(No Model.)

E. GUERIN.

ELECTRICAL MACHINE.

No. 266,467. Patented Oct. 24, 1882.

Fig. 1,

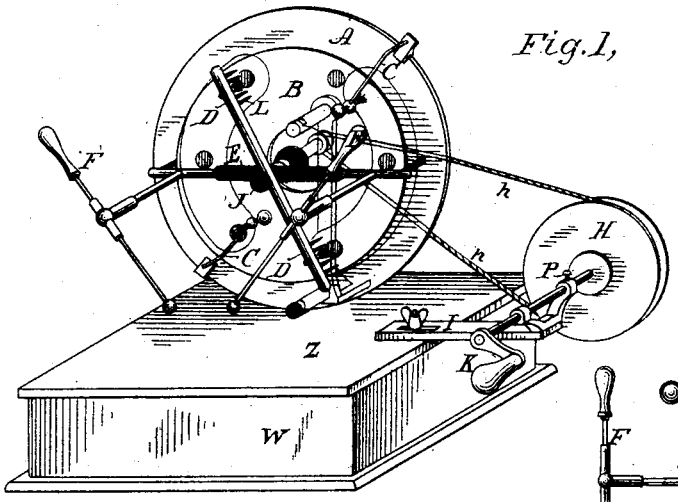


Fig. 2,

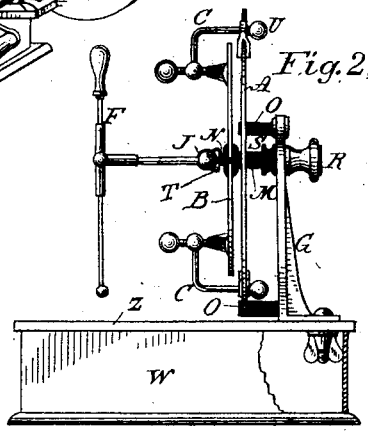


Fig. 3,

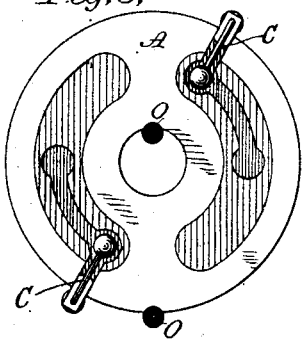


Fig. 4,

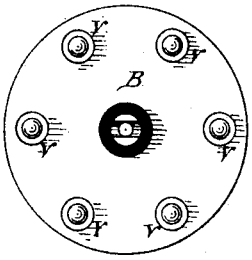


Fig. 5,

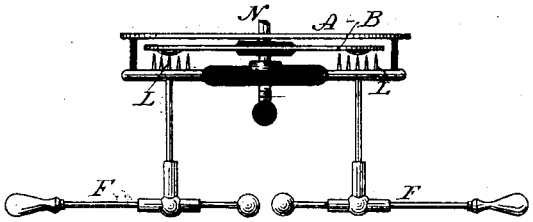
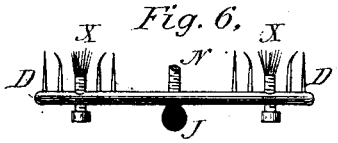


Fig. 6,



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ELECTRICAL MACHINE.

SPECIFICATION forming part of Letters Patent No. 266,467, dated October 24, 1882.

Application filed April 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, EMILE GUERIN, of Paris, Republic of France, have invented new and useful Improvements in Electrical Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to so modify and improve the "Holtz" machine as that, without its utility being impaired, it may be mounted and operated upon the lid of the box which contains all the parts of the machine when dismounted and separated.

To this end the invention consists of several details of construction, which will be fully described, and pointed out in the several claims.

In the drawings, Figure 1 is a perspective view of the machine mounted upon the lid of the box ready for operation. Fig. 2 is a side elevation of the same, partly broken away. Fig. 3 is a plan view of the large fixed glass disk. Fig. 4 is a plan view of the rotary glass disk. Fig. 5 is a view from above of the fixed disk, the rotary wheel, and the dischargers. Fig. 6 is a view of the arm that carries the brushes and combs.

