tried at home. The pupil can thus make the drawings for the notebook at home. A daily record of measurements of the change in size of the various parts of the seedling should also be made.

**24.** *Seed-testing.*—It is important that one know before planting whether seeds are good, or able to grow. A simple seed-tester may be made of two plates, one inverted over the other (Fig. 31). The lower plate is nearly filled with clean sand, which is covered with cheese cloth or blotting paper on which the seeds are placed. Canton flannel is sometimes used in place of sand and blotting paper. The seeds are then covered with another blotter or piece of cloth, and water is applied until the sand and papers are saturated. Cover with the second plate. Set the plates where they will have about the temperature that the given seeds would require out of doors, or perhaps a slightly higher temperature. Place 100 or more grains of clover, corn, wheat, oats, rye, rice, buckwheat, or other seeds in the tester, and keep record of the number that sprout. The result will give a percentage measure of the ability of the seeds to grow. Note whether all the seeds sprout with equal vigor and rapidity. Most seeds will sprout in a week or less. Usually such a tester must have fresh sand and paper after every test, for mold fungi are likely to breed in it. If canton flannel is used, it may be boiled. If possible, the seeds should not touch each other.

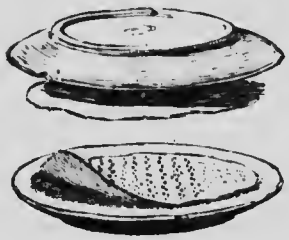

FIG. 31.—A HOME-MADE SEED-TESTER.

NOTE TO TEACHER.—With the study of germination, the pupil will need to begin dissecting.

**For dissecting**, one needs a lens for the examination of the smaller parts of plants and animals. It is best to have the lens mounted on a frame, so that the pupil has both hands free for pulling the part in pieces. An ordinary pocket lens may be mounted on a wire in a block, as in Fig. A. A cork is slipped on the top of the wire to avoid injury to the face. The pupil should be provided with two dissecting needles (Fig. B), made by securing an ordinary needle in a pencil-like stick. Another convenient arrangement is shown in Fig. C. A small tin dish is used for the base. Into this a stiff wire standard is soldered. The dish is filled with solder, to make it heavy and firm. Into a cork slipped on the standard, a cross wire is inserted, holding on the end a jeweler's glass. The lens can be moved up and down and sidewise. This outfit can be made for about seventy-five cents. Fig. D shows a convenient hand-rest or dissecting-stand to be