R. B. NORTH.

ELECTRIC SIGNALING OR TELEGRAPH APPARATUS FOR USE ON VEHICLES.

APPLICATION FILED JUNE 4, 1907.

898,915. Patented Sept. 15, 1908.

FIG. 1.

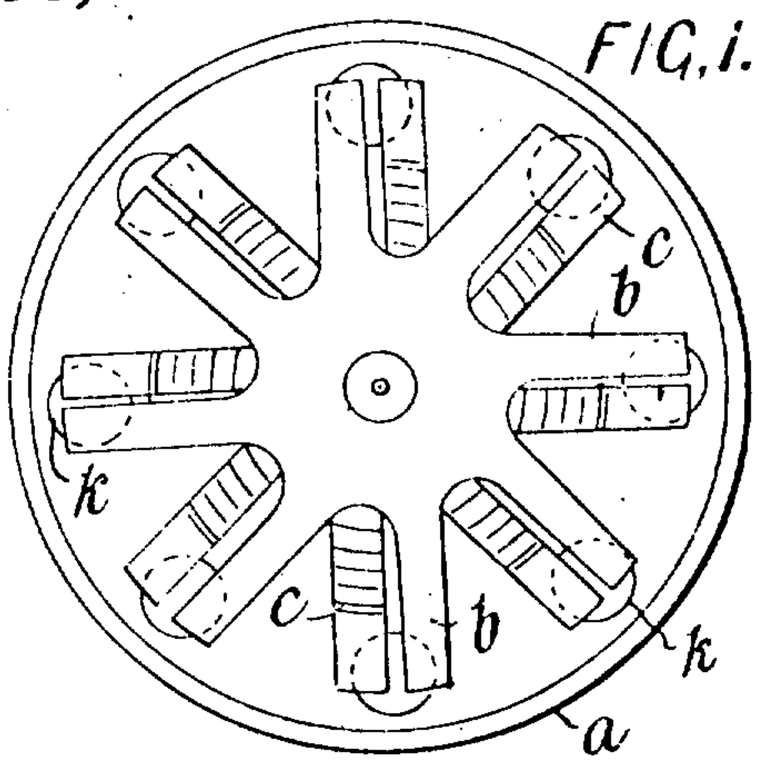


FIG. 4.

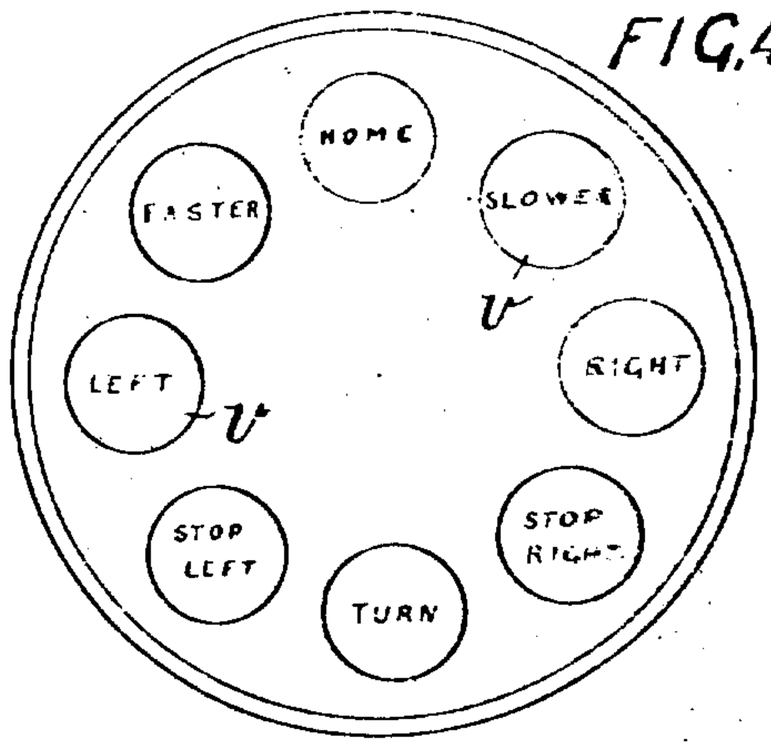


FIG. 2.