In the various figures, A is the large fixed glass wheel or disk. B is the rotary glass disk with six buttons. C C are the brush-carriers; D, the comb-shaped receivers; E, the condenser or "Leyden jar," as it is termed in the Holtz machine. F F are the dischargers. G is the upright support for the wheels. H is the pulley carrying the band *h*. K is the pulley-crank; I, the support for attaching the pulley-journals to the lid of the box. J is a hard-rubber ball or nut that confines the comb-carrying arms D. L L are the so-called "neutralizing-points." M, Fig. 2, is the sleeve upon which the glass wheel is mounted. N is the shaft passing through the sleeve M, and itself supported in the upright G. O O are hard-rubber pieces that support the wheel A, themselves affixed to the upright G. P is a set-screw, the end of which enters a groove in the pulley-shaft and keeps it in position. R is a set-screw to confine the wheel-supports in the upright G. S is a pulley connected with pulley H by a band, *h*. T is a copper washer that confines the sleeve M on the shaft N. U is a set-screw in the shape of a ball, that secures the exciter-brushes C upon the fixed glass disk. V V are the six buttons on the rotary disk B. X X are brush-exciters and so-called "neutralizers." W is the box for containing the entire machine when dismounted, and Z the lid of the box, upon which the entire machine may be mounted and operated.

As the Holtz machine is a well-known standard machine in general use for obtaining frictional electricity in the class and lecture room, its operation need not be described in detail.

The present invention produces no new results in the way of obtaining electricity, and in no way essentially differs in its operation from the Holtz machine.

The main parts of this improved device do not greatly differ from the same parts of the Holtz machine, but are so modified and arranged that all of the parts are removably attached to the lid of the containing-box.

This present invention enables one to dispense with the table upon which the Holtz machine is immovably fixed, and also enables the lecturer or professor to easily dismount and carry his machine from place to place.

In the Holtz machine the large fixed disk is mounted upon no less than four upright sustaining parts that are immovably attached to a small table or platform, the journals and supporting-shafts extending from post to post. In mounting the present improved machine a single upright or post, G, is secured upon the cover of the containing-box in a slot arranged to receive its foot, and is retained in place by a small thumb-nut upon the under side. This upright G has permanently attached to it two hard-rubber shafts, O O, or studs, each having a notch or recess in which rest the edges of the plate or disk A, as seen in Fig. 3. Through a hole in G is passed the shaft N, and upon this is slipped the sleeve M, that carries the small pulley N, the thumb-nut R holding it in place. The band *h* is passed over the pulley S, and thence over the larger pulley H, mounted upon its shaft in journals carried by a frame slotted at one end and secured by a thumb-nut and bolt in a hole in the box-lid. Whenever the pulley-band *h* requires greater or less tension, it will be seen that it can be easily adjusted by

loosening the thumb-nut and pushing the frame I nearer to or farther from the box. After these parts are mounted the rotating disk B is placed on the shaft of pulley S. The two arms that carry brushes and combs and the dischargers F F, with their handles, are then slipped over the shafts N, resting in a grooved washer, T. The brush-exciters C are then mounted on the fixed glass disk A and secured by the spherical nuts U. It will be thus seen that the entire machine is easily and rapidly mounted upon the box-lid at two points only.

Having thus described my invention, what I claim as new is—

1. In combination with the properly-recessed lid of the containing-box, the upright supporting-frame G, secured at its base by a bolt and thumb-screw, and carrying upon proper supports both the fixed and rotating glass disks and frame-pulley S, all as and for purpose described.

2. The combination of the upright G with two projecting recessed or grooved shafts, O O, in which recesses are secured the edges of the fixed glass disk A, all as and for the purpose described.

3. The combination, with the upright G, of the shaft N, secured therein by the thumb-nut R, and carrying the sleeve M, pulley S, and grooved washer T, in which rests the comb, and also the handle carrying bars, all as and for the purposes set forth.

4. The combination of the upright G, the shaft N, with its sleeve M, the grooved washer, the comb-arm and arms with handled dischargers, the arms O O, extending at right angles to the upright arm, and the disks A and B, the arrangement being as set forth, whereby all these parts are supported upon a single base attached to the lid of the containing-box.

5. The combination of the bent brush-arms C, carrying at one end a brush adjustable to and from the rotary disk B by a screw-threaded shank, and secured at its other by a clamp and set-screw to the fixed disk A, as and for the purposes set forth.

6. The combination, with the properly-recessed lid of the containing-box W, of an upright secured by a bolt and thumb-nut thereto, and serving to mount the fixed and rotary disks, the comb and brush arms, discharge-arms and pulley, and of a pulley and shaft journaled in the arms of a slotted base adjustably secured for tightening and loosening the pulley-band, the arrangement being substantially as described, whereby all the working parts of a frictional generator of electricity are mounted at two points upon the lid of a box for containing them, thus dispensing with the usual table, all as and for the purposes set forth.

In testimony whereof I have hereunto set my hand.

EMILE GUERIN.

Witnesses:

ROBT. M. HOOPER,

DAVID T. S. FULLER.