

Jan. 10, 1939.

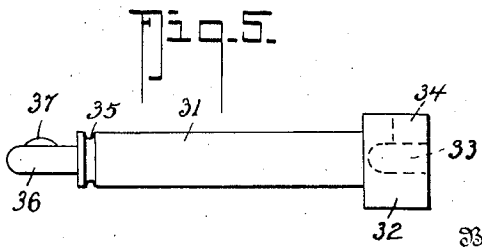
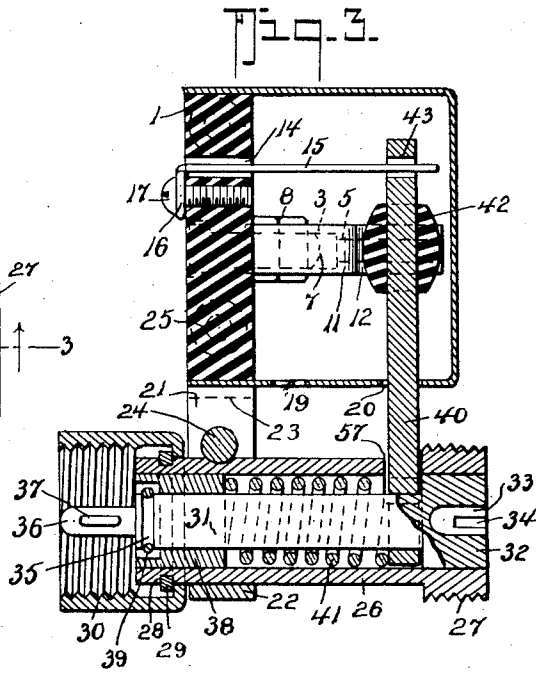
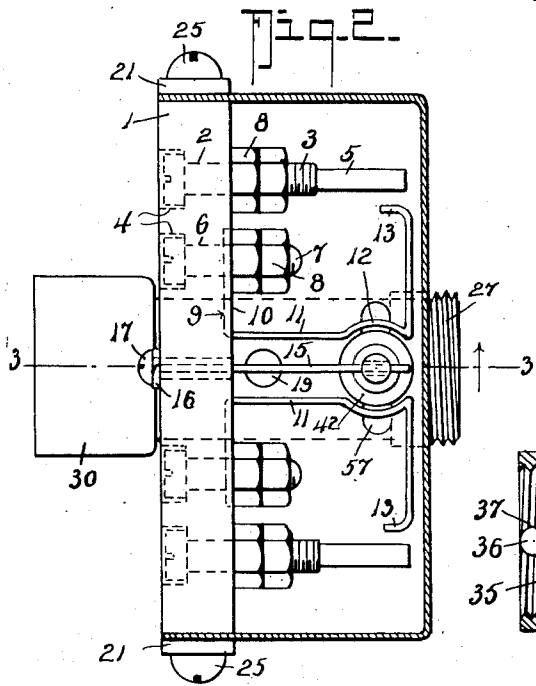
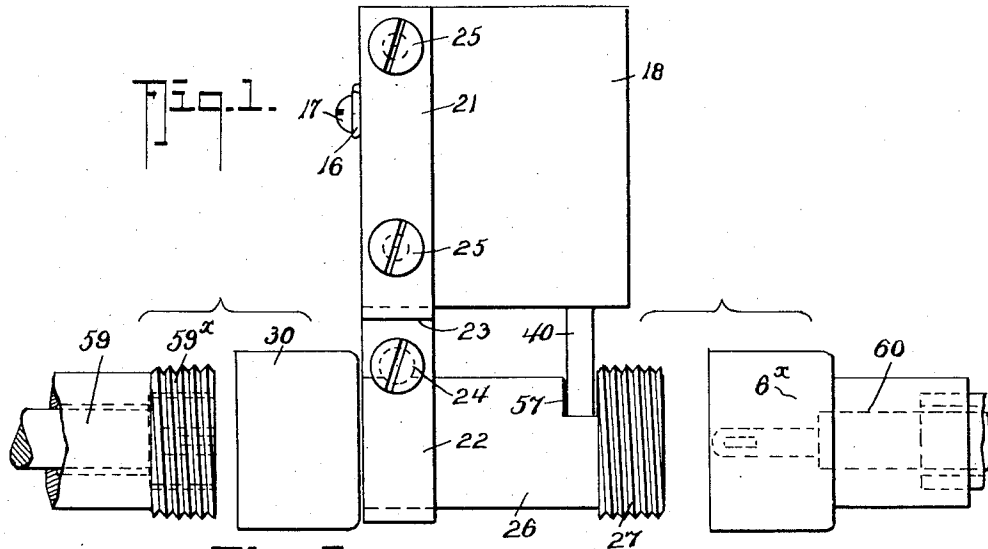
W. MOELLER

