

# Equipment Parade at Callaway Gardens

By **FRED GALLE**

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Callaway Garden's "A Frame" tree mover is shown here transplanting large Burford Holly.

**E**STABLISHMENT, development, and maintenance of a 2,500 acre garden requires use of many types of equipment. A great deal of horticultural work still must be done by hand, but, with the continual rising of labor costs, we combat this with better equipment and better utilization of equipment.

We have developed several pieces of equipment for our own use and have modified others to enable us to do a better job. We know it is important that all our foremen work together with our maintenance foreman to determine how we can best utilize this equipment and become more mechanized.

A good maintenance foreman is essential, and it is necessary to assure he has proper equipment to do the job; keep spare parts available, and have on hand a good supply of common nuts and bolts, along with replacement units of frequently needed items.

We find that a disc grinder is very important for sharpening tools, axes, and other equipment. We have paint sprayers for painting all our equipment. This keeps all our tools clean and ready to use. We maintain our own wheel balancers for trucks and other vehicles, and also a blade balancer for alignment of mower blades, thus reducing vibration of individual small motors. Also, our maintenance equipment includes a portable steam jenny, which is used during maintenance work and prior to painting.

Proper storage of various tools is important. We try to keep them ready to use at all times. We use racks for holding chain saws, tools, and implements.

Taking care of a 2,500-acre garden has made author Galle more cognizant than ever of the value of proper equipment and the necessity for efficient upkeep. Here he tells other vegetation maintenance professionals some of his "secrets."

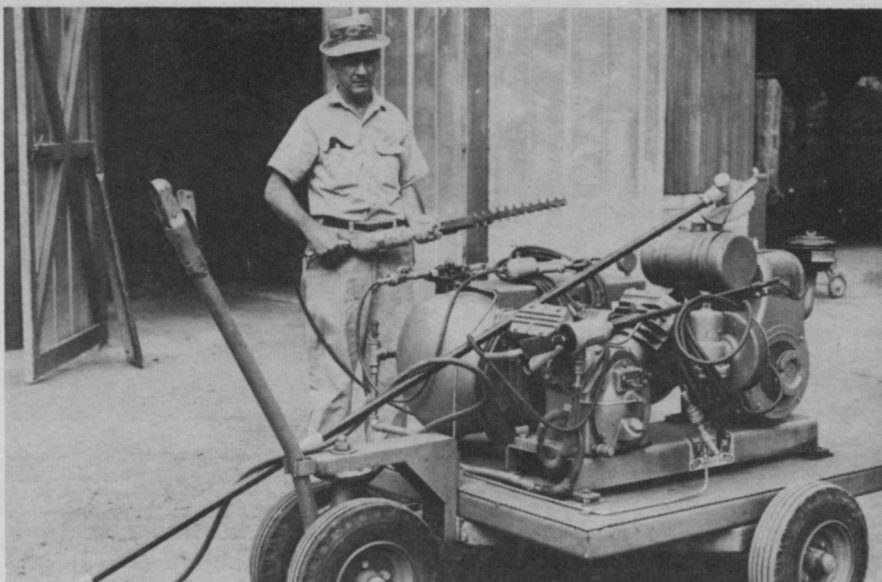
Small hand tools are stored in locked boxes.

In our shop, we also construct our own large wooden signs, which are used on driveways within the gardens. We are presently routing them out of redwood. Our router has a simple attachment for a suction unit to remove dust. We find that a radial arm saw is very good for sign work. For a very inexpensive one we use a laminated sign, consisting of poster board, laminated in Mylar. Signs are prepared on a typewriter equipped with very large characters, or they are sometimes hand printed, and then run through the laminating machine. We use our own machine for engraving laminated plastics for signs and small labels.

One real labor-saving device, which we have used for at least 10 years, is a soil auger. We have augers, varying in diameter from 6 to 24 in. and which, in an average day, can drill 300-400 holes, equivalent of one day's work for a crew of about 20 men. We made an interesting adaptation to this auger several years ago, when we made a blueberry planting. We had to mix organic matter into the soil directly in planting holes. To do this, we made up a simple mixing unit, which, when attached to the auger unit, mixed the peat moss and organic matter with soil already in the hole. This soil mixer has also been used in other planting areas where the basic soil is good and where we only had to add organic matter to the area.

We prepare our own planting soils, usually averaging 300-400 loads of prepared soil each season. Our normal planting schedule includes placing some 10,000 permanent plants each year. We use a front-end loader for soil mixing.

Unfortunately, since we're in an area where very little farm manure is available, we must make our own compost. We use a forage or silage harvester for collecting green material, which can then be composted. We have concrete storage bins where this material is placed for breaking down into organic matter. Each storage bin is 20 x 40 ft. with the



Small tractor unit, sometimes pulled by hand, with pneumatic equipment for pruning.

