

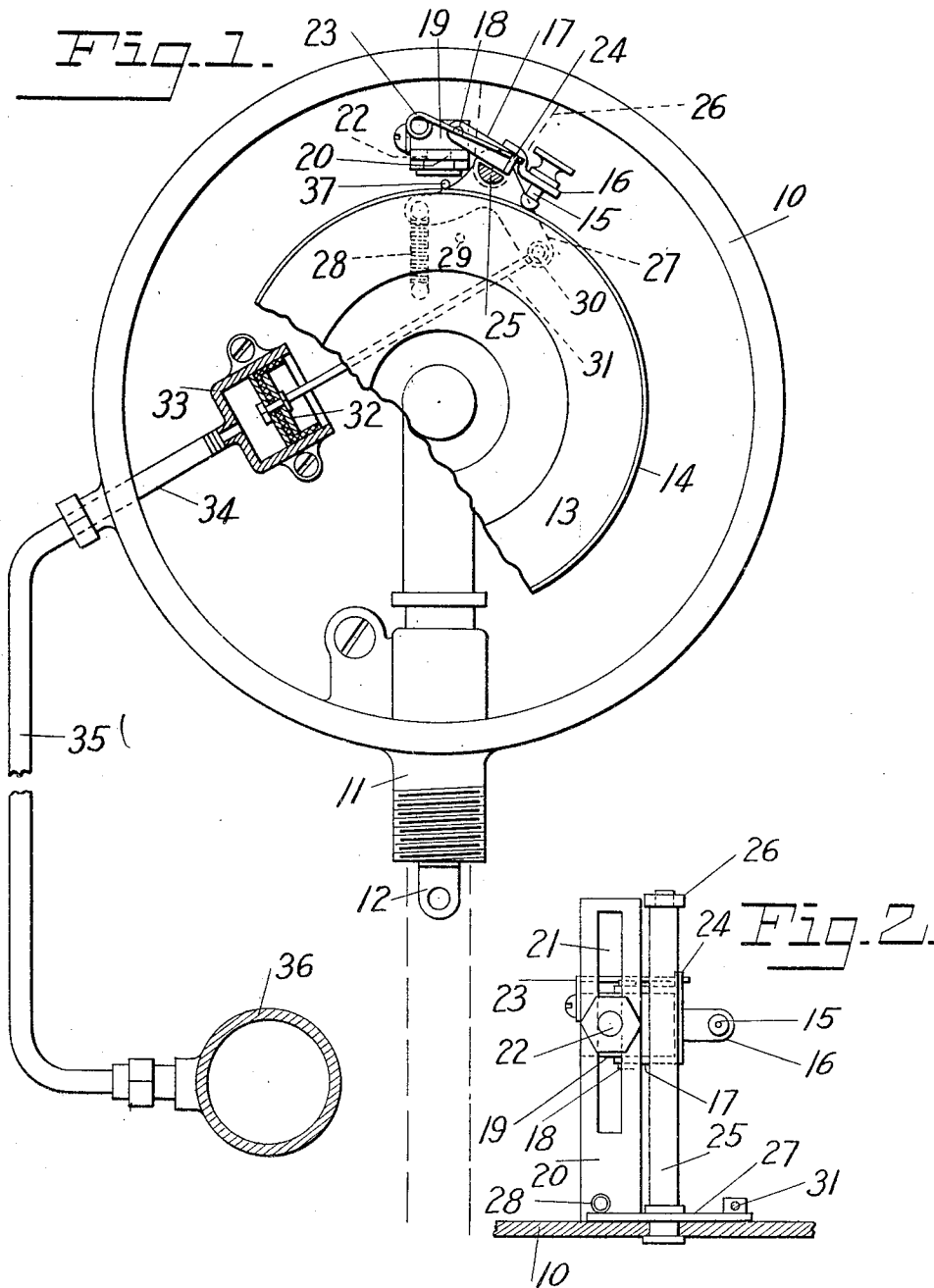
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PENCIL CONTROLLING MEANS FOR A SPEED RECORDER

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PENCIL CONTROLLING MEANS FOR A SPEED RECORDER

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The object of this invention is to provide a pencil controlling means in a speed recorder of the type shown in the patent to Henkle et al., 914,835, in which a drum is driven by a clock so as to move a strip of paper beneath a pencil, so as to record on the paper the speed of the vehicle, the distance travelled, and the number of hours the vehicle was in motion.

More specifically, the object of this invention is to provide means to indicate on the strip of paper the time that the engine is running and to lift the pencil from the paper when the engine is not running. Another object of the invention relates to a novel manner of connecting the pencil controlling mechanism to the manifold of the engine, so that the suction created in the manifold when the engine is running will operate a plunger which in turn will permit the pencil to be lowered into contact with the paper so as to leave its mark thereon. When the engine is not running, the suction will not exist and spring means are employed to lift the pencil from the paper so that no mark will appear thereon. Since the paper moves at a constant rate, the length of time that the engine is cut off or is not running will be denoted as well as the length of time that the engine is running.