FIG. 5

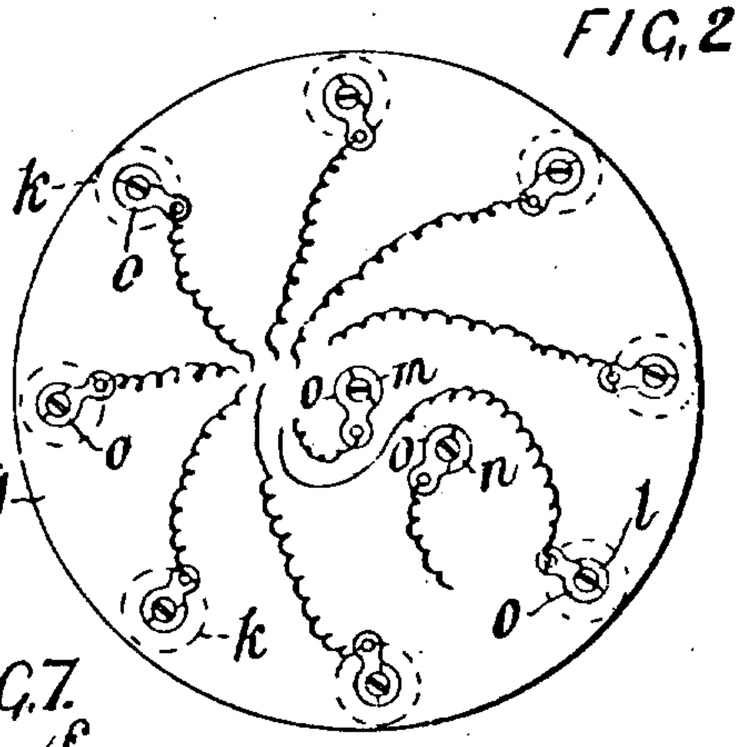


FIG. 7.

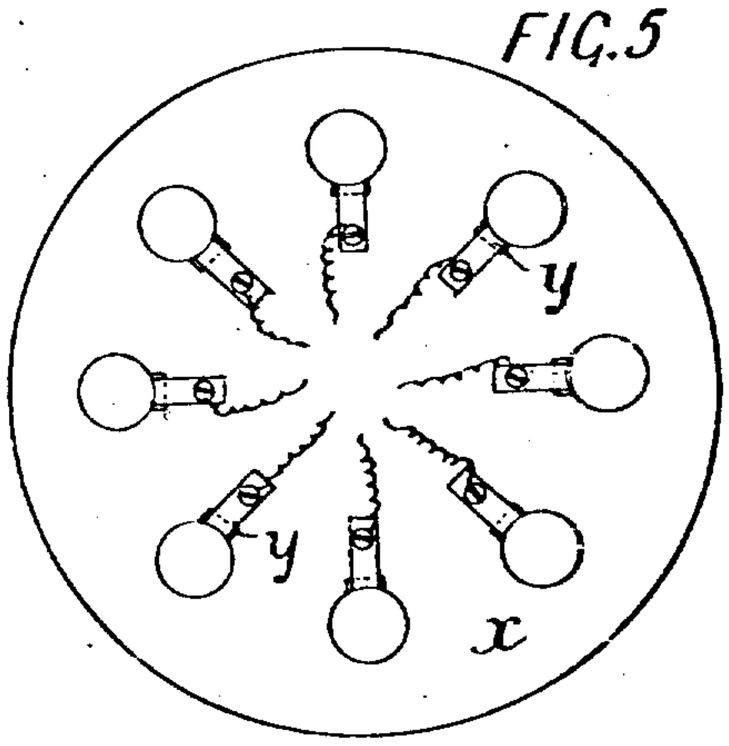


FIG. 3.

