Oct. 9, 1928. 1,687,065

J. P. HANSON

SIGNAL FOR AUTOMOBILES

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Fig. 1.

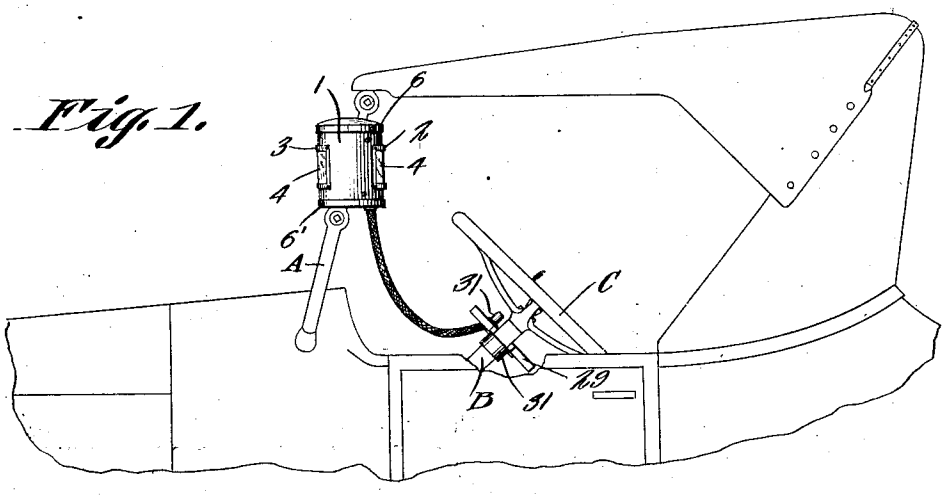


Fig. 2.

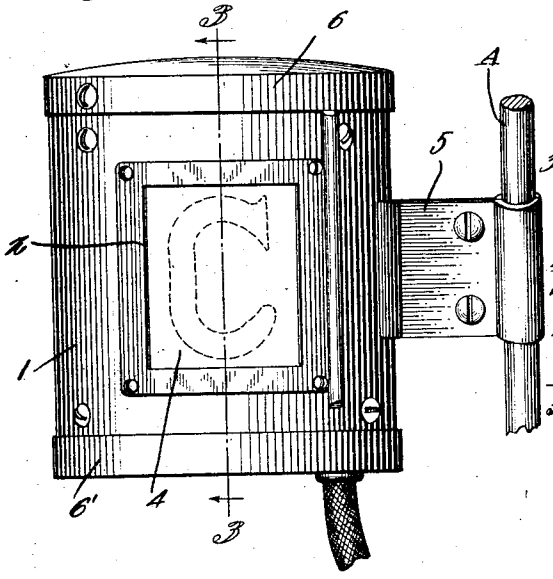
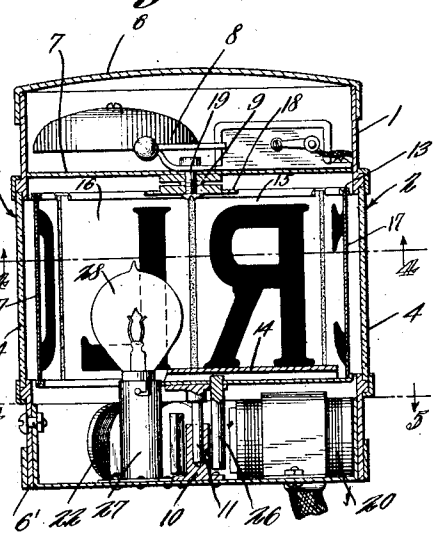


Fig. 3.



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Fig. 4.

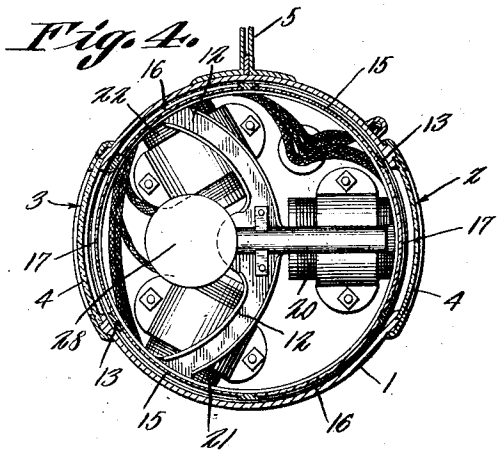


Fig. 5.

