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ADJUSTMENT FOR INDUCTANCES OF VARIOMETERS.

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My invention relates to variometers and particularly to improvement in wave length control for different settings of the variometer.

5 The main purpose of my invention is to provide a novel form of variometer well adapted to the needs of service and easy and inexpensive to manufacture.

10 A further purpose is to balance the coils of the rotor quantitatively with respect to the coils of the stator, maintaining equal self-inductions in both whatever the adjustment with respect to the quantity of induction.

15 A further purpose is to have every coil of the rotor and every coil of the stator balanced electrically with respect to every other coil of the variometer by dividing each coil so as to always lie substantially symmetrically with respect to the same point in the rotor axis, a point forming a common center of symmetry for all windings.

20 A further purpose is to provide an interlinkage of switch members whereby the number of coils in the rotor and stator, separately adjustable if desired, may be adjustable together in such manner as to maintain a predetermined relation between the numbers of coils simultaneously in circuit on the rotor and on the stator:—or in other words that the number of turns in the rotor and the stator respectively may be increased or reduced together to maintain a condition of numerical balance or numerical relation between them.

25 A further purpose is to make it possible to accommodate a variometer to lower ranges of wave length than previously without losing its utility for higher wave lengths.

30 A further purpose is to increase the delicacy of adjustment of the variometer.

35 My invention relates to the processes involved as well as to apparatus shown by which the processes may be carried out.

Further purposes will appear in the specification and in the claims.

40 Figure 1 is a front elevation of a desirable panel providing adjustment of my preferred construction.

Figure 2 is a section of Figure 1 upon line 2—2, the winding being omitted.

45 Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a diagrammatic illustration of the preferred form of my invention.

Figure 5 is a diagrammatic illustration

55 showing the winding whereby my invention may be carried out using any switch preferably the one shown in Figures 1 and 4.

Figure 5^a is a fragmentary view, a part of Figure 5 but with a minor modification.

60 Figure 6 is a front elevation showing another form of switch, providing if desired, an independent adjustment of the coils of the stator and of the rotor.

65 Figure 7 is a front elevation of a third form of switch, also providing an optional independent adjustment of the rotor and stator coils.

Figure 8 is a section of Figure 7 taken upon the line 8—8.

70 Variometers for the purpose of adjusting inductances in radio circuits are of course well known. The rotor is ordinarily given rotation adjustment throughout a range of 180° between the positions for maximum and minimum inductances respectively.

75 In the position for maximum inductance the rotor coils are in such position that the mutual inductance between the rotor and stator is most effective toward increasing the total inductance of the variometer, while at the other end of the range the mutual inductance is in position to be most effective to decrease total inductance.

80 In the prior art variometers have been set to different ranges of inductance for variation by the position of the rotor by adjusting the turns of one element to include a larger or smaller number of turns within the active coil length, but so far as I am aware this adjustment in the number of effective turns has never been simultaneous to both stator and rotor.

85 My invention comprises provision for simultaneous adjustment of the effective turns on both stator and rotor, with an adaptation to alternative independent adjustment of the effective turns of each; provision for maintaining electrical balance between each coil unit of the variometer with every other coil of the variometer; and provision for maintaining throughout the simultaneous adjustment equal inductions in the rotor and stator whereby the rotor and stator are adapted to most nearly neutralize each other when in direct opposition, thereby bringing the lower limits for the different settings most nearly to zero.

90 The alternative independent adjustments

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TRAFFIC SIGNAL.

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My invention relates to the handling of vehicle traffic by the display of suitable signs and markings indicating warnings to traffic of safety zones, street crossings, boulevard and other stops. It is particularly desirable to display warning signs directly in the path of vehicle traffic and preferable to have such signs above the surface of the street or road so that the attention of drivers will be arrested a sufficient distance from the sign to permit appropriate control of the vehicle in due time to observe the warning displayed on the sign. Various forms of warning signs have been designed for this purpose but as far as I am informed, all of such signs have been of a rigid or semi-rigid construction and unsuitable to being placed directly in the path of traffic, as collision with such signs results either in injury to the vehicle or to the sign.

The principal object of my invention consists in providing a warning sign of the class described, of elastic or semi-elastic material which may be placed directly in the path of traffic and not afford any appreciable obstruction thereto.

Another object of my invention is to provide a warning sign of the class described which is provided with a base member permanently secured in the street or roadway, such sign having an elastic portion projecting upwardly therefrom above the surface of the street or roadway.

Other objects and advantages will appear hereinafter from the following description.

Referring to the drawings which are for illustrative purposes only and in which I show a preferred form of my invention:

Fig. 1 is a diagrammatic perspective view of a street intersection showing in general an application of warning signs embodying my invention to such an intersection.

Fig. 2 is an enlarged perspective view of one of the warning signs shown in Fig. 1, and

Fig. 3 is a vertical sectional view of the sign shown in Fig. 2, showing the manner of mounting such sign in the street or roadway.

