W. J. BAUER.

COMBINED TAIL LIGHT AND SIGNAL FOR AUTOMOBILES.

APPLICATION FILED FEB. 6, 1913.

1,068,838.

Patented July 29, 1913

2 SHEETS—SHEET 1.

Fig. 1.

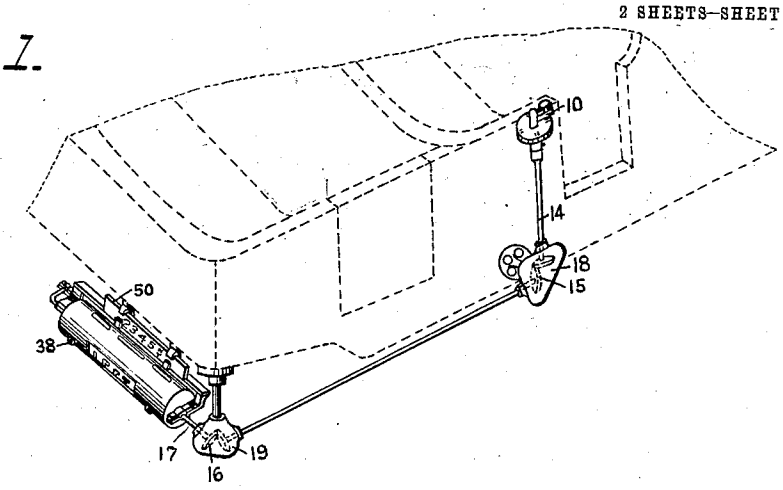
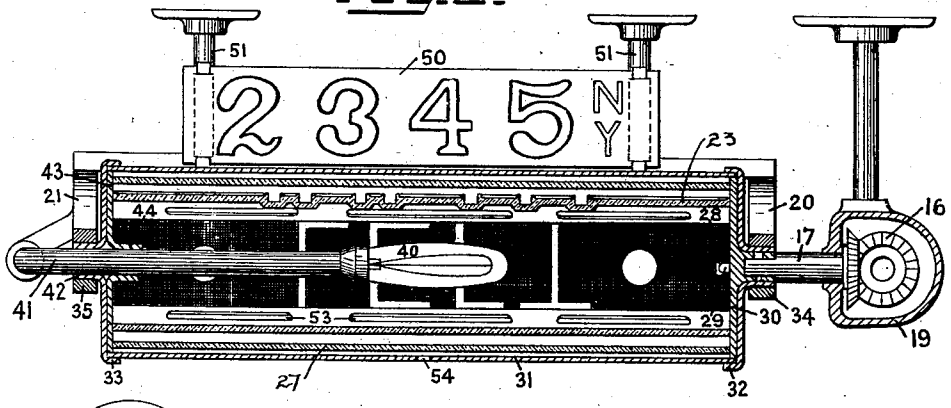


Fig. 2.



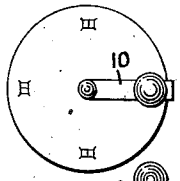


Fig. 7.

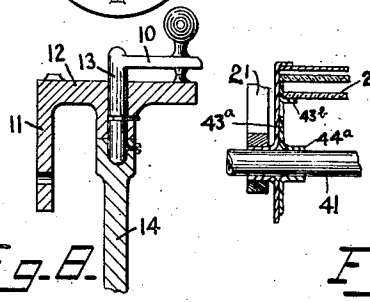
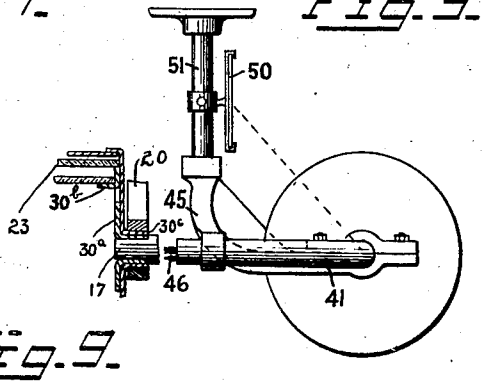


Fig. 8.