2,143,447

AUTOMOBILE DIRECTION SIGNAL SWITCH

Filed April 13, 1937

2 Sheets-Sheet 1



Inventor
William Moeller
Albert E. Dieterich
and
Theodore H. Rutley
Attorneys

Jan. 10, 1939.

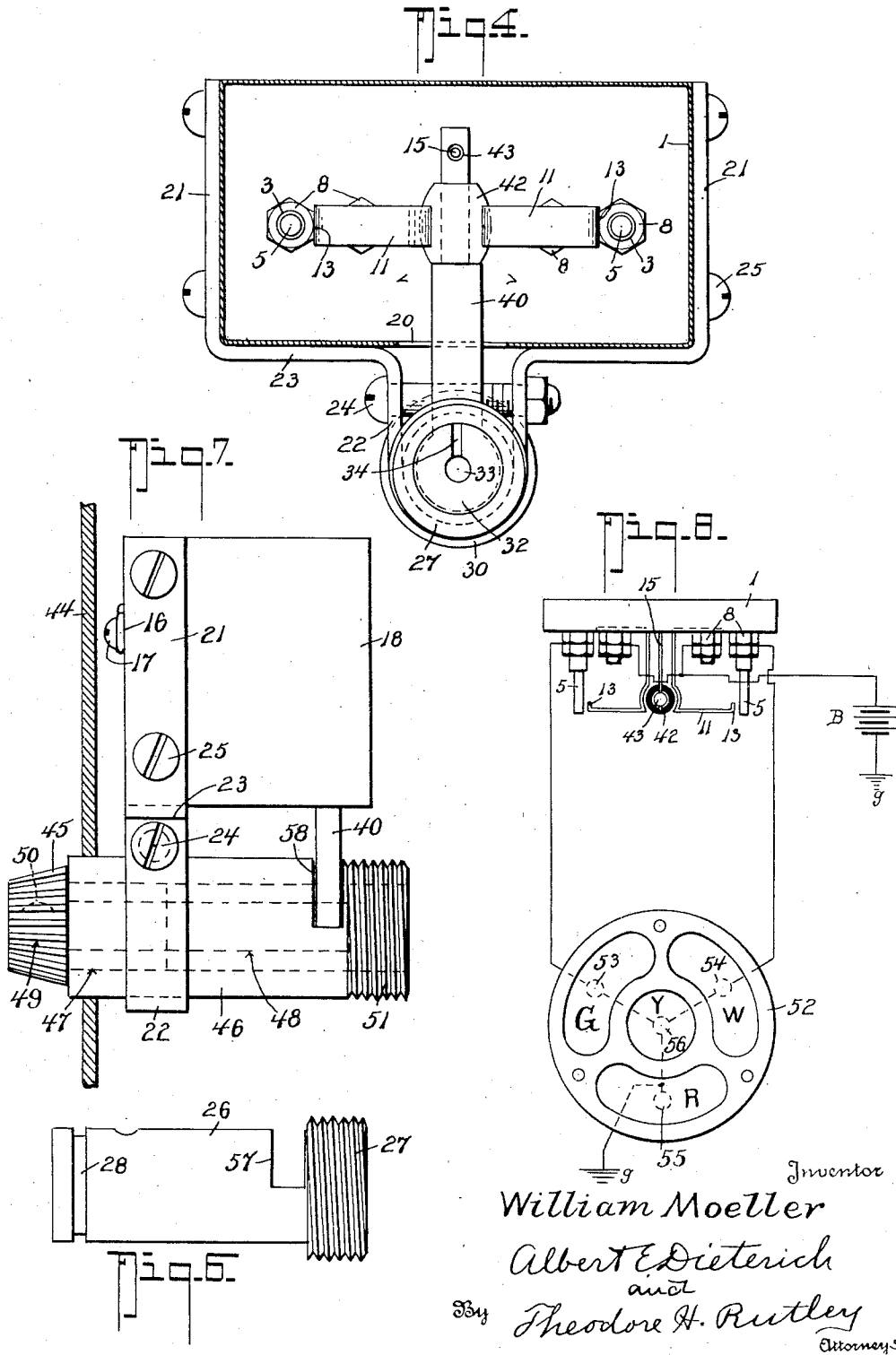
W. MOELLER

2,143,447

AUTOMOBILE DIRECTION SIGNAL SWITCH

Filed April 13, 1937

2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,143,447

AUTOMOBILE DIRECTION SIGNAL SWITCH

William Moeller, Freeport, N. Y.

Application April 13, 1937, Serial No. 136,691

2 Claims. (Cl. 200—52)

My invention relates to traffic signal devices which are located on automobiles for the purpose of indicating to approaching vehicles or persons whether the particular vehicle is in motion or at rest, and when in motion, in which direction it is moving.

Primarily the invention has for an object to provide a signal box and means to operate the signals carried thereby to indicate whether the vehicle is running forwardly or whether it is backing.

Further, the invention has for its object to provide an improved automatically actuated switch device for controlling the indication of forward motion and rearward motion.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends the invention still further resides in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, and then be particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of my automatic switch as applicable to a speedometer drive at any place where two sections thereof may be coupled together.

Figure 2 is a top plan view of the automatic switch unit, the case being shown in section.

Figure 3 is a vertical section on the line 3—3 of Figure 2.

Figure 4 is an end elevation of the switch, the case being shown in section.

Figure 5 is a detail elevation of the distributor shaft.

Fig. 6 is a detail view of the drive shaft housing.