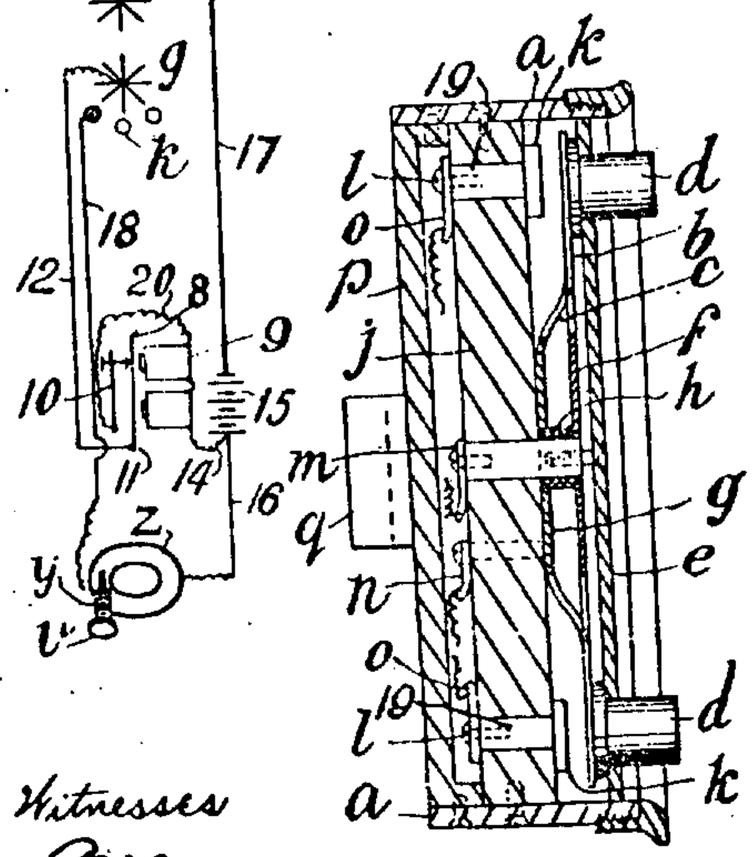
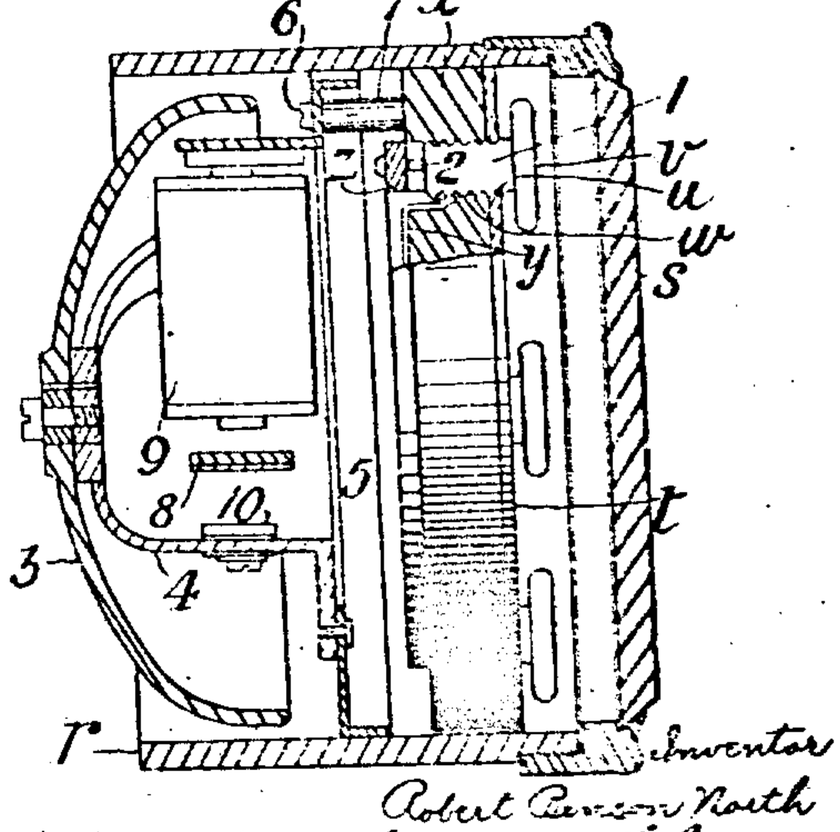


FIG. 6.



