VALLONIA ROTARY TOOTH CULTIVATOR

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Cultivation of conifer seedbeds from the standpoint of weed control after seedlings emerge can be and is now largely eliminated by weed spray-- chiefly mineral spirits or solvent spray.

Post-emergence cultivation of hardwood seedbeds, however, is still necessary for weed control. This problem is solvable in part by mechanical, rotary-type cultivation. Our Vallonia Rotary Tooth Cultivator is used for this purpose.

In theory, the cultivator could be made with a line-shaft to cultivate a seedbed with any number of tree rows. Here at Vallonia we have a 4spool "battery" line-shaft for our 5-row beds and a 7-spool line-shaft for our 8-row beds.

Our machine has a tractor drawbar for use behind a light tractor as well as handles for the 2-man pulling method.

If it were not for chemical weed control we would have developed a self-propelled machine long ago. Since its use is now restricted to hardwoods (5 to 10% of our total production), our present machine has been adequate.

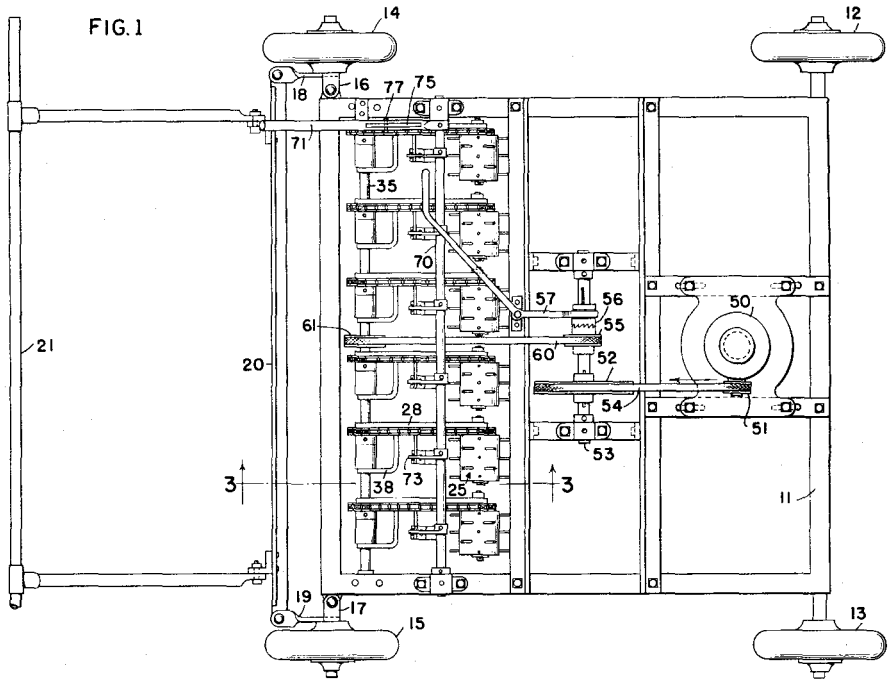


FIG. 2

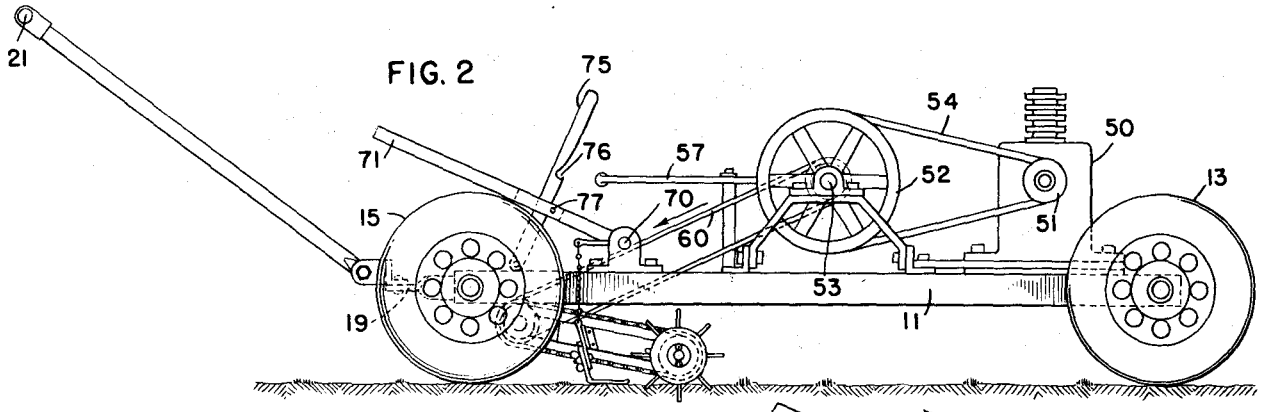
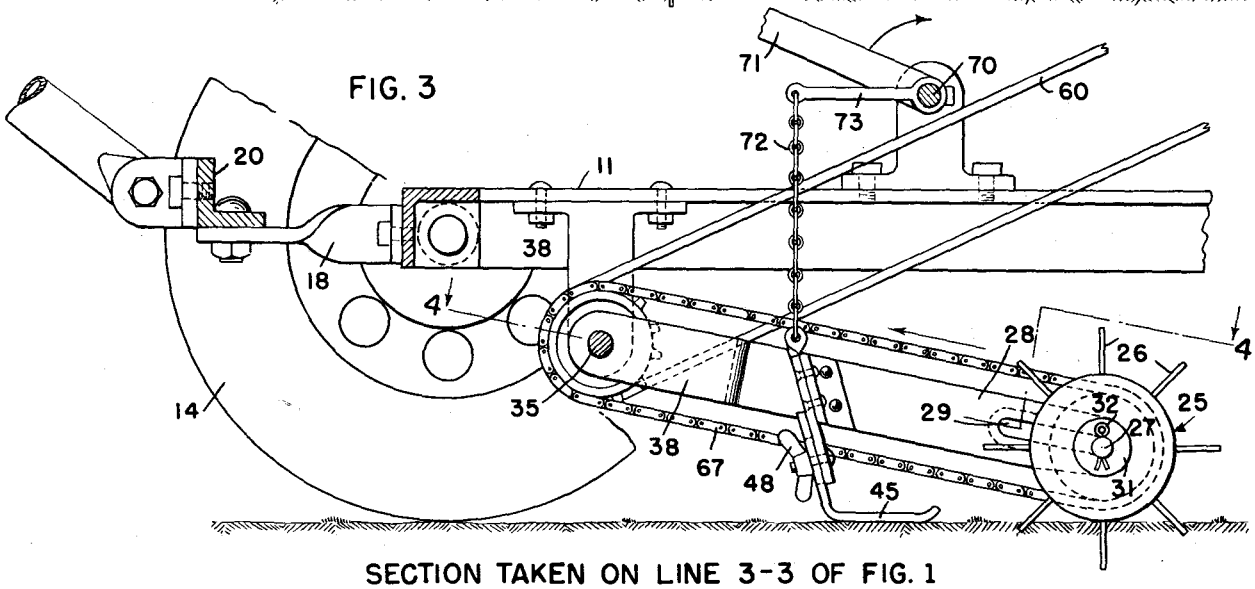
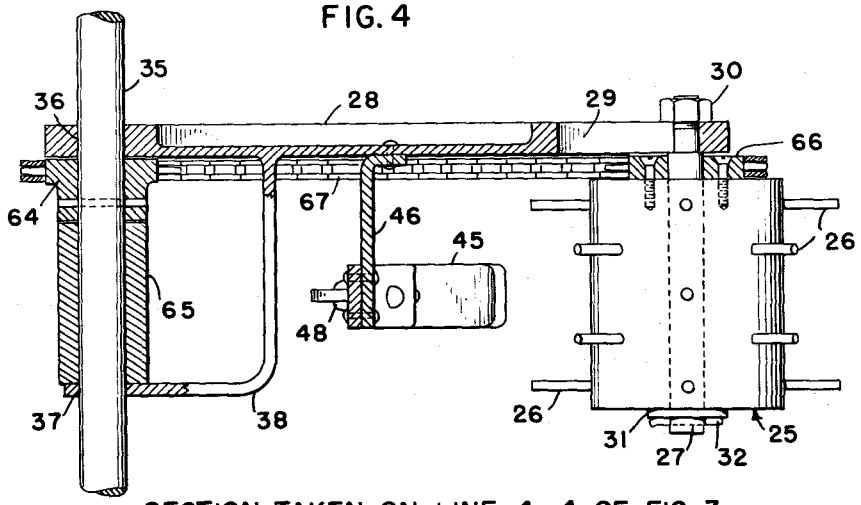