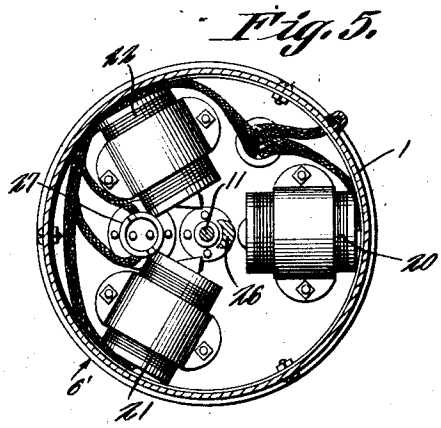
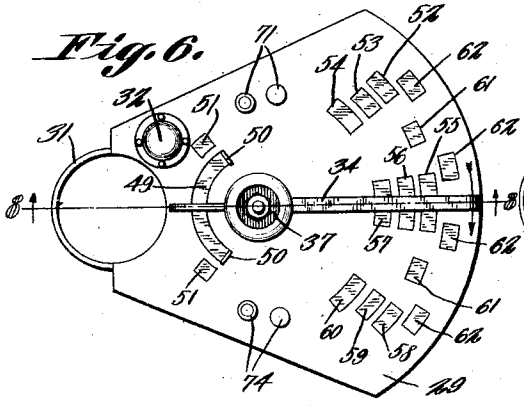


Fig. 6.



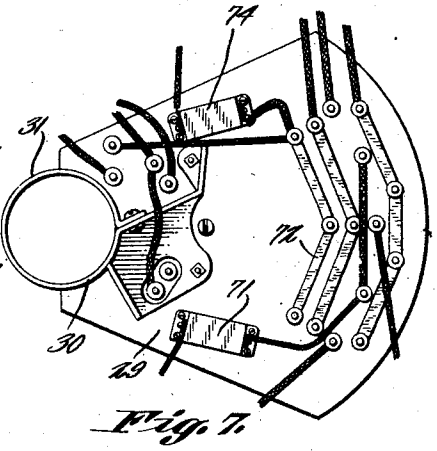
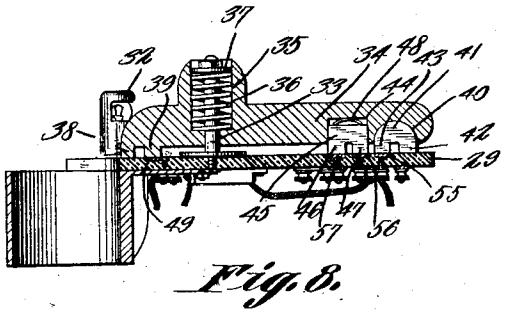


Fig. 7.

Fig. 8.