The sign preferably consists of a base member indicated at 11, made of hard rubber or other suitable material, the edges of which are beveled outwardly as shown at 12, so that the material of the street or roadway extends over such edge as indicated at 13, thereby firmly holding such base member in place.

The base member 11 is preferably set into the street or roadway with the upper face thereof flush with the surface of the street or roadway as shown in Fig. 3.

Extending upwardly from the base 11 is the display portion of the sign consisting in the form shown of a substantially flat member or panel 14, the lower portion of which along its sides, is provided with corrugations or ribs 15. This corrugated or ribbed portion of the member 14 extends into the base 11 as shown in Fig. 3, being cemented or otherwise secured therein.

The panel or member 14 is preferably made of soft rubber having high elastic quality so that in the event the wheels of vehicles strike the sign the panel is flexed or bent over, thereby permitting the wheel to pass over the sign without any damage or injury to the sign or vehicle and without forming any appreciable obstruction to such passage of the wheels thereover. The dotted lines 16 in Fig. 3 indicate an intermediate position of the panel during the bending movement of the same, caused as for instance by a vehicle wheel as indicated by dot and dash lines 17.

The form of sign above described is what is commonly called a "stop" signal and is generally placed at street intersections having appropriate wording thereon to suit the immediate purpose, in the form shown the word "Stop" is shown as indicated at 18 in Fig. 2. With signs made according to my invention the same may be placed directly in the path of traffic as indicated at 20 in Fig. 1, the traffic moving in the direction of the arrows. When so placed it is obvious that while ordinarily the signs may be avoided, at the same time the signs may be repeatedly run over without destroying the efficiency of the sign as a warning member. At 21 in Fig. 1, I have diagrammatically shown a street car "landing zone" indicated by a base member 22 which outlines one side and two ends of such zone. On the end nearest approaching traffic is placed a panel or upright elastic member 23 having a proper warning display thereon as may be deemed necessary to warn traffic of the location of such zone. While I have shown and described in particular two forms or uses of my warning sign it will be understood that I do not limit my invention to such forms but include any form of such device in which a base or attaching member

tacts and which has two diameters 88 and 89. The pivot passes through a preferably insulated sleeve 90 and is held in position by nut 91.

5 The double contact 92 corresponding to contact 75 of the other form is movable about the pivot at the point of larger diameter 88 and is insulated from it by sleeve 93 and by disc 94.

10 The contact arms 85 and 86 are both moved by handle 95 and the double contact 92 is moved by a handle 96. So far as thus described these two contact arms, the double contact 85, 86 and the double contact 92 are
15 wholly distinct and separate and may be moved separately to form any of the combinations of which the number of fixed contact plugs and joining coils for the stator and rotor is capable. In order to permit them to
20 be coupled together for common movement I provide a screw pin 96 upon one of the arms which engages within an opening in an insulated lug 97 upon or in the other. When this
25 screw and lug are engaged the contact arms of the form shown in the other figures.

It will be obvious that my invention is independent of the character of the winding, whether bank or otherwise.

30 Its adaptation to maintain during inductance adjustment equal inductances in rotor and stator widens the ranges of the rotor.

Its adaptation to independent adjustment of the inductances of the rotor and stator permits close adjustment to any desired maximum, and permits variation of the rotor
35 ranges without any substantial variation in the total self inductances of the stator and rotor.

40 And finally, the symmetry of every coil with respect to the variometer axis and therefore with respect to every other coil, among other advantages provides electric balance for all settings.

45 In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art and I claim all such in so far as they fall
50 within the reasonable spirit and scope of my invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In a variometer, a stator inductance and 80 a rotor inductance and connected means for simultaneously adjusting both inductances, the stator and rotor being relatively rotatable independently of the adjustment.

2. In a variometer, substantially equal 85 stator and rotor inductances and connected means for simultaneously adjusting both inductances with maintenance of substantial equality between the adjustments.

3. In a variometer, stator and rotor inductances, an adjustment for the stator inductance, a separate adjustment for the rotor inductance, and means for coupling the adjustments to operate together.

4. In a variometer, a rotor winding divided 95 into sections, a stator winding divided into sections, contacts with which the divisions of the sections are electrically connected and common means for connecting with the
100 respective contacts to secure equality of winding in the rotor and stator respectively independently of rotation of the rotor and for a variety of different total windings.

5. In a variometer, a rotor and stator in series with each other and each having its coil 80 divided into sections, a series of contacts connected with the rotor sections, a series of contacts connected with the stator sections, independently movable switch arms, one engaging each series of contacts to include more or
85 fewer coils in the circuit in each, and means for connecting the switch arms to move in unison.

6. In a variometer, a rotor coil divided into sections, a plurality of switch contacts to 90 which the section terminals are connected, arranged to arc shaped, a stator winding divided into sections, a plurality of switch contacts to which the stator section terminals are connected, arranged about the same center as
95 the arc of the rotor contacts, switch fingers bearing upon the respective contacts and insulated from each other, common rotor means for the switch fingers and contacts made by said switch fingers at the opposite ends there-
100 of from the first contacts.

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