May 3, 1949. R. A. KROPP 2,469,120

BRAKE LEVER OPERATED SWITCH

Filed May 7, 1945

Fig. 1.

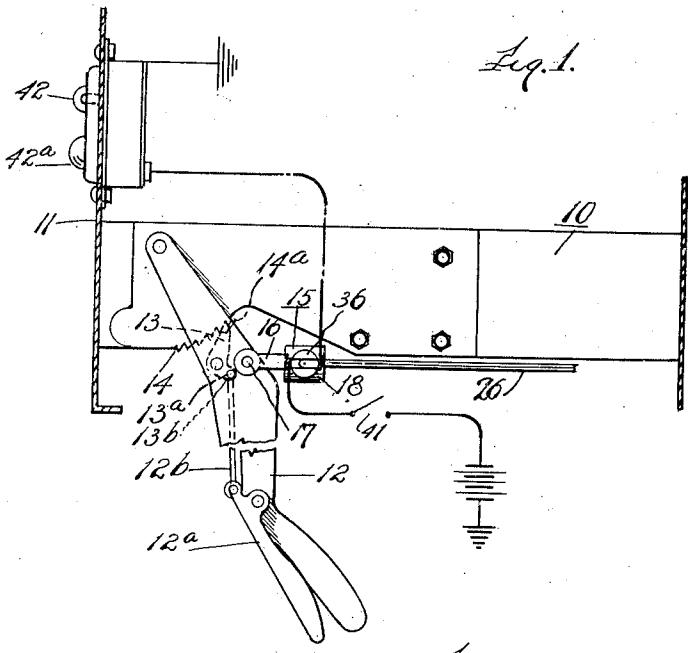
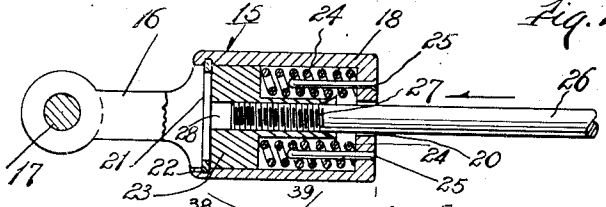


Fig. 2.



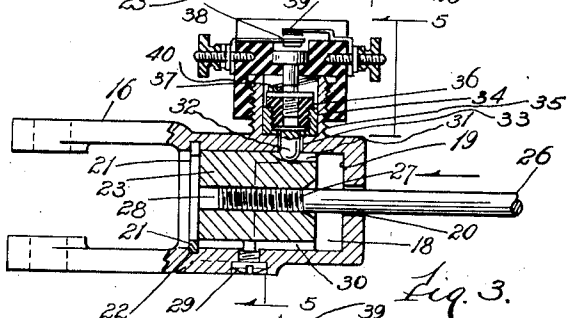


Fig. 3.

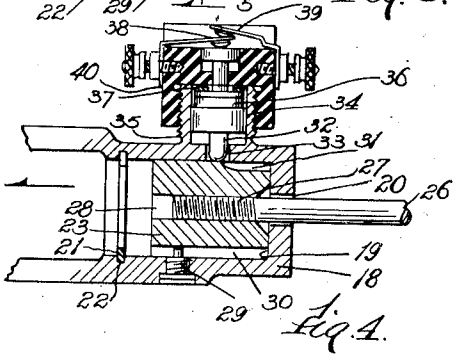


Fig. 4.

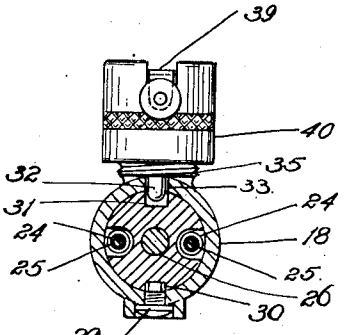


Fig. 5.

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BRAKE LEVER OPERATED SWITCH

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Application May 7, 1945, Serial No. 592,425

4 Claims. (Cl. 200—59)

1

This invention relates to improvements in brake systems. More particularly, it relates to improvements in emergency brake signals.

Well known is the habit of motorists to leave the emergency brake "on" when there is no need for it, with the usual disadvantages and damage.

This usually occurs after a motorist has put the emergency brake on when he does not plan to use his car for a time, and thereafter starts again without removing the emergency brake.

An object of the invention, among others, is to provide an improved warning signal means for preventing a motorist from driving with his emergency brake on, by providing a warning light in front of the motorist to indicate that the brake is on, and also an audible signal.

Fig. 1 is a diagrammatic view of the emergency brake signal device with the wiring system.

Fig. 2 is a detailed section of the clevis.

Fig. 3 is another section of the clevis with the spring applied, shown in open position.

Fig. 4 is a similar view with the switch in closed position.

Fig. 5 is a detailed cross section of the clevis on the line 5—5 of Fig. 3.