Fig. 9.

Fig. 3.



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2 SHEETS—SHEET 2.

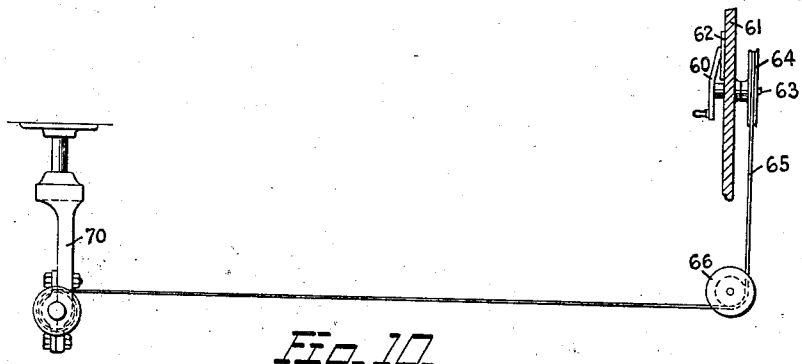


Fig. 10.

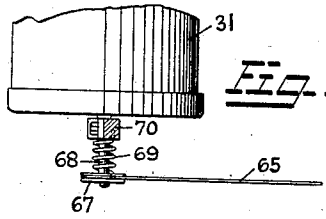


Fig. 11.

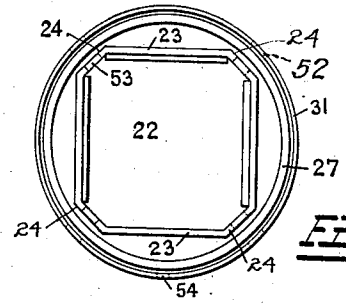


Fig. 5.

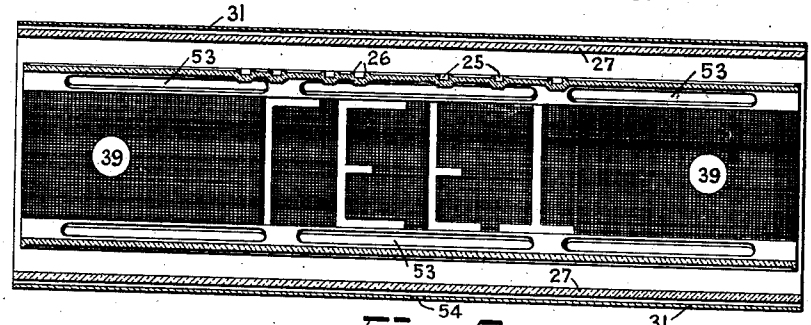


Fig. 4.

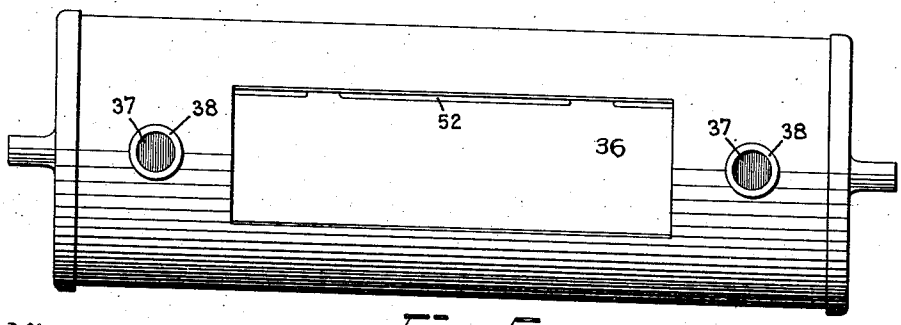


Fig. 6.

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UNITED STATES PATENT OFFICE.

