

is important. Our problem has been to find simple, practical methods of freeing soil in considerable quantities from nematodes and some of the more common destructive fungi and related organisms. We have had the further problem of doing this work in such fashion that the chemical, physical, and biological properties of the soil would be disturbed as little as possible. Many of the new plant introductions brought in by the Office of Foreign Seed and Plant Introduction must be grown in quarantine. Many others are grown at our field stations for distributing to collaborators and others, and in all cases we endeavor to free the soil of any enemies that might prove dangerous to other sections of the country. While the appliances and methods described are designed primarily to meet our own needs, they have been developed with the idea of aiding others, especially experiment station workers and our collaborators. In the course of our work we have used some of the special devices designed for soil sterilization. We have not found them entirely satisfactory. Aside from their first cost, which is considerable, there are other factors, such as the ease of handling the soil, and more important than all, the effects on the soil itself. Some of the devices may render the soil practically unfit for the growing of plants. They often puddle the soil and may greatly change its physical and biological properties.

It will suffice to describe briefly the appliances, and then by means of photographic reproductions accompanied by short specifications, anyone with a little mechanical ingenuity should be able to make them or have them made.

1. **The Cabinet Method.** (Pl. 317.) The apparatus used is a simple, tight wooden box made on the order of a cabinet. It is designed for use where low pressure steam is available, such as is used in greenhouse or dwelling house heating. The box is filled with drawers which slide on wooden cleats screwed or nailed to the inside of the box. The size of the box or cabinet must be made to accommodate the number of drawers to be used. Any number of these cabinets may be constructed, the number depending on the quantity of soil it is desired to treat. The cabinet illustrated in Figure 1 holds ten drawers, each drawer having a capacity of one-half bushel of soil. Five bushels of soil may, therefore, be heated at one time. We take our steam for this cabinet from one of the greenhouse flow pipes. A one-inch connection is made to the flow pipe, to which is attached a one-inch globe valve. A nipple and reducer provide an attachment for a piece of ordinary three-quarter inch garden hose. After the drawers are filled with soil they are placed in the cabinet and the doors are closed and securely fastened. The steam is introduced by means of the hose through a hole in the bottom of the cabinet. The condensation is collected in a pan or it may simply be allowed to leak out at the