I have mounted on a chassis 10, having an instrument board 11, a pivoting emergency brake handle 12. The handle includes a pawl grip 12a pivotally attached to a pawl rod 12b, which in turn is operatively connected to a pawl 13 by means of a looped end 13a on the rod 12b engaging a headed projection 13b on the pawl.

Adapted to co-operate with the pawl 13 is a ratchet 14, having the usual teeth 14a, which will be more clearly understood from what follows.

The handle 12 is adapted to reciprocate a clevis 15. The clevis has the usual fork 16 to receive a bolt 17 connecting the clevis to the handle.

The clevis may have the usual barreled housing 18, having a closed end 19 with an aperture 20, the opposite end having a stop collar 21 fitting into a groove 22 in the barrel housing.

A sliding block 23 is adapted to reciprocate in the housing, and a pair of concealed springs 24 are interposed between the block and the end 19 of the barrel housing.

The springs may have lining pins 25 to hold them in place.

A brake rod 26, threaded at its inner end, as at 27, projects into an aperture 28 in the block.

A screw 29 is adapted to project into a keyway 30 to keep the block from turning.

The block has a cam way 31, as clearly shown in Figs. 3, 4 and 5, and adapted to move in and out of this cam way is a button 32 through an

2

aperture 33 in the housing 18. The button 32 is mounted in an aperture 34 in the boss 35 on the housing 18.

Insulation 36 may be provided for obvious purpose. Also provided is a retaining plate mounted on the shank of the button 32 and a spring 37 to tend to keep the button in a depressed condition. Thus, when the camway 31 is forwarded and lined up with the button 32, the button will tend to follow into the cam-way.

In this state the electrical circuit is broken. However, when the sliding block is pushed in the opposite direction, then the button 32 is pushed upwardly and moves upwardly to close the contacts 38 and 39 to close the circuit to the lamp 42 and intermittent buzzer or sound signal 42a by means of the switch 40.

In this way the operator of the car knows that the brake is on, and, since he will not want the brake on when he is driving, he will release the brake.

The switch 41 is, or can be, provided to allow the brake to remain on without the light being on when leaving the car.

The electric circuit of the signal goes through the ignition switch and will therefore only operate when the ignition switch is in "on" position. In the "off" position of the ignition switch the circuit will be dead.

While I have illustrated and described the prefered form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. In combination in an electrical circuit controlling device for an emergency brake signal, a clevis member adapted to be connected to a brake lever, said clevis member having an apertured closed end portion, an elongated member extending reciprocably through said apertured end portion and adapted to be attached to the emergency brakes of a vehicle, a sliding block reciprocably movable within the clevis and secured to the end of said elongated member for movement therewith, a boss on one side of said clevis, said boss being hollow and having an aperture through the side of the clevis communicating therewith, a plunger reciprocably guided in said boss and

having a tip projecting through the aperture in the side of the clevis, a longitudinal camway in the periphery of said sliding block, said plunger tip extending into said camway for maximum projection through said aperture through which it projects in one reciprocal position of the sliding block and arranged to be cammed out of the camway by movement of the sliding block into another reciprocal position, and a switch assembly carried by said boss and including normally separable electrical switch contacts arranged to be moved into closed position upon movement of said plunger away from said sliding block by said camway as an incident to movement of the block with said elongated member into said other position.

2. A device as defined in claim 1 wherein the sliding block is cylindrical and liable to rotary movement, said camway leading onto the periphery of the sliding block so that in movement of the sliding block into said other position the tip of the plunger rides onto the periphery of the sliding block and is released from the camway, and means for retaining the sliding block against rotation relative to the clevis but permitting free reciprocal movement of the block.

3. In a device of the character described, a barrel housing, a cylindrical sliding block movable longitudinally in said housing and also liable to rotary movement therein, the sliding block having two longitudinal grooves therein one of which includes a cam end portion leading onto the periphery of the sliding block, a switch assembly carried by said barrel casing and having a plunger extending into said cam groove and adapted to ride the cam end portion thereof onto the periphery of the sliding block in the relative longitudinal movement of the barrel casing and the sliding block, and a turn preventing element extending from the wall of the barrel casing into the remaining groove in the sliding block to prevent relative rotation of the sliding block.

4. In a circuit controlling device for an emergency brake signal, a clevis member having a laterally projecting hollow boss which is externally threaded and through the base of which an aperture opens into the interior of the clevis member, a sliding block in the clevis member adapted for relative reciprocal movement and arranged for connection with a brake assembly, the clevis member being arranged for attachment to a brake lever, the sliding block having a longitudinal camway in the periphery thereof, and an electrical switch assembly comprising a dielectrical cap screwed onto said boss and a plunger for operating the switch guided by the interior of the boss and having a tip extending through said aperture into said camway for actuation in the relative reciprocations of the sliding block and the clevis member for operating the switch.

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