FIG. 3



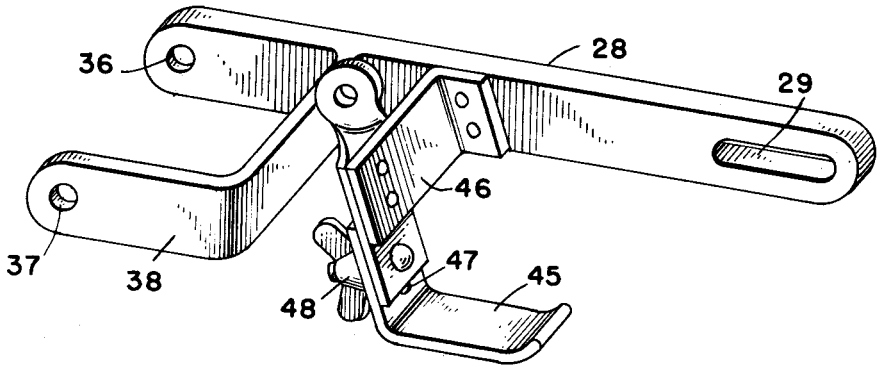
SECTION TAKEN ON LINE 3-3 OF FIG. 1

FIG. 4



SECTION TAKEN ON LINE 4-4 OF FIG. 3

FIG. 5



1. Rear Axle - 5/8" round shaft - 5'7" long.
8. Frame rail slot for belt #60, tension adjustment - 3/8" x 5".
9. Drawbar Handles - 3/4" pipe x 12".
10. Drawbar Tees - 3/4" pipe tees.

11. Frame members - 3/16" x 2" angle iron - #11 = 50"; #11A = 50".
12-15. Wheel barrow wheel and tire assembly (Standard item) (4.00 x 8).
16. Front wheel king pin assembly (R), 3/8" x 1 1/2" x 5".

17. " " " (L) "

18. King pin control rod (R) (Drag Links), 3/8" x 1 1/2" x 11".
19. " " (L) " "
20. Tie rod (connecting rod) 3/16" x 1 1/2" x 4'8" angle iron.
21. 2-man drawbar, pulling handle, 3/4" pipe x 48".
22. Pull shaft brackets - 3/8" x 2" x 2" angle iron.
23. Pull shaft swivel nuts - 3/8" x 1 1/2" SAE.
24. Pull shafts - 3/4" pipe x 33".
25. Cultivating spools - 3" x 3" lathe turned seasoned hardwoods, with 5/16" lathe cut holes.

26. Cultivating teeth, 1 /2 nails set in drilled holes in #25. 25 teeth in 10 staggered rows of 2 and 3 teeth per row per spool.
27. Fixed spool shaft - 7/8" x 4 1/2", with 3/4" of thread (1 /2") w/half nuts.

