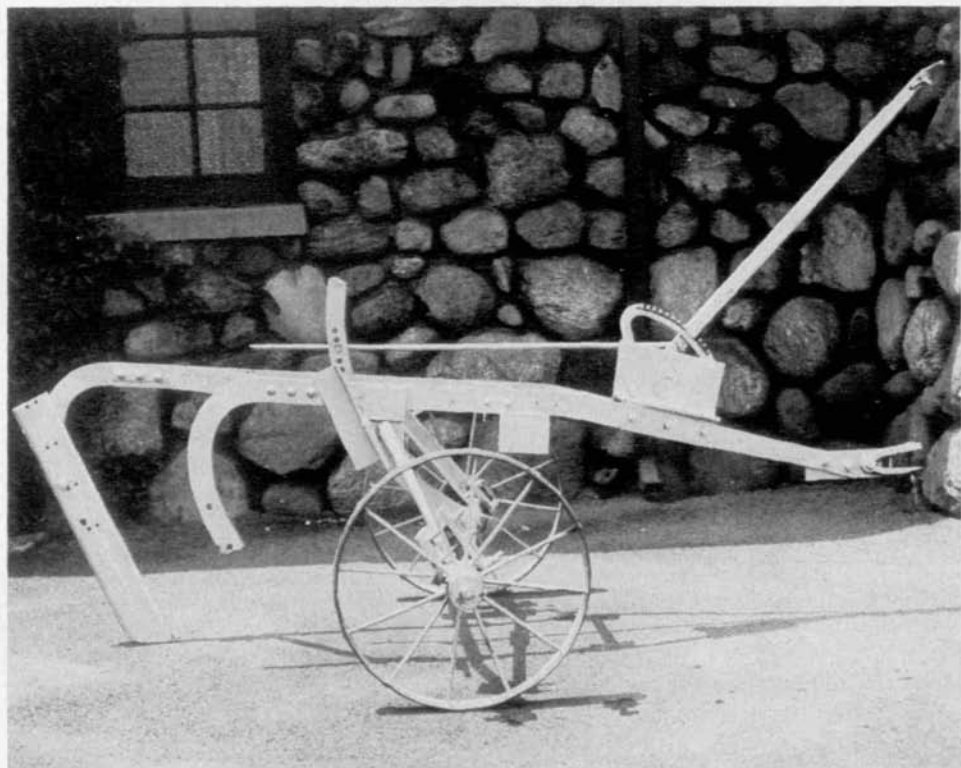


TREE ROOT PRUNER



Any club that has a tractor plow, either of the pull-around or of the three-point suspension type, can make its own root pruner with very little expense. All that is required is a blade to be bolted on in place of one of the plow shares. The blade must be long enough to be bolted to the plow beam and extend 16 inches below the lower tip of the beam. By using this plan, only the blade itself is in the ground. The slot made is very narrow, and the damage to be repaired is very slight. The blade can be made from a piece of chilled steel, but very satisfactory ones have been made out of old gang mower bed-knives. The Blue Hill Golf Club, in Orangeburg, N. Y., uses them in sets of four, welded together as shown in the photograph, and grinds or burns the heel off before bolting them in place. The drilling of the bolt holes is a job for a well-equipped machine shop.

QUESTIONS AND ANSWERS

Question: It seems to me that most soils men from our State Colleges leave the impression that soil testing is a waste of time. What is the Green Section's stand on this?

Answer: Perhaps you have misunder-

A few small items are of importance, M. Montgomery Maze, President of the Blue Hills Club, points out. Installation at the angle shown is necessary to make the unit pull down into the ground. Soft iron bolts should be used to fasten the blade to the plow beam. These bolts will break or pull out in case unusual difficulties are encountered. The blade should be pulled in straight lines, although it will cut successfully in curved lines whenever necessary.

Very low speed and a reasonably heavy farm tractor help materially. Blue Hill has successfully cut roots of more than three inches in diameter and dragged up others still heavier for hand cutting at the surface of the ground. A tractor operator with one helper and this tool can, in one day, in soil reasonably free of large stones, easily prune around all the tees and greens on an 18-hole course.

stood the meaning of men from the State Colleges who have commented on soil testing. Certainly, soil testing is not a waste of time, though it is subject to many faults in the way of interpretation of tests. The Green Section recommends periodic soil testing because it is believed that this is

desirable in keeping up with the needs of your turf.

Question: How accurate are soil tests? Are the rapid tests sufficiently accurate, and what are the difficulties as far as accuracy is concerned?

Answer: Laboratory soil tests are quite accurate and even rapid soil tests are accurate enough to give good indications of soil nutrient status. However, all of the tests depend upon the use of an extraction agent for determining the amounts of the various nutrient elements available for plant growth. These extraction solutions are supposed to extract the same amount of nutrients that are available to the growing plants. Naturally, these extracting agents never have exactly the same "extracting ability" as the plants. Therefore, the soil tests must be coupled with long experience and correct interpretation before we can place complete reliability in them.

Question: I've been told that the test for nitrogen is of no real value. Is this true and, if so, why?

Answer: The tests for nitrogen are of questionable value. This does not come from the difficulty in measuring the amount of available nitrogen present, but from the fact that the soil will change from day to day. Much of the nitrogen in the soil is contained in an organic form, or in a form not available to plants. Nitrification proceeds in the soil as a result of bacterial activity and therefore more nitrogen is becoming available all the time. Ordinarily plants will use this nitrogen as it becomes available or it will leach out of the soil. If you sample the soil on any given day you might find a relatively small amount of available nitrogen present. However, if you took a sample of that soil and stored it for two days you may find considerably more nitrogen present. If the soil were stored in a can for a week in a warm place where nitrification could proceed, you would find much more nitrogen in the soil. Therefore, the figures for available nitro-



Sherwood A. Moore, superintendent of the Hollywood Golf Club, Deal, N. J., makes good use of discarded herbicide drum in forming catch basins for fairway drainage lines.

gen do not give a real indication of the nitrogen present and it is quite easy to see when turf is in need of nitrogen. It will be pale green in color and will grow rather slowly when nitrogen is low. On the other hand, when sufficient nitrogen is present, it will grow rapidly enough to require frequent clipping and the color will be good.

Question: If nitrogen cannot be tested for accuracy, how can phosphorus and potassium be so tested? They're all elements.

Answer: Phosphorus and potassium are generally present in the soil in a different state than is nitrogen. A large part of the nitrogen in a soil is present in an organic form, whereas in most soils phosphorus and potassium are present in mineral form. Phosphorus and potassium do not depend completely on a process of bacterial activity to become available; therefore, the phosphorus and potassium status of a soil does not change nearly so rapidly as does nitrogen.