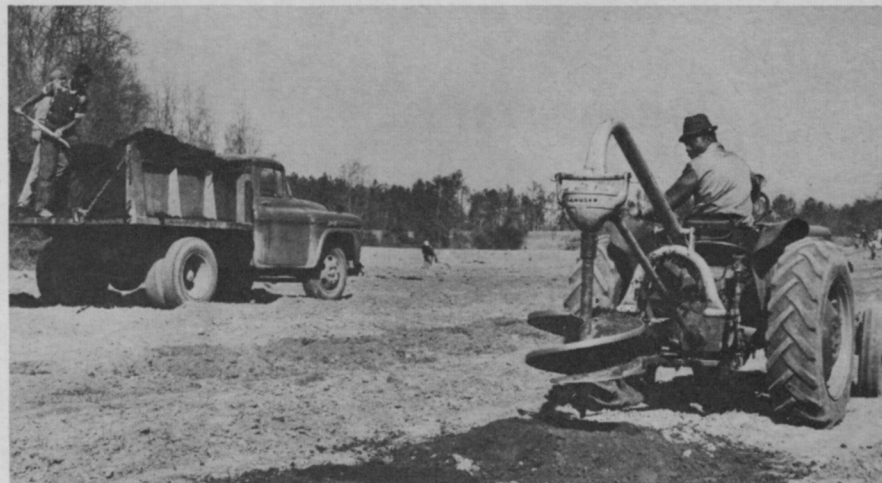


Loader feeds bark through compost grinder.

Howard Rotovator shown here proved excellent for soil preparation. Callaway Gardens has three of them, as well as one tractor unit.



Here's how Callaway Garden's 24-in. soil auger digs holes for new blueberry plantings.





1 1/2-ton truck with 500-gal. tank and small pump for fighting fires, if needed. In winter, Collaway Gardens keeps several 50-gal. drums on hand for similar use with pickup trucks.

side walls 5 ft. high; each bin has internal drainage. The effluent from these bins goes into a large septic tank, where it can be pumped back into compost bins to activate new batches of material.

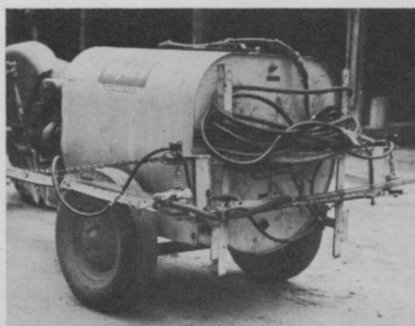
#### Steam Storage Bins

We also sterilize these bins. We use a large 100-hp steam unit, and we lay galvanized pipe which has holes to release the steam, placing these on the bin floor and building the compost pile on top of it.

In many cases, when we plan to mix soil and compost together, we use a Howard Rotavator, a tractor-mounted unit, to mix this material on the apron in front of bins, and then put it into the bins with the loader. We also made our own compost grinding unit. It works much like a ham-

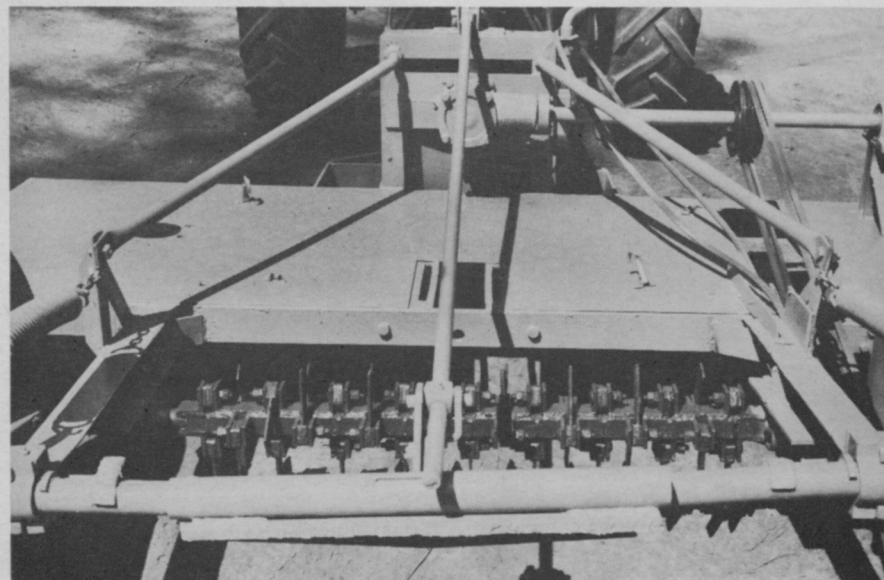
mer mill, but it utilizes the tractor's power take-off (PTO).