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COMBINED TAIL-LIGHT AND SIGNAL FOR AUTOMOBILES.

1,068,838. Specification of Letters Patent. Patented July 29, 1913.

Application filed February 6, 1913. Serial No. 746,539.

To all whom it may concern:

Be it known that I, WILLIAM J. BAUER, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Combined Tail-Lights and Signals for Automobiles, of which the following is a specification.

This invention relates to combined tail lamps and signal devices for automobiles.

The principal object of the present invention is to provide a combined device of this character which is certain in its operation and simple and inexpensive in construction.

Another object is to provide a device of this character in which the same lamp serves to illuminate the usual red light, the signal and also the number plate of the vehicle.

The various other objects and advantages will be more fully set forth in the detailed description and the features of novelty in construction and combination of parts will be particularly pointed out in the claims.

In the drawings illustrating the preferred embodiment of this invention, Figure 1 is a perspective view illustrating my improved device attached at the rear of an automobile. Fig. 2 is an enlarged, longitudinal sectional view illustrating the device in detail. Fig. 3 is an end view looking from the left in Fig. 2. Fig. 4 is a longitudinal sectional view illustrating in detail the glass sign drum and its surrounding cylinders. Fig. 5 is an end view of the parts shown in Fig. 4. Fig. 6 is a detail elevational view of the external cylinder and end plates constituting the casing. Figs. 7 and 8 are respectively plan and longitudinal sectional views illustrating the controlling device for the signal. Fig. 9 is a sectional fragmental view illustrating a modified construction of coupling between the stub shaft and the sign drum. Fig. 10 is a diagrammatical elevational view illustrating a modified form of controller and transmission for actuating the signaling device. Fig. 11 is a plan view partly in section of a fragment of the drum illustrating the spring connection.

In operating a motor vehicle at night especially on crowded streets, it is often dangerous to change speed or to turn out of the direct course of travel without properly notifying, in some way, the driver of the vehicle to the rear. I have provided a simple, inexpensive and easily operated signal situated at the rear of the vehicle and operated by the driver to indicate what the next move of the vehicle will be as "left," "right," "reverse," etc. This signal is combined with the tail lamp in one compact device and also serves to illuminate the number plate placed adjacent thereto.

Referring in detail to the drawings, the controller 10 for the signal device is mounted in a convenient position adjacent to the seat of the driver and is connected in any suitable manner to the signaling device. In one form of my invention, the controller handle may be mounted upon a bracket 11 which is provided with a dial 12 indicating the various positions of the signal. The stem 13 of the handle is attached to a shaft 14 geared by suitable gearing 15 and 16 to the stub shaft 17 of the signal device. The gearing may be suitably disposed at the side or bottom of the vehicle and inclosed within suitable casings 18 and 19. The signal device proper is mounted upon a pair of brackets 20 and 21 suitably attached to the rear of the vehicle and consists preferably of a polygonal glass drum 22 connected in a suitable manner to be operated by the stub shaft 17. The signal drum has rectangular wide sides 23 and inclined beveled edges 24. In one or more of the sides are impressed letters constituting the various signals. Preferably I impress on three of the sides, "Left," "Right," and "Reverse" and color the fourth side red so as to provide an extended surface for the ordinary red danger signal at the rear of the automobile.

The letters as before stated are preferably impressed or sunk in the glass as at 25 and they can be readily formed during the process of the manufacture of the drum, as the latter can be, without any appreciable expense, blown into a suitable mold formed with the proper letters. The entire space surrounding the furrows or channels of the sunk letters may be then readily painted black, leaving the channels transparent, thus permitting the letters to be illuminated by a lamp placed within the drum. Preferably ridges 26 are formed about the letters, these ridges constituting means for preventing the paint from getting into the channels when the same is applied to the drum, thus obviating the necessity of providing extraneous means for preventing the ingress of paint

in the channels during the process of manufacturing. The signal drum is surrounded by a transparent glass cylinder which may rest freely in the interior of the casing hereinafter described. This cylinder protects the signal drum from moisture, dust, and other foreign substances, and if desired, the drum may rest freely within the cylinder.

