Aug. 6, 1935. D. D. HUDDLESTON 2,010,488

AUTOMOBILE SIGNAL

Filed Jan. 15, 1934

Fig. 1.

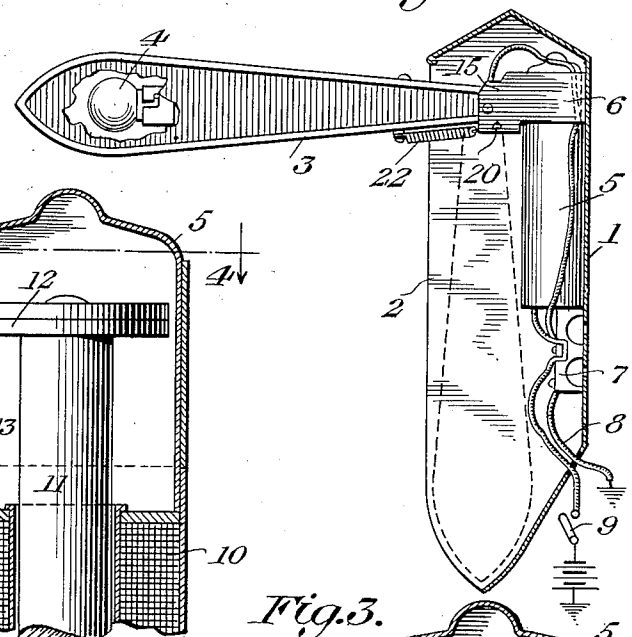


Fig. 2.

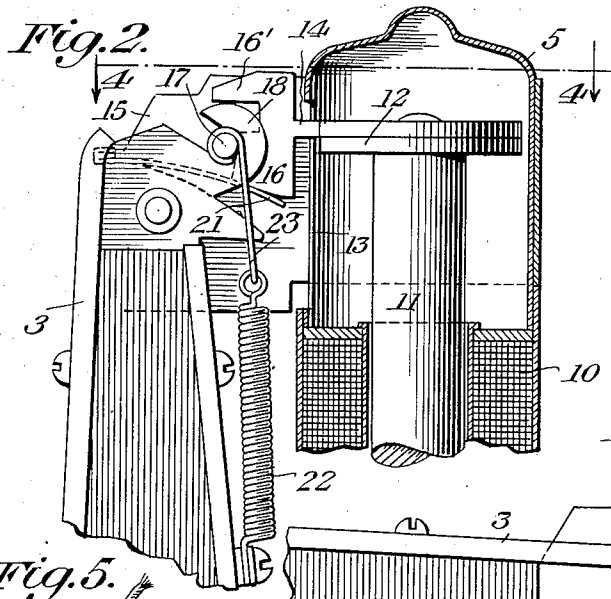


Fig. 3.

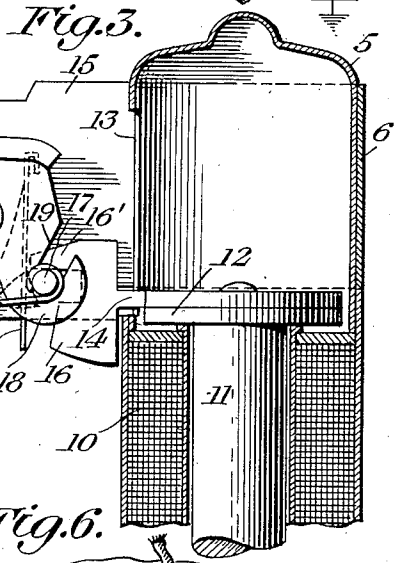


Fig. 5.

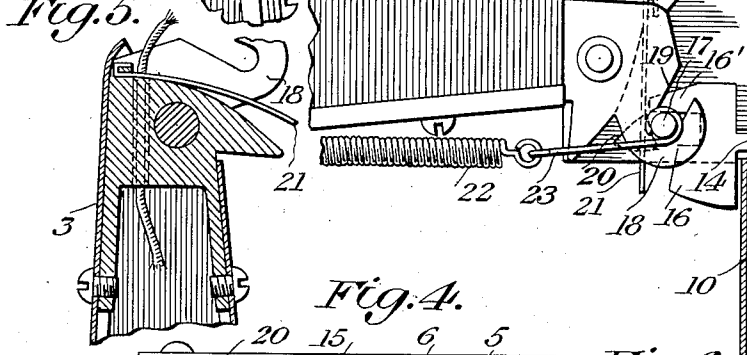


Fig. 4.