Figure 7 is a side elevation of a slight modification, showing how the unit may be adapted for mounting on the back of the speedometer case.

Figure 8 is a circuit diagram showing how the switch actuates certain signals in the signal box.

In the drawings, in which like numbers of reference indicate like parts in all the figures, 1 represents the base of the automatic switch, which base 1 is composed of suitable insulating material. The base 1 is provided with a set of holes 2 for the contact bolts 3 and a set of holes 6 for the bolts 7. The bolts 3 and 7 have their heads held in countersunk portions 4 of the base 1, while nuts 8 hold the bolts 3 and 7 in place.

The bolts 3 have extension rods 5 which serve as contact terminals to cooperate with the con-

tact ends 13 of spring contact arms 11 having portion 10 held in countersinks or recesses 9 in the base 1 by the bolts and nuts 7, 8. The arms 11 may have arcuate portions 12 with which the insulator 42 on the circuit closer arm 40 co-operates in a manner which will be later more clearly understood.

In order to hold the arm in a neutral position while the vehicle is at rest, a neutral spring 15 is provided which passes through a hole in the base 1, is bent down and into a loop or eye 16, and is held in place by a screw 17 (see Figures 2 and 3). The spring 15 passes loosely through a hole 43 in the arm 40. A suitable case 18 encloses the switch elements above referred to, the arm 40, however, extending through a slot 20 in the case. The case is also provided with a hole 19 to pass the circuit wires.

The base 1 and the parts attached to its are supported on the drive shaft housing 26 by means of a clamp bracket composed of a strap 21 secured to the sides of the base 1 by screws 25 and carried under the base, as at 23, and then formed as a loop 22 around the housing 26, to which it is secured by a bolt and nut 24.