Several sizes of screens can be mounted for blocking various



200-gal. power sprayer used for spraying herbicides. Unit has handgun and boom rig.

materials. We can also shred block sod of bermudagrasses to establish new lawns. This machine breaks sod and we can work out stolons for developing new lawn areas. It is a rugged



Hammer knife or verticut mower made from old mower frame. Knives are 3 in. apart and covered with heavy metal shield when in operation. Unit is believed to be one of first made.

piece of equipment and, since it is homemade, we feel that it is very practical and well worth the expense. The unit can also be used for grinding corncobs, and also for grinding pine bark and other coarse material which we can utilize as mulch.

Collecting mulch for our plantings is a major job, as is cleaning up more than 15 miles of drives within the gardens. Over 10 years ago, we devised a leaf-suction machine, using a 12-in. suction hose at its base and a 25-in. heavy industrial fan. This unit is powered by a 20-hp Wisconsin motor. Later, we put in a vacuum trailer unit on the back of this and now we can go back along the drives and pick up leaves. We still use the large hose and small trailer unit in different areas. This is pulled by a dump truck; the bed is enclosed and leaves are drawn into it.

We have a wide range of mowing units, from a 12-ft. rotary mower for large areas, to the small individual 24-in. units. In many areas, where we are cutting near the public, the Mott Mower is one of our more important units. It is a very safe mower to use around people. We have made several small trailers for moving equipment; rear gates drop down to make a runway for mowers.

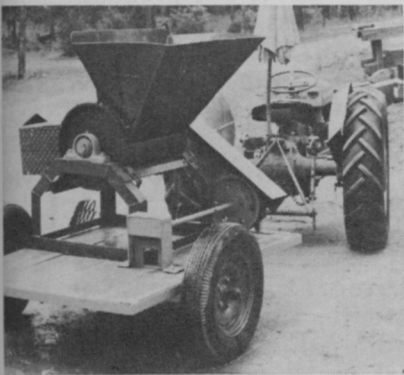
#### Test New Chemicals

We try to keep informed of all new herbicides available to see how they might be used in our operations. Many times, we test and evaluate some materials for chemical companies.

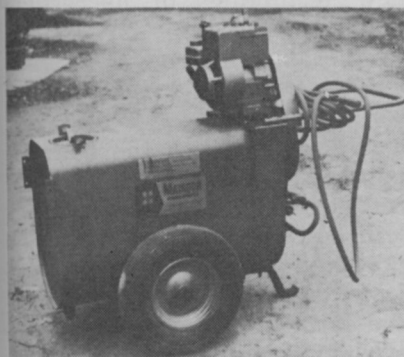
We have two different sets of spraying equipment, one for use with herbicides and one for general insecticides and fungicides. All spray equipment used for herbicides is marked as such, so these units are not used for general insecticides and fungicides. We also have a back-pack duster and mist unit, as well as a large mist blower.

Summer irrigation can be a major problem. We have several portable pumps we can move to our many lakes for irrigation. Many pumps we use operate on LP gas and others are operated

from the PTO of a tractor. Pipe trailers for hauling irrigation equipment are necessary for getting equipment to the area. We have nearly two miles of irrigation pipe, consisting of 2-to-6-in. sizes. Various adapters are needed so pipe sizes can be assembled. We found that a tensiometer is a great aid in measuring irrigation require-



**Homemade** compost grinder powered from PTO on tractor. Garden workers add large hood when moving loads with a front end loader.



15-gal. sprayer used in planting beds.



Garden's back pack mist blower or mister.

ments. Small porcelain Bouyoucos units are buried to a depth at which we wish to read soil moisture, and they become permanent installations. Small battery units are placed on cables attached to underground units, and a reading is obtained for soil moisture needs.

A few years ago, we began using pneumatic pruning equipment. We have a small trailer unit, which we pull by a vehicle or by hand along trails where we can use pruning shears or saws. We made two modifications on our hedge shears for a special pruning job in a grape vineyard. We shortened the blade, and with two units running, we reduced time involved in pruning a 25-acre muscadine vineyard to one-third the time normally needed to prune by hand.

#### Buy Latest Literature

Office equipment is also necessary for our operation. We have proper storage of catalogs and equipment literature. It is vital that we refer to these files continuously. Also, we try to keep up with the latest publications. Unfortunately, there are many books of little value, and we must evaluate them before buying. After purchasing, we see that they are read by various people within the organization, rather than just occupying space on a shelf.

Storage of photographic slides is a major problem with us. We found that Multiflex cabinets are very good. We do not number slides, but file them under subject matter. It is very simple to pull slides and assemble them into groups for slide presentations.

We are continually on the alert for new and better equipment and for a re-evaluation of our own equipment to see how it is holding up, and to see if there can be some adaptations or modifications to make it more useful.

We have also had good cooperation with major equipment companies. This we feel is very important, for a source of equipment and parts is very essential. With this cooperation we have been able to do a better job throughout our operations.



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