March 4, 1924. 1,486,085

P. M. GELATT

AMMETER

Filed May 23, 1922

Fig. 1.

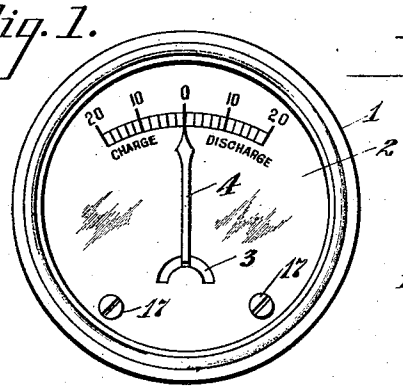


Fig. 2.

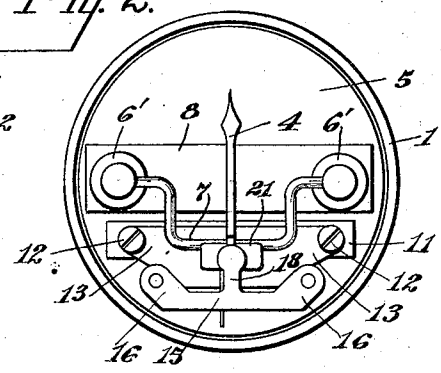


Fig. 3.

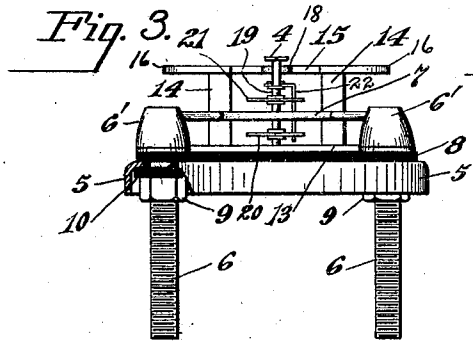


Fig. 4.

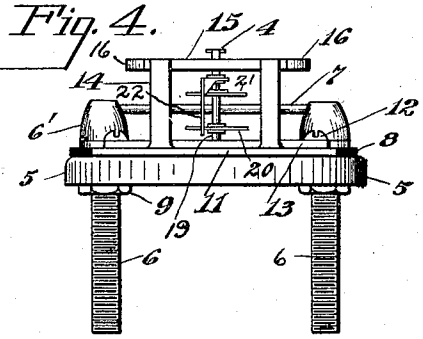
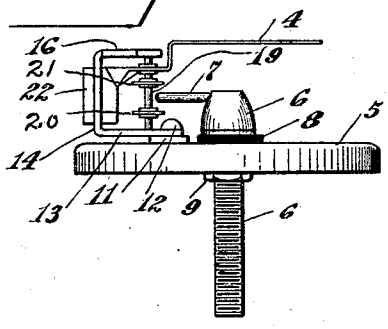


Fig. 5.



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Patented Mar. 4, 1924. 1,486,085

UNITED STATES PATENT OFFICE.

PHILO M. GELATT, OF LA CROSSE, WISCONSIN, ASSIGNOR TO NATIONAL GAUGE AND EQUIPMENT COMPANY, OF LA CROSSE, WISCONSIN, A CORPORATION OF WISCONSIN.

AMMETER.

Application filed May 23, 1922. Serial No. 563,143.

To all whom it may concern:

Be it known that I, PHILO M. GELATT, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain new and useful Improvements in Ammeters, of which the following is a specification.

This invention relates to improvements in ammeters, it more particularly relating to ammeters of the type which are installed on motor vehicles.

The object of the invention is to provide an ammeter of very simple construction which will be effective in its operation and economical in manufacture.

A further and more specific object of the invention is to simplify the construction and make more effective the operation of the type of ammeter in which a single straight conductor is employed to convey the current to be measured and with which is associated two magnetic needles or armatures astatically arranged.

A further object of the invention is to devise an arrangement which will facilitate assembling of the parts upon the supporting base.

In the accompanying drawings:

Fig. 1 is a view of the face of an instrument embodying the improvements with all of the parts in assembled condition.

Fig. 2 is a similar view with the glass face plate and dial plate removed.

Fig. 3 is an end view of the operating parts of the instrument removed from the casing.

Fig. 4 is a similar view of the opposite end of the instrument.

Fig. 5 is a similar view of one side of the instrument.

Referring to the drawings, 1 represents an outer casing of any usual construction and 2 the dial plate which is covered in the usual way by a glass face plate; the dial plate being provided with an arcuate slotted opening 3, through which the pointer 4 projects to cooperate with the indications on the dial. The operating parts are supported upon a base plate 5 which is secured in position in the casing by the screws 6 in the usual way, these screws also acting as binding posts for the wires of the circuit (not shown) and to support the conductor 7 within the instrument, the conductor 7 being soldered or otherwise secured to the heads 6′ of the screws. A strip of insulating material 8 is provided between the heads and the base plate 5 and the nuts 9 which secure the base to the screws are insulated from the base by the washers 10 of insulating material. The conductor 7 in this instrument is one without coils, it being shown of U-form, the intermediate portion thereof projecting thereby into proper association with the magnetic needles or armatures to be described. A permanent magnet in the nature of a straight bar 11 is secured to the base plate 5 in parallel relation with the intermediate portion of the conductor 7, the magnet being secured to the plate by the screws 12. Also secured in position by the same screws 12 is the base 13 of a supporting bracket. The rear edge of this bracket has two upright supporting arms 14 connected at their upper ends by a cross-strip 15 which has at each end thereof an ear 16, these ears being provided with threaded openings to receive screws 17 by which the dial plate 2 may be secured in position. The cross-strip 15 also has a centrally arranged projecting ear 18 to form a bearing for the upper end of a spindle 19, the lower end of the spindle being journaled in the base 13 of the bracket. The bracket parts 13, 14, 15, 16 and 18 are preferably of integral form.

The spindle carries the pointer 4 at its upper end and also carries two magnetic needles or armatures 20 and 21 astatically arranged, that is, in parallel relation with each other with their poles in contrary directions. The armature 20 is arranged in comparatively close proximity to the permanent magnet 11 so as to be within the influence of the magnetic flux thereof and the armatures are arranged on opposite sides of the straight conductor 7 so as to move in the same direction when current passes through the conductor. The pointer 4 preferably has a tail fan 22 to prevent undue vibration of the pointer.

From the above description it will be seen that a very simple construction is provided which will admit of all parts being readily assembled. In assembling the instrument,

the bracket having the spindle pointer and armatures mounted thereon is secured, as a unitary structure, in position on the base plate before or after the conductor 7 is secured in position.

Having thus described my invention, I claim:

1. In an electrical measuring instrument, a main support, a single conductor located on said support and elevated above the base thereof, a unitary armature support comprising a base supporting member, an upper supporting member, a plurality of armatures located within said unitary support and between the upper and lower supporting members, said unitary supporting member being so located that the single conductor will project between the two armatures and in parallel relation thereto when the instrument is at rest.

2. In an electrical measuring instrument, a casing, a single conductor located within said casing, a permanent magnet also located within said casing, a unitary armature supporting member having the armature shaft and a plurality of armatures mounted thereon, means for securing said unitary member within said casing and above the permanent magnet in such relation that the single conductor will project between the armatures, for the purpose specified.

In testimony whereof, I have hereunto set my hand this 15th day of May, 1922.

PHILO M. GELATT.