes a fore and aft extending mobile wheel cart, generally designated 11, and shown best in FIG. 3. The cart 11 is comprised of a cart frame which includes a pair of fore and aft extending frame members 13 which are rigidly interconnected at their forward ends where a hitch 15 is provided. The frame members 13 diverge rearwardly and are structurally rigid with three cross-frame members 14a, 14b, 14c which extend transversely between the fore and aft frame members 13.

The rear ends of the frame members 13 are pivoted at 16 (FIG. 3) to an elongate transversely extending center drawbar 19 of a center section, generally designated 20, for the implement. This center section includes a rear transverse frame member 20a joined to the drawbar 19 by a pair of fore and aft extending frame members 20b rigidly forming a rectangular center section for the implement. A plurality of harrow spring teeth 21 are secured to the drawbar 19 and frame member 20a of the center section for engagement with the ground to work the ground as shown in FIG. 4. The center section fore and aft frame members 20b extend forwardly of the drawbar 19 and have housings 22 for housing the axle of a pair of ground-engaging wheels 24, with the wheels 24 having a common axis of rotation forwardly of the drawbar 19. The drawbar 19 and, thus, center section 20 are revolvable through an arc of approximately 90° between a lowered operative position as illustrated in FIGS. 1 and 4 to an elevated inoperative position where the drawbar 19 is disposed generally vertically above the horizontal axis of rotation of the wheels 24. It will be noted that when the drawbar 19 is in the lower operative position (FIGS. 1 and 4), the center section 20 carried thereby will be in a horizontal position so that the harrow spring teeth 21 carried thereby will engage the surface of the earth. Similarly, when the drawbar 19 and section 20 are revolved to the elevated inoperative position, the center section 20 will be disposed in an upright position generally vertically above the axis for the wheels 24.

Means (FIGS. 1 and 3) are provided for revolving the drawbar 19, and thus the entire implement (as well be described hereinafter), about its longitudinal axis between the aforesaid operative and inoperative positions and this means comprises a linkage which includes an actuating lever 26 pivotally mounted on a frame element 28 which extends between the cross-frame members 14b and 14c, for fore and aft swinging movement of the actuating lever 26 about a substantially horizontal transverse axis. The upper end of the actuating lever 26 is pivotally connected to the forward end of a motion-transmitting link structure which includes diverging links 30 and pivot links 31. The pivot links 31 are pivotally connected to a pair of arms 32 (FIG. 3) which are fixed to the drawbar 19.

Means (FIGS. 1 and 3) are provided for power shifting this linkage and includes a fluid pressure piston and cylinder unit comprising a cylinder 34 which is pivotally connected at one end to the rear cross-frame member 14c to permit pivoting movement about a substantially horizontal transverse axis. The cylinder 34 has a piston movable therein and which is connected to a piston rod 36 that projects exteriorly therefrom. The piston rod extends forwardly and is pivotally connected to the actuating lever 26. This hydraulic unit is of the double acting type and a pair of conduits 38 are connected to a source of fluid under pressure in a known manner through appropriate valve controls to permit selective extension and retraction of the piston rod. The controls for operating the hydraulic system are located on the tractor T (FIG. 4) as is convention, and it will be seen that the center section, and thus the entire implement, may be effectively revolved between the aforesaid operative and inoperative positions.

A pair of elongate outboard or end sections, generally designated 40, are connected to opposite sides of the center section 20 and each outboard section includes a generally rectangular frame comprising horizontal transversely extending frame members 40a joined at their ends by horizontal fore and aft (in their operative positions as shown in FIG. 1) frame members 40b. Each outboard section 40 is hingedly connected by a pair of hinges, generally designated 42, between the inner frame member 40b of each outboard section 40 and the adjacent frame member 20b of the center section 20. As will be described in greater detail hereinafter, the hinges 42, when the implement is in its lowered horizontal position, have generally horizontal pivot axes so that the outboard sections 40 are capable of a floating action when in the lowered operative position to accommodate irregular ground surfaces, as seen in FIG. 4.

It should be pointed out that the outboard sections 40, of the embodiment of the invention shown in the drawings, also include a plurality of spring harrow teeth 21 for earth engagement and working as described above. The use of the spring harrow teeth is for illustration purposes, for the form of the invention shown herein may be used with numerous agricultural tools.