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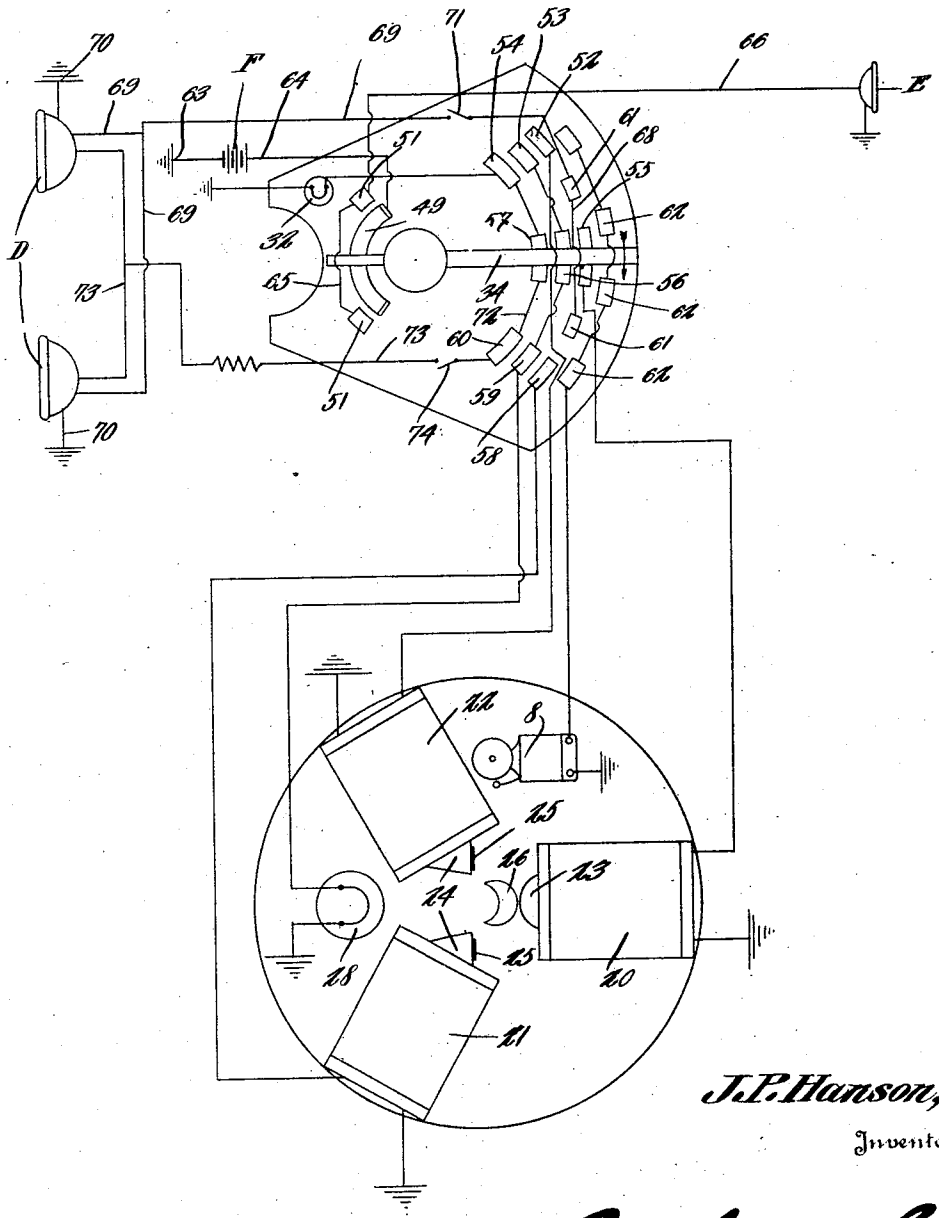
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Fig. 9.



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Patented Oct. 9, 1928. 1,687,065

UNITED STATES PATENT OFFICE.

JOHN P. HANSON, OF BUTTE, MONTANA.

SIGNAL FOR AUTOMOBILES.

Application filed June 17, 1924. Serial No. 720,648.

This invention relates to a signal device or semaphore designed primarily for use on motor vehicles, one of the objects of the invention being to provide a compact structure that can be attached readily to the side of an automobile, the structure being adapted for use with machines of either the open or closed types.

Another object is to provide a semaphore or signal device adapted to be operated electrically through the actuation of a switch located conveniently near the driver's seat and by the manipulation of which any selected signals can be displayed.

A still further object is to provide a semaphore utilizing a rotary element containing suitable characters or symbols for indicating contemplated movements of the vehicle, said characters or symbols being duplicated within the device and so positioned that corresponding characters or symbols will be displayed at both the front and back of the housing of the semaphore simultaneously, thereby to warn persons in front as well as back of the vehicle.

A further object is to provide a novel arrangement of electro-magnets cooperating with an armature extending from the rotary element so that by energizing one of the magnets the armature will be attracted thereto and bring the selected characters or symbols to exposed positions in the housing.

Another object is to provide a single lamp within the housing that will be illuminated at all times while the characters or symbols are displayed.

A still further object is to provide a novel form of switch having contacts associated therewith and controlling circuits not only through the electro-magnets and the lamp but also to an audible signal that will be sounded every time the switch is shifted for the purpose of changing the semaphore signal.

Another object is to provide means for extinguishing the headlights and illuminating the dimmers therein while the semaphore signal is being displayed, said means being controlled by the same switch that controls the semaphore.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—

Figure 1 is a side elevation of a portion of a vehicle having the present improvements combined therewith.

Fig. 2 is a rear elevation of the semaphore or signal device, the letter "C", indicating "caution" being displayed in the window of the housing.

Fig. 3 is a section on line 3—3 of Fig. 2.

Fig. 4 is a section on line 4—4 of Fig. 3.

Fig. 5 is a section on line 5—5 of Fig. 3, the magnets and lamp socket being shown in plan.

Fig. 6 is an elevation of the switch board and switch.

Fig. 7 is an elevation of the side of the switch board opposite to that shown in Fig. 6.

Fig. 8 is a section on line 8—8 of Fig. 6.