28. Cultivating assembly wishbones, 3/16" x 1 1/2" x 13".
29. Cultivating assembly wishbones, slotted ends, 1/2" x 4 ½".
30. Lock nuts, of fixed spool shafts, 1/2" hex. half nuts.
31. Flat washers, spool retaining, outside, 7/8" hole.
32. Cotter pins, spool retaining 1 ½".
33. Tooled thread of fixed spool shafts 1/2" - 3/4" of thread.
34. Flat spacing washer to be inserted on 27 between 66 and 29, 1/2" hole.

35. Line shaft, cultivation battery, 3/4" x 50".
36. Cultivating assembly wishbone, pulling side 3/4" hole.
37. Cultivating assembly wishbone guide side (hole) 3/4" hole.
38. " " 3/16" x 1 ½" x3"

39. Sprocket - spool screws 1 ½" F. H. wood screws.
40. Cultivating. spool bearing (housing) 15/16" lathe cut hole in wood spool.
41. Sprocket setscrew, recessed for L-end wrench.
42. Sprocket collar (welded to sprocket) 3/4" hole in collar w/ #41.
43. Battery line shaft frame bearing hangers 1 1/2" x 1 ½" x 2" with 3 /4" hole.
44. Chain lifting eye (and 44A).
45. Slotted depth adjustment feet, (shoes) 1/8" x 1 ½" x 5").
46. Depth adjustment brackets, 1/8" x 1" x 4".
47. Depth adjustment brackets, anchor nuts (optional size).
48. Depth adjustment wing nuts, 1/4" thread, w/1" bolt, w/slotted head.
49. Frame cross members, 3/16" x 2" x 50" angle iron.
50. Engine 1 H.P. , Continental "multitool", or Briggs & Stratton, etc.
51. Engine drive pulley, approx. 3", with 5/8" belt slot.
52. Reduction shaft master pulley w/setscrews, approx. 13", with 3/4" hole for 5/8" belt.
53. Reduction shaft - 3/4" x 16" (enough to allow room for clutch) NOTE: Continental "multitool" engine has a clutch built in.
54. V-belt, 5/8", engine to master reduction shaft pulley.
55. Reduction shaft drive pulley, 5 /8" slot (oversize) x 3 /4" hole x 3"diam.
56. Clutch - not necessary with "Multitool" engine - slip dog optional type.
57. Clutch handle or "rod" - any convenient arrangement.
58. Engine support and adjustment bolts - optional size.
59. Engine support frame rails w/sliding support bolt slots 3/16¹,x2" x 20" angle iron.
60. V-belt 1/2", reduction shaft to cultivation battery drive pulley.
61. V-pulley, 1/2", battery drive pulley 6" diam. with 3/4" hole.
62. Reduction shaft frame, ¼" x 2" flat iron.
63. Reduction shaft pillow blocks (bearings) w/grease fittings 1½" **x** 1½" **x** 2" with ¾" hole.
64. Drive sprockets, cultivation battery, 10 tooth x 1" Pitch (Bicycle brake parts).
65. Hollow spacing cylinders, 3/4" pipe x approx. 2" length.
66. Cultivating sprockets 10 tooth (same as #64) drilled for #39.
67. Metal link roller chains, bicycle type, 1" pitch, w/master link.
68. Reduction shaft collars w/setscrews, with 3/4" hole.
69. Clutch rod fulcrum, any convenient arrangement.
70. Lifting assembly master shaft 3/4" pipe x 50" long.
71. Lifting assembly lever 3/4" pipe with 3/4" pipe tee.
72. Lifting assembly chains - 5" bronze window sash chain.
73. Lifting assembly "fingers" 3/8" rods, 5" long.
74. Lifting assembly master shaft bearings (to accommodate 3/4" pipe).

75. Lifting assembly stop rod 1/4" x 1" x 20".

76. Lifting assembly stop rod, notch (raised position).

77. Stop rod anchor stud w/pin (lifting assembly) on #71.