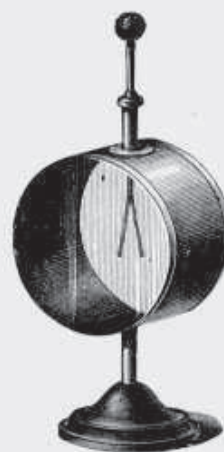


4988.



4976.

4970. **Condensing plates** for above 70 mm in diameter. [Fig. 1/5 nat. size, p. 163.] \$ 1,25

These consist of two brass plates ground on one another, the upper of which is provided with an insulating handle and the lower can be screwed on to the electroscope instead of the ball. Amber insulation. The inner faces are covered with a thin coating of shellac, so that they are separated from one another, the outer faces are not lacquered but must be metallic. In order not to destroy the shellac coating the plates should not be rubbed on one another. After having proved that the condenser keeps its charge, and that it returns to its original condition on touching with the finger, the under plate is touched by a piece of zinc, whilst the upper is touched with the finger. After contact has lasted for some time, the finger is removed from the upper, the zinc from the lower plate and the upper plate lifted off by the handle. A distinct divergence of the gold leaves is observed. The electricity produced by the contact of the brass condenser plate and the zinc is negative. On presenting a rubbed glass rod from above to the electroscope, the leaves collapse. If a piece of brass be used instead of the zinc in the experiment, no excited charge is produced.

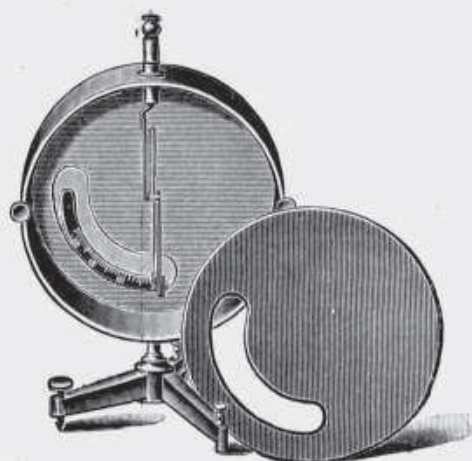
4976. **Beetz's leaf electroscope**, also suitable for projection. (W. D. Fig. 405, p. 598.) [Fig. 1/5 nat. size.] » 6,50

4988. **Dolezalek and Nernst's quadrant electrometer**. Very sensitive and of small capacity. The charge is conducted to the needle by a quartz fibre. Amber insulation. [Fig. 1/5 nat. size.] No water battery is necessary with this electrometer. Sensitiveness: 30 mm deflection for 1 m scale distance = 0,01 volt » 60,00

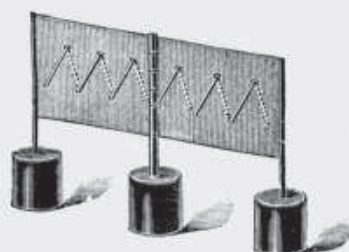
In order to make the quartz thread and the fixed on hook conducting, it is suspended from the eye of the torsion head with the aid of forceps, and immersed first in 10% caustic potash solution up to the sealing wax joint, after ten minutes, it is dipped several times in water, finally in 10–20% calcium chloride solution. In order to prove that the fibre is now a good conductor, the torsion head is fixed in a wooden stand, the lower end touching an aluminium leaf electroscope, and present to the torsion head a rubbed rod of sealing wax, or the like; the electroscope must show a deflection immediately.

To charge the pile the simplest method is to use an electric light wire, one pole of which is connected with the torsion head, the other with the metallic casing. It may however be charged by any other source of current of 50–200 volts.

Absolute Electrometer, Braun's. (Ann. d. Phys. 44, p. 771, 1891; W. & Eb., Phys. Prakt. Fig. 257, p. 381.) This electrometer is a convenient substitute for the leaf electroscope, and has the advantage, in addition that it is possible to measure accurately



4990/4993.



5011 A.



5011 B.



5011 C.

up to 10 volts. The scale is carefully graduated. [Fig. $\frac{1}{6}$ nat. size; the form pictured frequently in the text books is out of date, and no more will be supplied.] For lecture experiments on frictional electricity, induction capacity of a condensör, alteration of the capacity by inserting dielectrics etc. electrometers No. 4990 and 4991 are sufficient. The electrometers No. 4992 and 4993 serve for the illustration of Ohm's Law; one of the instruments No. 4990 and 4991 serve in that case as a discharge electrometer. In most cases, No. 4991 and 4993 are sufficient. The instruments are placed on a horizontal base.

No.	4990.	4991.	4992.	4993.
up to	1500	1500	3500	3500 volt
graduated	100×100	500×500	100×100	500×500
\$	13,00	9,50	14,00	11,00

If they are absolutely neutral (free from residual electricity) the needle should be at zero. In this position friction is most felt, a small deviation either to the left or right is accordingly without significance. For purposes of measurement the case is enclosed as far as possible by metal; a zinc cover provided with aperture for reading being inserted beneath the glass front. The needle is allowed to swing freely, without tapping, to prevent alteration of the position of the needle relatively to the repelling metal strip. For lecture purposes the glass plate alone remains in the instrument and it is placed so that the light falls from behind. The pointer is seen best when the glass plate at back is covered with tissue paper. This is most easily done by taking a piece of tissue paper somewhat larger than the glass plate, laying it on and after removal of the screw heads, pressing it into the case and the excess of paper being cut away. At night a lamp is placed behind the instrument. The deflection is plainly seen throughout a room seated for 100 auditors.

5011. **Seat of electricity on the surface**, Vandervliet's apparatus as modified by Rosenberg. (W. D., p. 607.) This apparatus consists of a fine iron wire netting (42×17 cm) which is supported at the middle and at both ends by good insulating