Each of the outboard sections 40 are hinged to the center section 20 in positions (as viewed in FIG. 1) offset forwardly relative to the center section 20 and the center section drawbar 19. The forward offsetting of the outboard sections shifts the center of gravity of the entire implement closer to the implement revolving axis defined by the axes for the wheels 24, and con-

sequently, less cylinder pressure is required. It should also be noted that by offsetting the outboard sections, sufficient clearance is provided so that the harrow spring teeth may bypass each other when the implement is in its folded transport position (see in FIGS. 2 and 7). In addition, each of the outboard sections 40 has a ground-engaging wheel 44 disposed forwardly of the outboard sections, when in their lowered operative positions, on extensions of the frame members 40b, with the axis of rotation of the outboard section wheels 44 in line with the axis of rotation of the center section wheels 24. Such a forward disposition of the wheels further lessens the pressure required by the piston and cylinder device described above by (a) further shifting the center of gravity forward and (b) providing a longer moment arm for the outboard sections during revolve-

The outboard sections 40 are shiftable between an operative extended lowered position as shown in FIGS. 1 and 4 and an inoperative folded elevated position, as is known in the art. FIG. 2 shows the outboard sections 40 extending rearwardly from the mobile cart 11 in a conventional folded, transport position. When the outboard sections are in the lowered operative position, the outermost end of each section is supported by the ground-engaging wheels 44 journaled at the forward ends of the frame members 40b. The ground-engaging wheels 44, however, are shifted out of engaging relation with respect to the surface of the ground when the implement is revolved to the inoperative elevated position, and the outer end of each outboard section 40 is provided with a transport wheel 46, which engages the surface of the ground when the associated outboard section 40 is in the transport position. However, this transport wheel is disposed out of engagement with respect to the surface of the ground, as shown in FIG. 1, when the associated outboard section 40 is in the operative extended position.

Retaining means, in the form of flexible cables 48, are connected between the outboard sections 40 and the forward end of the mobile cart 11. The flexible cables are connected to each of the outboard sections 40 intermediate the ends thereof and extend forwardly therefrom for connection to an elongated cable control arm or release member, generally designated 50, and pivotally mounted between the mobile cart frame members 13 by a pivot shaft 52 (FIG. 3). When the implement is in the lowered, horizontal operative position, the cables 46 support the outboard sections in a horizontal direction against rearward movement as the earth engaging harrow teeth 21, for instance, move along and work the ground. As shown in my aforesaid patent application, the cable control arm 50 is held downwardly in a generally horizontal position as shown in FIGS. 1 and 8 by a latch means, generally designated 53. Generally, the latch means 53 includes a tongue 54 which is biased by a spring 55 (FIG. 8) rearwardly in latching engagement over a front plate 56 rigidly secured to the free end of the cable control arm 50. To fold the implement 10 after the ground engaging tools are raised to the aforesaid inoperative position, the tongue 54 is pulled forwardly against the biasing of spring 55 by means of a rope 57 (FIG. 8) or the like leading up to the tractor seat for grasping by the driver. The control arm 50 then is released and the outboard sections

38 may fold rearwardly (FIG. 2) with the flexible cables 46 moving therewith whereby the control arm 50 is pulled or pivoted rearwardly about shaft 52 by the outboard sections, through the cables. As seen in FIG. 9, the pivot point (shaft 52) for the cable control arm 50 must be maintained below the cables 46 when the control arm is in its latched position so that the control arm will be pulled back by the outboard sections during folding.

When the implement is unfolded back to its operative position, a coil spring 58 urges the control arm 50 (which, in turn, brings the cable 48 therewith) back into locked engagement with the latch means 54.

The cables 46 thus are maintained taut during the folding and unfolding of the implement.

As seen in FIGS. 2 and 6, an arm member 60 is connected by a bracket 60a to the forwardmost outboard section frame member 40a (FIG. 1) and extends outwardly therefrom when the outboard sections are in their fully folded positions (FIG. 2). These arms 60 prevent the flexible cables 48 from dropping onto the ground when the tractor makes a somewhat sharp turn during transport of the fully folded implement. Should a sharp turn be made and one of the cables becomes slack, the cable will come to rest on the arm 60 on the respective side of the implement.

Another feature of the invention is the provision of lost-motion means in the hinges 42 to provide for limited vertical movement of the outboard sections 40 relative to the center section 20 about the hinges 42 to accommodate for irregular terrain when the implement 11 is moved thereover while the implement is in its fully folded transport position. As shown in FIGS. 1, 5 and 6, each hinge 42 between the center section 20 and the outboard sections 40 comprises an ear 42a secured to either the respective outboard section 40 or the center section 20, the ear 42a being sandwiched between a pair of ears 42b on the adjacent section, with a pin 62 extending through generally aligned openings in the ears 42a, 42b. The openings are generally vertically oriented when the implement is in the folded transport position (FIGS. 2, 5, and 6), and generally horizontal when in the lowered operative position of the implement (FIG. 1). Either the opening in the one ear 42a or the openings in the pair of ears 42b are enlarged to provide a lost-motion connection to permit vertical movement of the outboard sections relative to the center section about the hinge connection 42, as aforesaid. Washers 63 prevent the pins 62 from falling through the enlarged openings.