For connecting the drum with the stub shaft so as to be rotated thereby, one end of the drum is provided with slots 28 which are engaged by tongues or lugs 29 projecting from an end plate 30 which is keyed or otherwise attached to the shaft 17. When the latter is rotated by the controller 10 to its various positions as indicated on the dial, it carries with it the signal drum which thereupon displays the proper signal. If desired, the connection between the end plate 30 and the drum may be loose so that the drum may rest freely upon the inclosing cylinder. In Figs. 2, 4 and 5, I have shown a certain amount of clearance between the signal drum and the cylinder and also between the latter and the surrounding casing. This has been done merely for the sake of clearness, it being understood that if desired these parts may rest snugly against one another.

The drum and the surrounding glass cylinder are inclosed in a tight casing, preferably of sheet metal, this casing being formed by a cylinder 31 provided with end plates 32 and 33 which are rigidly held in clamps 34 and 35 formed on the brackets 20 and 21. The cylinder 31 is formed with a wide vertical opening 36 through which the signal is displayed and is provided also preferably with two apertures 37 at each side of the signal opening. These apertures are closed by red glasses 38 which normally display the usual red danger signal of a tail lamp. To allow the light to pass through the drum to these red lights, transparent spaces 39 are left in each side of the drum, these spaces registering with the apertures 37.

The lamp, preferably an electric bulb, 40 is located in the interior of the drum and its tube or fixture 41 extends through a central aperture formed in the end plate 33. This aperture may conveniently be in the form of a sleeve 42 formed integrally with the plate and secured in the clamp 35. An additional plate 43 with an inwardly extending sleeve 44, through which the lamp fixture also passes may be formed to fit snugly the interior of the casing and thus constitute an additional support for the fixture. The lamp fixture may be bent around and supported from an auxiliary bracket 45 located at one side of the bracket 21 and the electric wires 46 extending therein may be connected to a source of current.

The number plate 50 may be suitably supported upon the posts 51 to which the brackets 20 and 21 may conveniently be attached. These posts may be secured to the bottom or side of the vehicle in any desired manner. To illuminate this sign from the same lamp which illuminates the signal and tail light, the casing 31 is formed with slots 52 at a suitable angle to the horizontal plane, so that the light from the lamp will be thrown upon the sign plate as indicated in dotted lines in Fig. 3. The signal drum 22 may, if desired, also have corresponding slots 53 formed in its beveled edges 24. Thus, when the drum is adjusted to its various positions, the rays of the lamp will always have a free path to the number plate, so as to illuminate the same.

It will be noted that in the above construction, the signal device is thoroughly protected from moisture and should any moisture collect between the glass cylinder 27 and the casing 31, the same may be drained through an aperture 54 in the bottom of the casing. However, no moisture can get into the interior of the glass cylinder, as it will be drained through opening 54 before it can reach the interior of this cylinder.

In the modified construction illustrated in Fig. 9, the plate 30^a is attached to the stub shaft 17, this plate being stamped out of spring sheet metal and formed with the spring tongues 30^b struck out from the body of the metal to engage the interior of the sides 23 of the signal drum. The plate 43^a is similarly stamped of spring sheet metal and formed with spring tongues 43^b struck out from the body of the metal, and also engaging the interior of the sides 23. In this construction, the signal drum is supported at both of its ends by the plates 30^a and 43^a and thus held out of contact with the glass cylinder 27. The plate 43^a may be formed with the sleeve 44^a which loosely fits about the fixture 41 while the plate 30^a is formed with a sleeve 30^c attached to the stub shaft 17.

