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J. ZUBATY

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SPEEDOMETER

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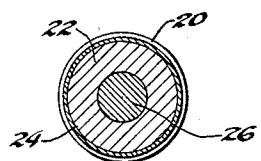
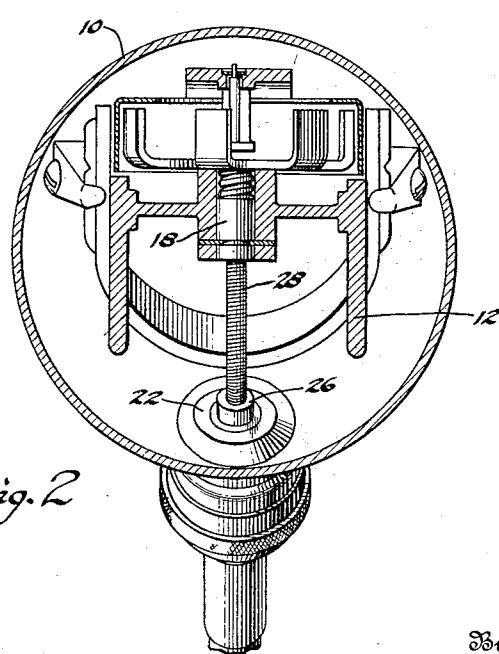
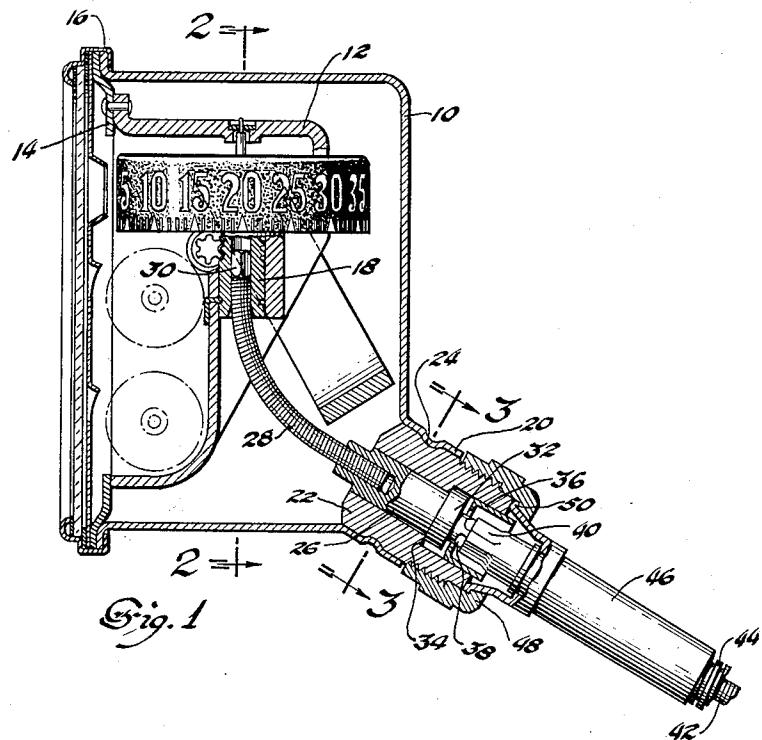


Fig. 2

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UNITED STATES PATENT OFFICE

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SPEEDOMETER

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My invention relates to the construction of speedometers and more particularly to the manner of connecting the speedometer driving member to the speedometer head.

5 Ordinarily, a portion of the speedometer frame extends through the casing and the driving member is fastened to this extension. This is unsatisfactory because as the speedometer casing is usually clamped rigidly 10 against the instrument board, any tendency of the driving member to move relative to the casing will place a strain upon the speedometer frame, this rendering it likely to be distorted, whereby the moving parts may be 15 affected and the instrument become inaccurate. A further disadvantage is that a reasonable amount of clearance must necessarily be provided in the casing for the extension to pass through, and it is very difficult 20 to seal this clearance to prevent the entrance of dust, which will in time affect the operation of the instrument.

The object of my invention is to provide an improved manner of securing the driving 25 member to the instrument whereby no strain whatever is transmitted from the driving member to the instrument frame, and in which a positive seal is formed to absolutely prevent the admission of particles of dirt.

