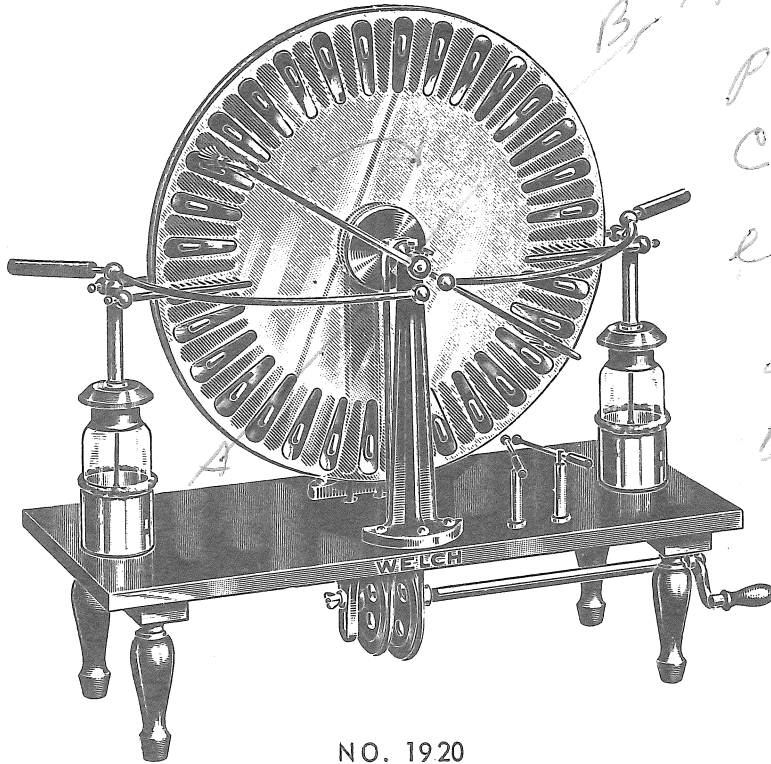


INSTRUCTIONS FOR THE USE OF
NO. 1920 WIMSHURST MACHINE



NO. 1920

DIRECTIONS FOR SETTING UP AND OPERATING

Care should be taken in unpacking, so that none of the parts of the machine are bent or broken. The glass plates are packed in a separate box in the bottom of the case. Remove these very carefully, wipe off all dust and set aside until you are ready to place them in position.

1. Remove the handle from its fastenings and fasten it securely in position for operation.
2. Loosen the screws which hold the main shaft in position and slip this shaft out of its bearings, catching the two hubs as the shaft is withdrawn. Unscrew the fiber disc on each hub, place a glass plate on the hub with the metal sectors facing the pulley side, and screw the fiber disc tightly in place. Holding these two plates in position with the belts on the pulleys (one should be twisted and the other straight) push the shaft through the bearings and through the hubs and tighten the set screws. Turning the handle should now rotate the plates smoothly and in opposite directions.

W. M. WELCH SCIENTIFIC COMPANY

1515 SEDGWICK STREET CHICAGO 10, ILLINOIS, U. S. A.

INSTRUCTIONS FOR THE USE OF
NO. 1920 WIMSHURST MACHINE

Page 2

3. Untie the strings holding the discharging rods in place. By means of the rubber handles at the right and left of the machine move the discharging rods so that the nickel-plated balls on their ends are one or two inches apart.

4. The two pairs of collecting combs at either side of the machine and fastened to the pillars at the top of the Leyden jar should now be loosened from the pillar by means of the screws holding them in place. Adjust these combs to horizontal position with points about one-eighth of an inch from the metal sectors on the revolving glass plates. In making this adjustment, revolve the discs with the hand slowly, making sure that the combs do not scrape the plates or the small sectors. The Leyden jar can be moved to facilitate this adjustment.

5. The diagonal rods should now be adjusted so that they incline at an angle of about 60° with a perpendicular. The one on the side of the machine nearest the observer should be inclined from upper left to lower right and the one on the opposite side of the plates should be inclined in the opposite direction and about at right angles to the first one.

6. Open the spark gap between the two discharging rods.

7. IN OPERATION, TURN SLOWLY AT FIRST, MAKING SURE THAT ALL PARTS ARE IN PERFECT ADJUSTMENT BEFORE THE MACHINE IS SPEEDED UP. ONE DRIVING BELT MUST BE TWISTED SO THAT THE DISCS ROTATE IN OPPOSITE DIRECTIONS.

8. The knobs at the base of the machine are for connecting or disconnecting the Leyden jars.

CARE OF THE MACHINE

Immediately upon turning the machine it should start generating. This will be first indicated by a sizzling sound and then a spark will pass between the terminals if they are not too far apart. In case the machine does not generate readily, take a friction rod and put a charge on it by friction, rubbing this charge on any part of the machine. Indeed, it is not even necessary to touch the machine. Simply holding it on one side near one of the plates while the plates are rotated is sufficient to start the operation.

W. M. WELCH SCIENTIFIC COMPANY
1515 SEDGWICK STREET CHICAGO 10, ILLINOIS, U. S. A.

INSTRUCTIONS FOR THE USE OF
NO. 1920 WIMSHURST MACHINE

Page 3

This model of Wimshurst Machine, will operate successfully in all kinds of weather. Of course, the best condition for operation is a cool dry atmosphere but to get this machine to operate it should be kept in the best condition. It should be kept dry, clean, and free from all dust or dirt particles. The machine may be rubbed with a dry warm chamois skin or a very soft cloth. Keep moisture away from the surfaces. Never rub with a moist cloth, and never apply oil of any kind to the glass discs.

CAUTION - If the machine fails to work, try the following: Rub the glass plates slightly with a bit of moist cotton to remove any film or dirt adhering to the glass and dry them thoroughly with a blast of warm air, if possible.

Do not have the neutralizing rods which carry the tinsel brushes bearing too heavily on the metal sectors. Be sure that the tinsel brushes touch the metal sectors but do not allow them to be set so close as to rub on the glass plates as well as the metal sectors.

Take some sharp scissors and clip the tips of the metal brushes so as to make sure that no oxide is preventing good contact. Then inspect the machine particularly the Leyden jars, to make sure that none of them have been cracked in shipment. You can test these if the machine gives any reaction at all, by rotating the plates up to a point just before the discharge, then taking a regular discharge rod and seeing if the Leyden jars contain a charge, as will be evidenced by a spark. See to it that the brush arms are so mounted on the central shaft that the brushes follow the combs in the direction of rotation.

When the knobs of the discharging rods become corroded they should be polished. Corroded knobs will not give as intense a spark as polished knobs.

W. M. WELCH SCIENTIFIC COMPANY
1515 SEDGWICK STREET CHICAGO 10, ILLINOIS, U. S. A.