The housing 26 is slotted at 57 so that the arm 40 may pass out of the housing, the inner end of the arm having an eye to receive the distributor shaft 31 and lie against the head 32 thereof, against which it is held with some friction by a spring 41 that is held in the housing 26 between the arm 40 and a bushing 38 held in one end of the housing.

A ring 39 in a groove 35 in the distributor shaft prevents bushing 38 from being forced out by spring 41. One end of the shaft 31 has a recess 33 and a slot 34 to receive the mating coupling of the speedometer shaft section 60, while the other end of the shaft 31 has a pin 36 and key 37 to enter the mating parts of the other section 59 of the speedometer shaft.

The housing 26 has one end 27 threaded to enter the swivel coupling nut 6× of the speedometer shaft housing 60, and it has its other end provided with a swivel coupling nut 30 to receive the threaded end 59× of the housing of the speedometer shaft section 59 (see Figure 1). The swivel nut 30 is held in place by a split ring 29 located in a groove 28 in the housing 26, as best shown in Figure 3.

When the unit switch is mounted as a part of the speedometer instrument itself (see Figure 7), the drive shaft housing 46 is modified as shown, as is also the bushing 47, and the end 49 of the distributor shaft 48 is keyed, at 50, to the

speedometer drive pinion 45. The housing 46 is mounted rigidly in the back wall 44 of the speedometer case (not shown). The housing 46, in this form, is provided with the male threads 51 only. Like the housing 26, the housing 46 has a slot 58 through which the arm 40 is passed.

The proper contact bolts 5 are connected to a terminal of their respective signal lamps 53—54, while the bolts 7—7 are connected electrically with the battery B. Battery B and the other terminals of all signal lamps 53, 54, 55 (red) and 56 (yellow) are suitably grounded (see Figure 8, for example).

So far as described, the foregoing portion of my invention operates as follows: assume the parts 59×—30, and 27—6× of the speedometer drive to be coupled to the drive shaft housing. If the vehicle is at rest, the spring 15 (which is strong enough to overcome the inertia of the arm 40) will hold the arm in its mid-position to allow contacts 13—5 to remain separated. When the vehicle moves forwardly the arm 40 will be swung over to close one pair of contacts 13—5 which close the circuit that energizes the green light 53; if the vehicle moves backwardly, the arm 40 will be swung over to close the other pair of contacts 13—5, to close the circuit of the white light 54.

While I have illustrated the signal 53 as a light bulb, it is obvious that a bell, horn or other audible signal may be substituted therefor or used in addition thereto.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the complete construction, operation and advantages of the invention will be clear to those skilled in the art.

What I claim is:

1. In an automobile traffic signal, a drive shaft housing having an opening in its wall, a drive shaft mounted in said housing, an arm loosely mounted on said shaft in said housing and projecting through said opening, a spring on said shaft, said shaft having a shoulder against which said spring presses said arm, whereby said arm is frictionally held to be turned with said shaft, means limiting the degree of turning of said arm only, a support, means mounting said support on said drive shaft housing, a light spring rod mounted on said support, said arm having a hole through which said rod projects to restore said arm to a neutral position when rotation of said shaft ceases, and switch contacts on said support adapted to be closed by said arm when it is deflected from its neutral position.

2. A circuit closer for automobile traffic signals, comprising a base, two springy contact members mounted on said base and insulated from each other, two relatively rigid contact members also mounted on said base and insulated from one another and from said springy contact members, said springy contact members lying in position between said rigid contact members and including contact ends terminating adjacent but normally spaced from said rigid contact members, a neutral spring mounted on said base, a drive shaft housing, means mounting said base on said housing, a drive shaft in said housing, an arm free on said shaft, means to hold said arm to move with said shaft on its axis, means to limit the degree of movement of said arm, said arm projecting between said springy contact members and being connected with said neutral spring, and means insulating said arm from said springy contact members.

WILLIAM MOELLER.