A REEL-TYPE ELECTRIC PROBE FOR MEASURING WATER TABLE ELEVATIONS

In the course of drainage research at Iowa State College, many hundreds of measurements of the water table are required. Piezometers consisting of 3/8-inch perforated iron pipes were driven into the ground in tile-drained fields with either 2 or 6 inches of the piezometer extending above the surface of the ground. A probe or water elevation measuring device was needed that satisfied the following requirements: (1) would give the largest number of readings in the shortest time; (2) could be used without stooping; (3) was sturdy to stand up under rough field usage by untrained personnel; and (4) was inexpensive to construct. The probe described below was found to satisfy these requirements.

Fig. 1 shows a general over-all view of the fishing reel (Oreno No. 1165) is mounted on a square of plywood. A block of wood raises the reel off of the plywood to allow easy operation of the handle. A length of graduated radio test lead wire is wound on the reel and one end of the wire is soldered to the reel. The other end of the wire is weighted by an insulated brass sleeve that is coated with Tygon paint. A D.C. milliammeter (Shurite, 0-5 ma) and a notebook complete the upper side of the plywood square.