Referring to the modified form of controller mechanism for actuating the signal drum shown in Figs. 10 and 11, the controller 60 may be mounted upon the dash board 61 of the vehicle and provided with a suitable dial 62. Fixed to the controller shaft 63 is a sheave 64 over which passes a flexible cord or chain 65. The latter is guided around an idler sheave 66 to a sheave 67 fixed to the shaft 68 of the signal drum. A spring 69 fixed at one end to the bracket 70 and at the other end to the sheave 67 tends to constantly turn the signal drum to a position in which the blank red surface is displayed. When the controller handle 60 is actuated, it rotates the signal drum through the connections above described against the tension of the spring 69. When

the controller is returned to neutral position, the spring automatically returns the drum to a corresponding position. The expense incident to the use of gear wheels and shafting is thus dispensed with.

It will be noted that my improved device is simple and inexpensive in construction, the majority of the parts being formed of blown glass or stamped sheet metal. The characters on the signal drum are very readily formed with a minimum of expense as the darkening of the surface about the characters is a simple operation not requiring any degree of skill or care. The signal drum is thoroughly protected from moisture, and should any get in between the glass cylinder and the casing, it will be drained as above set forth.

Having thus described my invention, I claim:

1. A combined signal device and tail lamp for automobiles comprising a casing having a lateral opening, a transparent cylinder mounted in the casing, a polygonal drum of transparent material mounted within the cylinder, signal characters formed on the sides of the drum, and means for rotating the drum to display the desired signals through the opening in the casing.

2. A combined signal device and tail lamp for automobiles comprising a casing having a lateral opening, a transparent cylinder mounted in the casing, a polygonal drum of transparent material mounted within the cylinder, signal characters formed on the sides of the polygonal drum, the latter being provided with slots, a shaft, an end plate connected to the shaft provided with projections engaging within the slots, and means for rotating the shaft to display the desired signal through the opening.

3. A combined signal device and tail lamp for automobiles comprising a metal casing having end plates provided with sleeves, brackets in which the casing is mounted, means for clamping the sleeves within the brackets, a lamp fixture passing through one of the sleeves into the interior of the casing, a signal drum within the casing provided with polygonal sides having characters thereon, and means for rotating the drum to display the desired signal through an opening in the casing.

4. A combined signal device and tail lamp for automobiles comprising a casing having a lateral opening, a transparent cylinder mounted in the casing, a drum of transparent material mounted within the cylinder, signal characters formed on the sides of the drum, and means for rotating the drum to display the desired signals through the opening in the casing.

5. A combined signal device and tail lamp for automobiles comprising a metal casing having end plates, brackets to which the end plates are fixed, a transparent cylinder within the metal casing, a signal drum within the transparent cylinder, said drum having transparent signal characters formed thereon, the space surrounding said characters being opaque, a lamp fixture passing axially through one end of the casing into the interior thereof, a stub shaft extending axially from the other end of the casing and a plate connected to the stub shaft, said last named plate being provided with means for engaging the adjacent end of the drum, and means for rotating the stub shaft.

6. A combined signal device and tail lamp for automobiles comprising a casing having a lateral opening, a transparent cylinder mounted in the casing, a drum of transparent material mounted within the cylinder, signal characters formed on the sides of the drum, means for rotating the drum to display the desired signal through the opening in the casing, the casing being provided with an opening at the bottom thereof for draining any moisture which may collect in the interior thereof.

7. In a device of the character described, a casing having a display opening and another opening spaced therefrom, a polygonal signal drum mounted within the casing, said drum having sides formed with translucent signal characters and dark back ground and beveled edges capable of transmitting light; means for actuating the signal device to display various signals through said display opening; means within the casing for illuminating the signals; and a number plate disposed on the exterior of the casing on a line with the illuminating means, the second opening in the casing, and the beveled, light transmitting edges of the drum, in every position of adjustment of the latter.

Signed at New York city, in the county of New York and State of New York, this 31st day of January A. D. 1913.

WILLIAM J. BAUER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."