Fig. 9 is a view showing, in diagram, the complete apparatus.

Referring to the figures by characters of reference 1 designates a cylindrical housing provided with diametrically opposed windows 2 and 3 preferably closed with transparent glass as shown at 4. A bracket 5 is extended radially from the housing midway between the windows 2 and 3 and is adapted to be fastened in any suitable manner to the side A of the wind shield of the vehicle or to the side of the body of a closed car at any desired point. The housing has a top closure 6 and a bottom closure 6′ and these closures can be fastened in place by any suitable means provided for that purpose. Secured within the upper portion of the housing 1 is a disk 7 constituting a partition and on this disk is mounted an audible signal of any suitable form. In the construction illustrated an electric bell 8 has been shown generally and is of any well known construction. Obviously other signal devices such as vibrators, horns, etc., can be used instead of the bell.

A bearing 9 is provided at the center of the bottom of partition 7 and another bearing 10 is provided at the center of the top face of bottom closure 6′. Journaled within bearing 10 is a stem 11 projecting down-

wardly from an arcuate cross head 12 extending across and integral with the lower end of a cylindrical cage 13 fitted snugly within and adapted to rotate relative to the housing 1. A reinforcing arm 14 extends from the center of the cross head 11 to the wall of the cage. It will be noted that the wall of the cage includes, in the present instance, six windows arranged in three pairs, the windows of said pairs being indicated respectively at 15, 16 and 17. These windows are of glass, the glass of the windows 15 being of one color, the glass of the windows 16 being of another color and the glass of windows 17 being of another color. Suitable characters or symbols are painted or otherwise displayed on the windows. For example the windows 15 can be provided with the letter "R" indicating a right hand turn; the windows 16 can be provided with the letter "L" indicating a left hand turn; and windows 17 can be provided with the letter "C" indicating "caution".

The top of the cage 13 is provided with a spider 18 to which is connected a stem 19 journaled within the bearing 9. The two stems 11 and 19 aline and serve to hold the cage properly centered in the housing so that it can rotate freely.

Secured on the bottom closure 6' are three radially disposed electro-magnets 20, 21 and 22. An armature 26 is fixedly attached to and extended downwardly from the bottom of cage 13 and is preferably crescent-shaped in cross section with its edges or horns supported adjacent the points of the respective cores 24 while the intermediate portion of the armature is supported normally close to the core 23.

A lamp socket 27 is secured on the bottom closure 6' and is engaged by an incandescent lamp 28 supported within the cage 13 so as to illuminate all of the windows in the cage. This lamp is interposed between the windows 2 and 3 of the housing.

For the purpose of controlling the operation of the semaphore and other parts of the signal system there is provided a switch board 29 of suitable insulating material having a bracket 30 provided with a split sleeve 31 whereby the said switch board can be fastened securely to the post B of the steering wheel C. On this switch board is mounted a switch lamp 32 and secured to the switch board is a stud 33 on which a switch lever 34 is adapted to rotate. A socket 35 is formed in the switch lever and stud 33 projects into it. A spring 36 is seated in the socket and bears at one end against the inner wall of the socket and at the other end against a washer 37 adjustably mounted on the stud 33. Thus the spring serves to hold the lever pressed firmly against the switch board 29.

Lever 34 is provided at one end with spaced contact lugs 38 and 39 and secured in a socket 40 in the other end portion of the lever is a detachable plate 41 having spaced contact lugs 42 and 43. A socket 44 is formed in the lever and slidably mounted in it is a plate 45 having spaced contact lugs 46 and 47. A spring 48 is arranged in recess 44 and presses against 45 so as to hold the lugs 46 and 47 pressed firmly against the switch board.

Secured within the switch board 29 is an arcuate contact 49 having outstanding terminals 50 constituting stops for the lever. This elongated contact 49 is constantly engaged by the lug 39, and located near the ends of contact 49 are small contacts 51 adapted to be engaged by the lug 38 when the switch lever 34 is moved to either of its extreme positions.

