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CONTACT FOR VIBRATORS

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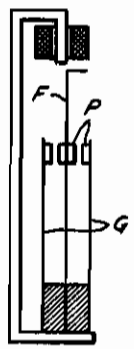

Fig. 1

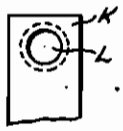

Fig. 2a

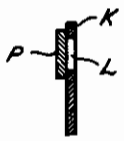

Fig. 2b

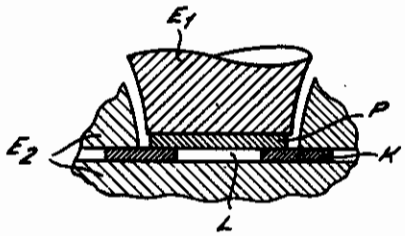

Fig. 3

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ALIEN PROPERTY CUSTODIAN

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A number of methods have been disclosed in the prior art to secure in vibratory inverters or rectifiers the contact platelets (P) of disk-shape and consisting of a special material such as tungsten on their metallic supports in the form of the vibratory springs F (Fig. 1) and the rigid or elastic abutments or stops G.

According to prior practice it was usual to either rivet the contact plates or else to solder or weld them fast on their supports. No really firm securing is feasible in the first-named method and the contact resistance between the contact plates and the contact support is mostly undesirably high. Another drawback is that the contact support is often bent in the work of fastening the contact thereon. As a result the contact surface is not even.

While soldering will insure a lower contact resistance than that which obtains in riveting, and while the fastening will be firmer, it is unavoidable that the contact support as a whole becomes very hot while the work of soldering proceeds. The result is that also undesirable changes happen in the contact support, especially when it consists of a spring blade. Another drawback is that the solder frequently enlarges the contact carrier to an undesirable extent.

According to another method the contact plates, after having been soldered fast upon a distinct support, were welded fast upon the contact carrier together with the latter. It has been discovered in practice, however, that the welding between the said support and the surface of the contact carrier will mostly be produced only at one or at a limited number of points. As a consequence, the contact resistance turns out to be comparatively high also in this fastening method. The weld will often be at some point about the center and at some other marginal point with the result that at diametrically opposite points of the circumference the contact plate will fail to bear snugly upon its support or carrier and that thus its working or active surface is not in a plane parallel position in relation to the surface of the contact carrier.

According to the present invention, the contact support or carrier at the junction point with the contact platelet has a hole concentric in reference to the plate, the said hole being slightly smaller than the plate itself. As a result the plate is substantially welded fast to its support only about its circumference.

The advantage offered by the invention is that really safe and secure parallel plane bearing and welding is feasible at the marginal or circumferential points. The working surface of the contact thus will be in practically perfectly parallel plane position in respect to the contact support. The securing is absolutely dependable and the contact resistance very low. Inasmuch as it is possible to weld the contact fast without any intermediary support, and since a hole is punched in the contact carrier, the mass or volume of the finished contact is very reduced. Since when making a weld the bearing surface or area is comparatively reduced (concentration of welding energy) the total welding power can be kept within very small limits. The heating of the contact carrier as a whole may therefore be practically disregarded.

An exemplified embodiment of the invention is shown in Fig. 2*a* as applied to a press contact of a vibratory inverter or chopper. Fig. 2*a* is a rear view, Fig. 2*b* a cross-section. K represents the elastic contact carrier which corresponds, for instance, to the abutment or stop G shown in Fig. 1, and into which a circular hole has been punched. The diameter of this hole is slightly smaller than the diameter of the disk-shaped contact plate consisting of tungsten.

Fig. 3 illustrates the way a contact is made. E1 is one of the welding electrodes whereby the platelet P placed concentrically over the hole of the contact carrier K is pressed upon the contact carrier, while the second electrode E2 grips the contact carrier from both sides. While the spot welding operation proceeds, the resistance at the welding point is increased and it is only the marginal zone of the contact platelet which is safely and firmly brought to bear that insures a satisfactory weld all about the entire circumference, so that a planar contact surface will be obtained. If desired, one of the electrodes may be designed so as to act as a cooling electrode.

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