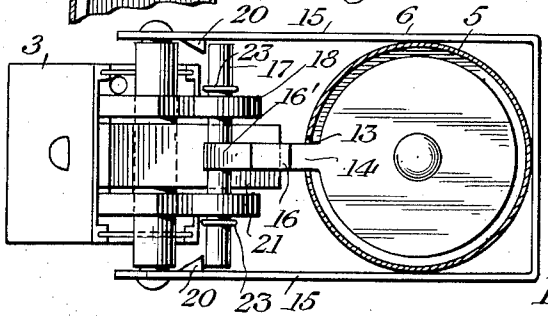
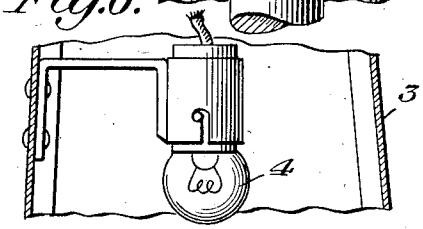


Fig. 6.



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2,010,488

AUTOMOBILE SIGNAL

Donald D. Huddleston, San Antonio, Tex.

Application January 15, 1934, Serial No. 706,756

2 Claims. (Cl. 177—329)

This invention relates to a signal and direction indicator for vehicles of any kind and has for the primary object the provision of a device of the above stated character which will be light in weight, neat, durable and smooth in operation and will be visible both night and day to readily attract attention when in operative position and consists of a minimum number of parts of the simplest construction rendering the chance of the device getting out of order or failing to operate to be negligible.

With these and other objects in view this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawing, in which

Figure 1 is a vertical sectional view illustrating a signal and direction indicator constructed in accordance with my invention.

Figure 2 is a fragmentary vertical sectional view showing the semaphore and its operating means with the semaphore occupying a non-signaling position.

Figure 3 is a similar view showing the semaphore in signaling position.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary sectional view showing the pivotal end of the semaphore.

Figure 6 is a detail sectional view illustrating the mounting of the illuminating means within the semaphore.

Referring in detail to the drawing, the numeral 1 indicates a housing adapted to be suitably mounted in a vertical position to a vehicle and one side of said housing is open to form an entrance 2 for the movement of a semaphore 3 into and out of said housing. The semaphore when depending within the housing is concealed from view and when swung outwardly of said housing into a horizontal position indicates that the respective vehicle is to make a turn from a straight course or to stop. The semaphore 3 may be of any desirable shape and the opposite walls thereof are of skeleton formation closed by transparent panels of different colors. Arranged within the semaphore is an electric lamp 4 to be illuminated when the semaphore is in signaling position so that the latter will be visible day or night.

A casing 5 is mounted in the housing by upper and lower brackets 6 and 7. The lower bracket 7 also forms supports for electrical conductors 8 forming part of an electric circuit in which is included a control switch 9 located in convenient reach of the operator of the vehicle. The casing 5 supports and protects an electric solenoid 10, the core of which is indicated by the character 11 and carries at its upper end an armature 12. It is to be understood that the casing 5 supports the solenoid in a vertical position adjacent the upper end of the housing 1 and the upper end of said casing provides a space in which the armature 12 may slide and this portion of the casing is provided with a slot 13 through which extends an arm 14 secured to the armature. The upper bracket 6 projects beyond the slotted side of the casing to form attaching portions 15 and to which is pivoted one end of the semaphore 3. Carried by the outer end of the arm 14 is a head 16 operating between the attaching portions 15 and upper bracket 6 and this head is provided with a bill portion 16' to engage with a pin 17 carried by hooks 18 mounted to the pivotal end of the semaphore. Certain walls of the hooks 18 are shaped to form cam faces 19. The downward movement of the pin 17 during the energization of the solenoid is limited by stops 20 on the attaching portions 15 of the upper bracket 6. A leaf spring 21 is secured to the pivoted end of the semaphore and bears against the pin 17 when the semaphore is in signaling or horizontal position and bears against one face of the head 16 when the semaphore is in non-signaling position. A coil spring 22 has one end secured to the semaphore and its opposite end connected to the pin by a strap-like element 23. The electric lamp 4 is connected to the electric circuit heretofore referred to and is illuminated when the semaphore is in signaling position due to the closing of the switch 9 which also completes the circuit to the solenoid for causing movement of the semaphore into signaling position, it being understood that when the circuit is interrupted by the switch 9 the electric lamp extinguishes and the semaphore gravitates into the housing 1 to assume non-signaling position.

