

AGITATOR TYPE MECHANICAL TREE LIFTER

Robert O. Sowash

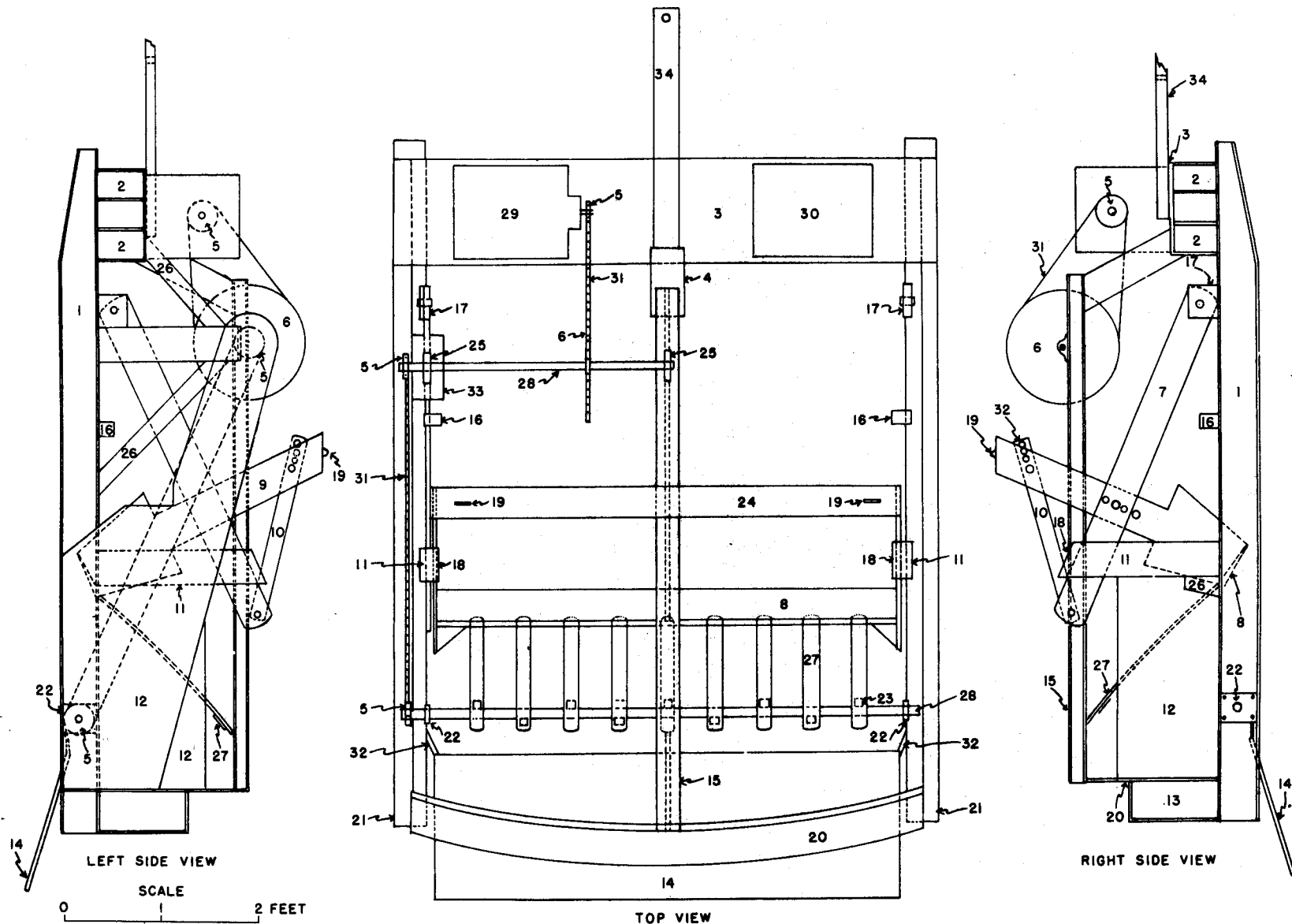
Forest Ranger, Wayne-Hoosier National Forest
Brownstown, Indiana

This tree lifter was developed at the Eveleth Nursery by Mr. Robert O. Sowash while he was in charge of that nursery. It was designed from the common pull type lifter used in many nurseries. It varies from the standard model by the addition of an "agitator attachment" and has the advantages of; (1) Almost complete pulverizing of the soil down to the depth of the tree roots; (2) Leaves the trees standing upright in the loose soil with no roots exposed; (3) Trees can be pulled easily resulting in good production per man day; and (4) Loose soil allows pulling without injury to the roots.

It was pulled at Eveleth with a D-4 Caterpillar. As the blade is held in the ground more by the weight of the lifter than the angle of the blade, it is probably not practicable to cut the weight too much. Local soil conditions might dictate whether a wheel tractor will handle it.

This lifter was used through 1952 and gave good results at considerable saving in time and money. The only change recommended after a full season's experience is an increase in the size of the cam shaft from 1-3/16" to 1-1/4" or 1-5/16".

Details of construction are shown on the following sketches.



MECHANICAL TREE LIFTER - AGITATOR TYPE

Designed and drawn by R. O. Sowash
Nursery Superintendent, Evelett Nursery 7-28-52

MECHANICAL TREE LIFTER
"Agitator Type"

Parts List

<u>No.</u>	<u>Name</u>
1.	- 5" channel - 2" webb
2.	- 4" channel support
3.	- 3/8" plate
4.	- 4" channel
5.	- 3" sprocket - 1-3/16" bore #C-15-T
6.	- 14" sprocket - 1-3/16" bore - #C-70-T
7.	- 5/8" x 4" lifting arm
8.	- 6" grader blade - shown in raised position
9.	- 5/8" x 6" blade supporting arm
10.	- 3/8" x 2" adjusting arm
11.	- 5/8" x 4" plate
12.	- 3/16" plate guard - for sprockets and chain
13.	- 5" channel - 2" webb
14.	- 1/4" slide plate - used on small stock
15.	- 3" - "I" beam - center support
16.	- 1-1/4" square iron - Z-1/2" long - depth control stop
17.	- 9/16" x 4" x 4" plate - lifting arm support
18.	- 1-1/4" square iron - lifting arm catch
19.	- Eye - for lifting cable to tractor
20.	- 5" curved angle iron - 3" webb
21.	- 4" shoe on bottom of channel
22.	- Roller bearings - 1-3/16" - #L.C. - Minn. Bearing Co.
23.	- Cams, case hardened, 1-1/4" long - 1" high, welded to shaft on opposite sides for every other tine
24.	- 4" channel - 2" webb
25.	- Roller bearings, 1-3/16" - pillow block - #LAK - Minn. Bearing Co.
26.	- 1/4" x 2" brace
27.	- 1/4" x 1-3/4" x 24" - car spring leaf (9 used)
28.	- 1-3/16" cold rolled shaft - speed 400 RPM
29.	- Gas engine - 2 HP - 1500 RPM
30.	- Counter-balance for engine
31.	- Roller Chain - #RC-50 - Minn. Bearing Co.
32.	- Hinged support for slide plate
33.	- 1/2" x 4" x 8" plate - Bearing support and chain adjustment
34.	- Draw-bar to tractor