Means in the form of an independent locking device hydraulically actuated by the piston and cylinder device described above is provided to lock the cable control arm 50 in its lower position. In certain instances, the latch means 53 may be rendered inoperative by rust, dirt, or the like, clogging the device and preventing the latch tongue 54 from moving rearwardly over the plate 56 on the free end of the cable control arm 50. Without a positive lock, should the latch means 53 become inoperative, damage may be done to the hinges or other portions of the implement when an operator moves the tractor while the implement sections are not in their fully raised or fully lowered position. Thus, and referring to FIGS. 3 and 8, an independent positive lock is provided in the form of a rod 70

extending front to rear of the cart and connected at its rear end to the lower end of the actuating lever 26 which is actuated by the piston and cylinder device. The front end of the rod 70, as best seen in FIG. 8, is guided in a sleeve 72 welded to the frame members 13. A bracket 74 is fixed to the underside of the plate 56 on the free end of the cable control arm 50 and has an aperture 76 therethrough for receiving the locking rod 70. As seen in FIG. 3, the connection of the front end of the locking rod 70 to the actuating lever 26 is relatively close to the pivot point for the lever so that a relatively short moment arm is formed for reciprocating the rod 70 axially within the sleeve 72. FIG. 8 shows the locking rod disposed within the aperture 76 on the underside of the control arm 50, with the control arm in its lowermost position. Thus it can be seen that as the piston and cylinder device is actuated to move the top of the actuating lever 26 rearwardly to raise the implement sections from their lowered operative position to their upper, vertical inoperative position, the locking rod 70 is moved axially rearwardly out of locking engagement within the aperture 76 in the brackets 74 on the underside of the cable control arm 50. The amount of movement of the locking rod 70 in correlation with the raising and lowering of the implement sections should be such that the rod does not move completely out of the aperture 76 until the very end of the piston travel of the piston and cylinder device. This is important so that the positive lock for the cable control arm is not released until the implement sections substantially reach their vertical positions. Such a structure prevents damage to the implement in the case that the latch 53 fails to lock, or becomes unlocked, in an intermediate angular position of the implement sections.

During operation of the implement, the hitch 15 will be connected to a prime mover such as the tractor T (FIG. 4), and the implement will be towed therebehind. If it is assumed that the implement is in the operative position shown in FIG. 1, the piston rod 36 will be retracted so that the actuating lever 26 is disposed in the position illustrated in FIG. 1. The center section 20 and the outboard sections 40 will be disposed generally horizontal in their lowered working positions. In this position, the outer ends of the outboard sections will be supported for travel by the ground-engaging wheels 44 and the outboard sections will be permitted to "float," due to the hinge connection 42, to accommodate irregularities in the terrain.

When it is desirable to shift the implement to the transport position, the operator of the tractor will actuate the controls located on the tractor whereby the piston rod 36 shifts the actuating lever 26 in a forward direction. This movement is transmitted through the transmitting link 30 to the center section drawbar 19 to rotate the latter and also to produce revolving movement in the forward direction with respect to the outboard sections 40. Rotation of the outboard sections in this direction elevates the associated tools (spring harrow teeth 21 in the embodiment of the invention shown in the drawings). The transport wheels 46 will be rotated from their raised positions to ground-engaging positions while the ground-engaging wheels 44 will be moved out of engaging relationship with respect to the ground.

With the tools, the outboard sections 40 and the center section 20 in their raised inoperative position, the operator of the tractor will pull on rope 57 to move tongue 54 from its latch position over the front plate 56 on the forward end of the cable control arm 50, and the cables 48 will pull the control arm rearwardly as the outboard sections 40 are swung to the rearward folded position (FIG. 2) upon forward movement of the tractor or prime mover. The offsetting of the outboard sections permit the harrow teeth 21 to bypass at the juncture of the center section and the outboard sections.

When it is desirable to shift the implement back to the operative lowered position, the operator backs the tractor rearwardly whereby the transport wheels will shift the outboard section to the extended position and the front plate 56 on the cable control arm 50 will automatically latch, because of the biasing of the spring 58, under the latch tongue 54. The operator then actuates the hydraulic unit to retract the piston rod thereof so that the center drawbar and outboard sections 40 are revolved to allow the associated tools to be lowered.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom as some modifications will be obvious to those skilled in the art.