In operation, during non-energization of the solenoid the various parts assume the position as shown in Figure 2 and on closing the circuit of the switch 9 the solenoid is energized attracting the armature 12 which causes a downward movement of the head 16 and due to its connection with the pivoted end of the semaphore, the latter is swung outwardly of the housing into horizontal or signaling position and maintains this position as long as the circuit is completed.

The interruption of the circuit permits the semaphore to gravitate into non-signaling position and the leaf spring to act in returning the head and the armature to their uppermost positions with respect to the casing 5. The movement of the semaphore into signaling position will have momentum sufficient to move the semaphore beyond signaling position, as shown in Figure 1 and to retard or absorb this momentum the spring 22 is provided which comes in action when the pin 17 engages with the stops 20, the momentum of the semaphore acting to move the bill 16' relative to the pin and the latter traveling upon the cam faces 19 causes a tensioning of the spring 22 to retard or absorb the movement of the semaphore beyond signaling position.

When the parts are in non-signaling position, as shown in Figure 2, the free end of the leaf spring is a considerable distance away from the pivoted end of the semaphore and by this arrangement a cushioning means is provided for the semaphore when the solenoid is energized. The first movement of the armature towards the solenoid compresses the leaf spring against the pivoted end of the semaphore and this acts to gradually start the semaphore in its movement towards signaling position and when the leaf spring becomes fully compressed the bill portion 16' of the head 16 engages with the pin, thereby providing a positive drive between the head and the semaphore during the final movements of the semaphore into signaling position. The leaf spring also aids to restore the armature and head in their uppermost position when the semaphore returns to its non-signaling position.

Having described the invention, I claim:

1. A signal comprising a housing having an entrance, a bracket mounted in said housing adjacent one end of the latter, a semaphore adapted to lie within the housing when in non-signaling poistion and to move out of said housing by way of the entrance to occupy a signaling position, a pivot connecting one end of the semaphore to the bracket and located adjacent one end of the entrance, a solenoid carried by said bracket, an armature for said solenoid, a manually controlled electric circuit for said solenoid, a head connected to the armature and having a bill portion, hooks secured to the pivoted end of the semaphore, a pin carried by said hooks and engaged by the bill portion for positioning the semaphore in signaling position during the energization of the solenoid, stops carried by said bracket and located in the path of movement of the pin to limit the movement of said pin in one direction, and a spring connected to the pin and to the semaphore between the latter's pivot and its free end to yieldably resist the movement of the semaphore beyond its signaling position when moved from a non-signaling position.

2. A signal comprising a housing having an entrance, a bracket mounted in said housing adjacent one end of the latter, a semaphore adapted to lie within the housing when in non-signaling position and to move out of said housing by way of the entrance to occupy a signaling position, a pivot connecting one end of the semaphore to the bracket and located adjacent one end of the entrance, a solenoid carried by said bracket, an armature for said solenoid, a manually controlled electric circuit for said solenoid, a head connected to the armature and having a bill portion, hooks secured to the pivoted end of the semaphore, a pin carried by said hooks and engaged by the bill portion for positioning the semaphore in signaling position during the energization of the solenoid, stops carried by said bracket and located in the path of movement of the pin to limit the movement of said pin in one direction, a spring connected to the pin and to the semaphore between the latter's pivot and its free end to yieldably resist the movement of the semaphore beyond its signaling position when moved from a non-signaling position, and a second spring secured to the pivoted end of the semaphore and bearing against the head and the pin during different positions of the semaphore for the purpose of providing a cushion drive between the head and the semaphore during the latter's initial movement towards signaling position and for aiding to position the armature and the head in their normal positions when the semaphore turns to and occupies a non-signaling position.

DONALD D. HUDDLESTON.