30 With the above and other objects in view, my invention will be more readily understood upon referring to the specification and accompanying drawing, in which:

Figure 1 is a vertical sectional view 35 through a speedometer head, showing my improved method of attaching the driving member to the head.

Figure 2 is a sectional view taken on the line 2-2 of Figure 1.

40 Figure 3 is a sectional view taken on the line 3-3 of Figure 1.

The reference numeral 10 indicates a speedometer casing within which is held the speedometer frame 12. This frame is riveted 45 to a plate 14 which is clamped between the casing 10 and a cover 16 which is rolled in place. Journalled in the frame is a rotor shaft 18 which actuates the speed indicating and mileage recording mechanism supported 50 and by the frame.

The casing 10 is provided with an outwardly extending portion 20 in which is held a bearing member 22 having a groove 24 formed in its outer surface. After the bearing member is assembled in the outwardly extending portion 20 the latter is rolled into the groove to hold the parts in fixed relation and to provide a tight joint between the two so that it will be impossible 55 for dirt to work into the inside of the casing. 60

Journalled in the bearing member is a tip 26 having securely fastened in it a flexible shaft 28, the upper end 30 of which is square and which fits into a squared opening in the rotor shaft 18. The tip 26 is formed with 65 an enlarged portion 32 which at one end engages a shoulder 34 provided in the bearing member and at the other end engages a stamping 36 which is pressed into the bearing member to prevent axial movement of the tip. 70 The outer end of the tip 38 is square and a square tubular member 40 fits over it. This tubular member is securely fastened on the end of a flexible drive shaft 42 which is housed in a flexible tube 44. A collar 46 75 is fastened on the upper end of this flexible tube and this collar is drawn tightly into engagement with the bearing member by a nut 48 which engages a flange 50 formed on the collar. 80

The object of constructing the bearing member independent from the frame is to prevent the transmission of strains from the flexible tube to the frame, and consequent distortion of the latter. When the flexible tube is being installed or whenever there is any tendency of the body to weave, the flexible tube is apt to be bent. If the flexible tubing is directly connected to the instrument frame, this movement will be communicated 85 to the latter. In my construction, however, the only connection between the flexible tubing and the frame is the flexible shaft and of course no strains can be transmitted through it. 90

It will be readily seen that I have not only provided a speedometer construction in which the frame and the delicate mechanism supported on it are protected from injury by angular movement of the flexible driving 95 100

member, but also a construction in which it is impossible for dirt to get into the inside of the casing and affect the accuracy of the instrument or shorten its life.

5 It is thought from the foregoing taken in connection with the accompanying drawing that the construction and operation will be apparent to those skilled in the art, and that various changes in size, shape, and proportion and details of construction may be made without departing from the spirit and scope of the appended claims.

10 I claim:

15 1. An indicating instrument comprising, in combination, a casing, indicating mechanism, a frame adapted to support all of said indicating mechanism, said frame being secured in said casing, a driving member, a bearing member separate from said frame secured in said casing, said driving member being supported in said bearing member, and a flexible driving element secured in driving engagement with said driving member and said indicating mechanism.

20 2. An indicating instrument comprising, in combination, a casing, a frame held in said casing, indicating mechanism carried by said frame, a bearing member separate from said frame and secured in said casing, a driving member secured to said bearing member, and a flexible shaft journalled at its upper end in said frame and at its lower end in said bearing member and connecting said driving member with said indicating mechanism.

25 3. An indicating instrument comprising, in combination, a casing, a frame including indicating mechanism held in said casing, a bearing member separate from said frame secured in said casing, flexible driving means connected at its upper end to said indicating mechanism and having its lower end journalled in said bearing member, a driving member coupled with the lower end of said flexible driving means, and a housing for 40 said driving member secured to said bearing member.

45 4. An indicating instrument comprising, in combination, a casing, indicating mechanism housed within the casing, a frame adapted to 50 support all of said indicating mechanism, said frame being secured to said casing, a bearing member separate from said frame secured in said casing, a driving member, and a flexible member journalled in said bearing 55 member and adapted to have one end connected to said driving member and the other end connected to said indicating mechanism.

In testimony whereof I affix my signature.

JOSEPH ZUBATY.