In the drawing Figure 1 is an elevational view partly in cross section, showing the recording instrument having our invention attached thereto, and

Figure 2 is a detailed view of the pencil controlling means.

Referring more particularly to the drawing in which like reference characters are used throughout to designate corresponding parts:

The casing of the meter is designated by the reference character 10, which casing is provided with a hollow shank 11 which receives a rotatable coupling 12 driven by a moving part of the vehicle, such as the wheels or the transmission shaft. The drum 13 is driven by a clock mechanism, not shown, on which drum is attached a strip of paper 14. The pencil 15 is carried by a plate 16 provided with arms 17 pivoted as at 18 to a slid-

ing member 19 which slides on the bracket 20 secured to the casing 10. The bracket 20 is provided with a slot 21 which receives a guide pin 22 carried by the sliding member 19. The pencil 15 is resiliently pressed against the paper by means of a spring 23 secured to the sliding member 19 and engaging a projection 24 on the member 16. The above construction is necessary by reason of the fact that as the vehicle proceeds the sliding member 19 slides backward and forward throughout the length of the slot 21. The mechanism which causes the slidable member to thus move is not indicated in the drawing or described in the specification, for the same forms no part of the present invention and is well understood by those skilled in the art.

A shaft 25 is rotatably mounted in the casing 10 and in a bearing 26 carried by the bracket 20. The shaft 25 has its upper portion cut away, forming a flat surface immediately below the arms 17. A bell crank lever 27 is secured to the shaft 25 and at its end beneath the bracket 20 is attached to a helical spring 28 having its other end secured to the casing 10. The spring 28 tends to hold the parts against the stop pin 29 carried by the casing 10. The bell crank lever 27 is connected as at 30 to a piston rod 31 which carries a piston 32 slidable in a barrel 33 which is operatably connected with the tube 34 which connects with a flexible tube 35, which in turn is operatably connected with the intake manifold 36 of the automobile.

In operation, the drum 13 and paper 14 move at a constant rate but the motion of the sliding member 19 is governed by the velocity of the vehicle. As long as the pencil 15 is in contact with the paper, it will indicate thereon by a line the velocity of the vehicle, the distance travelled and other information. When the engine is not running, there will be no vacuum in the manifold 36 or in the barrel 33, so that the spring 28 will be free to pull the bell crank lever 27 against the stop pin 29, and the right-hand part of the upper flat surface of the shaft 25 will engage the arms 17 and raise the pencil 15 from the paper. As soon, however, as the motor starts run-

ning, a partial vacuum will be created in the manifold 36 and barrel 33 drawing the piston 32 downwardly and rotating the bell crank lever 27 in a clockwise direction until it abuts against the stop pin 37. It is apparent that the upper flat surface of the shaft 25 is now no longer holding the arms 17 and pencil 15 in an elevated position, so that the spring 23 returns the pencil 15 into engagement with the paper 14.

It is obvious that many changes may be made in the specific embodiment of the invention without departing from the spirit thereof. We therefore desire to claim our invention broadly in whatever form it may be embodied which may fall within the scope of the appended claims.

Having now described our invention, we claim:

1. In combination with a revolvable drum of a recording instrument and the manifold of an internal combustion engine, a pivoted marker and cam means controlled by the condition of pressure in the manifold to move said marker on its pivot into or out of engagement with said drum.

2. In combination with a revolvable drum of a recording instrument and the manifold of an internal combustion engine, a pivoted marker, a flat sided shaft in operative relation to said marker, a bell crank lever connected with said shaft, spring means whereby said lever may be actuated in one direction and suction means whereby said lever may be moved in the opposite direction, said movements governing the position of said marker in relation to said drum.

3. In combination, a revolvable drum carrying a strip of paper, a pivoted marker to mark on said paper, a shaft having a flat side rotatably mounted in operative engagement with said marker, a bell crank lever secured to said shaft, spring means to rotate said lever and shaft so as to raise said marker from said paper and suction means whereby the tension of said spring may be overcome and said lever and shaft rotated in the opposite direction, and means to force said marker into engagement with said paper when the tension of the spring means has been overcome by said suction means.

4. In combination with a moving strip of paper and the intake manifold of an internal combustion engine, a marker adapted to travel crosswise of said paper, a shaft having a flat side rotatably mounted in operative engagement with said marker, and means controlled by the condition of pressure in the manifold to govern the rotation of said shaft to govern the position of said marker in relation to said paper.

5. In combination with a moving strip of paper and the intake manifold of an internal combustion engine, a marker and cam means controlled by the condition of pressure in the

manifold to govern the position of said marker in relation to said paper.

6. In combination, a marker, a piston barrel, a piston adapted to slide therein, a flat sided shaft in operative relation with said marker, a lever mounted on said shaft, a piston rod connecting said lever and piston, a spring connected to said lever, means whereby a partial vacuum is created in said barrel, so as to cause said piston rod and lever to overcome the tension of said spring and rotate said shaft so that the flat side thereof will be turned toward said marker, and means whereby said marker is depressed toward said flat side.

In testimony whereof we affix our signatures.

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