Arranged within the switch board 29 are three radially disposed groups of contacts, the contacts of one group being indicated at 52, 53 and 54. The contacts of another group have been indicated at 55, 56 and 57. The contacts of the third group have been indicated at 58, 59 and 60. Disposed between the contacts 52 and 55 and between the contacts 55 and 58 are additional contacts 61 located in the same arc with said contacts 52, 55 and 58. The contacts 54, 57 and 60 are adapted to be engaged by the lug 46 while contacts 53, 56 and 59 are adapted to be engaged by lug 47. Contacts 52, 61, 55 and 58 are adapted to be engaged by lug 43. Lug 42 is adapted to engage additional contacts 62 carried by the switch board. Two of these contacts 62 are located adjacent and project beyond the ends of contact 55 while the other contacts 62 are located adjacent the contacts 52 and 58 respectively and extend away from said contacts 52 and 58 in the direction of the intermediate contacts 62. Thus it will be seen that when lever 34 is moved for example, in the direction indicated by the arrows, lug 42 will engage contact 62 before lug 43 leaves contact 55 and will remain in engagement with contact 62 after lug 43 leaves contact 55.

The headlights of the vehicle have been indicated at D and the stop light has been indicated at E. A source of electrical energy has been indicated at F, and is grounded as shown at 63. A conductor 64 extends from the battery or other source of electrical energy indicated at F to the elongated contact 49. The contacts 51 are electrically connected as shown at 65 and there is an electrical connection 66 between these contacts and the stop light E which, in turn, is grounded as shown at 67. The contacts 61 are electrically connected as shown at 68 and are connected by a conductor 69 to the headlights D. These headlights are grounded as shown at 70. A snap switch 71 or the like can be provided on the switch board

for separately controlling the headlights, or, in other words, for turning the headlights off and on independently of the actuation of lever 34.

The contacts 54, 57 and 60 are electrically connected as shown at 72 and a conductor 73 connects these contacts to dimmer lamps, not shown, in the headlight housings. A snap switch 74 or the like is provided for controlling the circuit to the dimmer lamps independently of the actuation of lever 34. It will be understood that under normal conditions lever 34 can be brought to any position where the lugs 46, 47, 43 and 42 are not in engagement with any of the contacts. When it is desired to caution nearby drivers or pedestrians, lever 34 should be shifted to the intermediate position shown in Figs. 6 and 9. During this movement lug 42 will first come into engagement with one contact 62, thereby completing the circuit to the audible signal 18 and giving warning of the actuation of the semaphore. Shortly after the circuit to the audible signal 18 has been closed the lug 43 will move onto the contact 55 and the lugs 46 and 47 will move onto the contacts 57 and 56 respectively. Thus a circuit will be completed from contact 49 through lever 34 to contact 55 and thence to magnet 20 which will be energized and hold the armature 26 firmly in place with the caution signals "C" displayed through the windows 2 and 3. At the same time a circuit will be completed through contact 56 to the lamp 28, which will thereby illuminate the semaphore. Another circuit will also be completed through contact 57 thereby closing a circuit to the dimmer lights provided switch 74 is closed.

When it is desired to warn of a right hand turn the lever 34 is swung to bring its contacts in engagement with the respective contacts 62, 58, 59 and 60. Contact 62 will cause a preliminary sounding of the alarm 18. Contact 58 will close the circuit through magnets 21 and cause armature 26 to be attracted thereto, thereby bringing the letter "R" to exposed position in each window 2 and 3. Contact 59 closes the circuit to the lamp 28 while contact 60 closes the circuit to the dimmer lamps provided switch 74 is closed. When lever 34 at this extreme position, it closes the circuit through contact 51 to the stop light E. Should lever 34 be moved to its other extreme position the foregoing operation would be the same with the exception that the letter "L" would be displayed a left hand turn. If the switch 71 is closed the lever 34, when in its normal position will close the circuit through contact 61 to the headlights but obviously whenever the lever is moved out of this normal position to its intermediate or either extreme position the headlights will be turned off, the dimmer lights turned on, the audible signal sounded and one or the other of the letters be displayed and illuminated in the housing 1.

What is claimed is:—

A semaphore for motor vehicles including a housing having diametrically opposed windows, top and bottom closures for the housing, a bearing on the bottom closure, an upper bearing within the housing, a cylindrical cage mounted for rotation between the windows, means extending therefrom for engagement with the bearings, said cage including an arcuate lower cross head, a plurality of windows carried by the peripheral portion of the cage for exposure successively through the windows of the housing, separate radially disposed electromagnets within the housing upon the bottom closure, an armature depending from the cage at a point remote from the center thereof, a lamp fixed upon the lower closure and supported within the cage, and means under the control of the operator for energizing any one of the electromagnets, thereby to attract the armature thereto and rotate the cage to a predetermined position, said lamp projecting past the cross-head.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JOHN P. HANSON.