We claim:

1. In a mobile foldable sectional agricultural type implement which includes a mobile cart for travel over the ground in a forward direction, said cart being adapted for connection to a prime mover and including a frame having tool carrying means, said frame being mounted on the cart and extending transversely of the direction of travel and being revolvable about an axis transversely of the direction of travel for movement between a generally horizontal operative position and a generally vertical inoperative or transport position, said frame having a central section and a pair of end sections, the end sections being hinged to the central section for swinging movement relative to the central section to a rearward folded position in angular relation to the central section when the frame is in said vertical transport position, and power means on said cart for revolving said frame about said axis to permit folding said end sections, the improvement comprising means hingedly connecting said central section to each end section with the end sections and the ground engaging tools carried thereby being offset forwardly of said central section and the corresponding ground engaging tools carried thereby so that when said end sections are folded about said hinge means, ground engaging tools on said end sections will be vertically displaced from the ground engaging tools on said central section to preclude interfering contact therebetween, and support means on each section for ground engaging wheels, each extending forwardly distances to locate each wheel center forwardly of said axis when said sections are in said horizontal operative positions, said forwardly located sections placing the center of gravity of the frame closer to said axis for lessening the pressure on said power means.

2. In a mobile foldable sectional agricultural type implement which includes a mobile cart for travel over the ground in a forward direction, said cart being adapted for connection to a prime mover and including a frame having tool carrying means, said frame being

mounted on the cart and extending transversely of the direction of travel and being revolvable about an axis transversely of the direction of travel for movement between a generally horizontal operative position and a generally vertical inoperative or transport position, said frame having a central section and a pair of end sections, the end sections being hinged to the central section for swinging movement relative to the central section to a rearward folded position in angular relation to the central section when the frame is in said vertical transport position, and power means on said cart for revolving said frame about said axis to permit folding said end sections, the improvement comprising hingedly connecting said frame end sections to said central section with at least one-half of each of said frame end sections disposed forwardly of said central section in said operative position so as to shift the center of gravity of the frame forwardly to lessen the pressure on said power means and so as to provide bypass clearance between the tools on said end sections and the tools on said central section when in said folded or transport position.

3. A foldable sectional tow type implement, including a wheel cart having a centrally located section which is revolvably mounted on a horizontal axis extending transversely of the direction of travel for movement between a lower, generally horizontal, operative position and a generally vertical transport position, and a pair of outboard sections interconnected to the centrally located section and each being revolvable with the center section and also swingable in a fore and aft direction relative to the center section when revolved to the vertical transport position to permit folding of the outboard sections rearwardly relative to the center section, a cable control arm pivotally mounted to the wheel cart forward of said sections and swingable from a forward, lower generally horizontal position and a rearward, upper generally vertical position, a pair of flexible cables connected between the outboard sections and the cable control arm to support the outboard sections when the implement is in its operative position and the control arm is in its lower position, power means on said cart for revolving said sections about said axis to raise and lower said sections and to permit folding of said outboard sections, and a positive lock means operated by said power means to lock said cable control arm in its lower horizontal position after initial lowering of said sections to their operative positions,

said power means comprising a piston and cylinder device, said lock means including a rod movably operable by said device, a rod receiving member on said cable control arm positioned to engage said rod when said arm is in its lowered position, said rod being moved into locking relationship with said rod receiving member upon initial movement of said piston and cylinder device to lower said sections.

4. A foldable sectional tow type implement, including a wheel cart having a centrally located section which is revolvably mounted on a horizontal axis extending transversely of the direction of travel for movement between a lower, generally horizontal, operative position and a generally vertical transport position, and a pair of outboard sections interconnected to the centrally located section and each being revolvable with the center section and also swingable in a fore and aft direction relative to the center section when revolved to the vertical transport position to permit folding of the outboard sections rearwardly relative to the center section, a cable control arm pivotally mounted to the wheel cart forward of said sections and swingable from a forward, lower generally horizontal position and a rearward, upper generally vertical position, a pair of flexible cables connected between the outboard sections and the cable control arm to support the outboard sections when the implement is in its operative position and the control arm is in its lower position, power means on said cart for revolving said sections about said axis to raise and lower said sections and to permit folding of said outboard sections, and a positive lock means operated by said power means to lock said cable control arm in its lower horizontal position after initial lowering of said sections to their operative positions, said lock means being operable to lock said cable control arm in its lower position at all times except when said sections are substantially in said vertical position; wherein said lock means comprises a first lock element mounted on said control arm and movable therewith and a second lock element mounted on said cart for movement to and from a locking position engaging said first lock element, and means interconnecting said power means and said second lock element and for moving said second lock element into locking engagement with said first lock element except when said power means has revolved said sections substantially to said vertical position thereof.

* * * * *

50

55

60

65