Witnesses

A. Bonnmere

Jesse N. Sutton.

Inventor

Robert Carson North

by Henry Orth & Co

Attys

UNITED STATES PATENT OFFICE.

ROBERT BENSON NORTH, OF SOHO, ENGLAND.

ELECTRIC SIGNALING OR TELEGRAPH APPARATUS FOR USE ON VEHICLES.

No. 898,915. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed June 4, 1907. Serial No. 377,247.

To all whom it may concern:

Be it known that I, ROBERT BENSON NORTH, a subject of the King of Great Britain, residing at No. 14 Soho Square, Soho, in the county of Middlesex, England, have invented an Improved Electric Signaling or Telegraph Apparatus for Use on Vehicles, of which the following is a specification.

This invention relates to an improved signaling or telegraph apparatus chiefly applicable for conveying instructions to drivers of motor cars from a passenger in the carriage.

The improved apparatus is of course applicable to any vehicle in which the person controlling the means of locomotion and steering is separated from the other occupant or occupants of the vehicle and is of that type of apparatus in which a number of lamps in a casing, and a bell, are controlled by a corresponding arrangement of push buttons in a second casing each button on being depressed being adapted to cause the corresponding lamp to illuminate a certain order or signal and at the same time to cause a bell to ring.

According to this invention that part of the apparatus situated in front of the driver comprises a casing with a suitable dial and having combined visual and audible signaling devices arranged therein and connected in an improved manner hereinafter set forth and that part of the apparatus situated in the passengers compartment of the vehicle comprises a casing with a corresponding dial and having an improved arrangement and construction of duplex switches for simultaneously controlling the lighting and bell ringing circuits. The switches and the visual devices are labeled in such a manner and situated in such positions that the passenger can instantly signal and the driver instantly interpret an order as to starting, direction, speed, or stopping.

The arrangement, construction and combination of parts constituting the improved apparatus will be described with reference to the accompanying drawings in which:—

Figure 1 is a front elevation of the switch device with the dial and press buttons removed. Fig. 2 is a rear elevation of the block upon which the switches seen in Fig. 1 are supported. Fig. 3 is a part side elevation and part central longitudinal section of the switches and the casing containing them. Fig. 4 is a view of the dial of the visual and audible signaling device. Fig. 5 is a rear view of the circular block behind such dial showing the method of making contact with one terminal of each lamp. Fig. 6 is a part elevation and part central longitudinal section of the visual and audible signaling device and Fig. 7 is a diagrammatic view showing the electrical connections.

The apparatus comprises a more or less circular casing *a* Figs. 1 and 3 containing eight or other appropriate number of circularly or radially arranged duplex spring contact switches *b c*, *b c* each of which is controlled by a press button *d* or the like, but of course a single button carried in a revoluble member or a revoluble handle might be arranged to operate any one of the switches *b c*. The switches are covered by a dial *e* and if press buttons *d* are used they may protrude as shown in Fig. 3 through holes in the dial *e* being suitably flanged at one end to prevent their ejection through the apertures in the dial. The switch at the top of the dial is marked say "Home" the one at the bottom "Turn round", while that on the extreme left is marked "Left" and that on the opposite side "Right". Intermediate switches may be labeled "Faster", "Slower", "Stop on left", and "Stop on right" or with other convenient designations and each of such designations is suitably placed adjacent to the proper button. The switches are preferably in the form of a pair of eight armed or bladed spider like devices *f g* one of such devices viz the one *g* carrying the arms *c* being arranged behind the other *f* carrying the arms *b* so that its arms or blades *c* alternate with those *b* of the other device *f*. The arms *c* are preferably bent so that their outer ends lie in about the same plane as the arms *b*. The spiders *f g* are insulated from one another say by mounting *f* upon an insulating block *h* and they are supported upon a disk *j* of non-conducting material arranged in the casing *a* upon which disk *j* are arranged eight segmental, or circular or other shaped, contact plates *k* each plate being arranged to come behind one blade of each spider as seen in Fig. 1. Terminal screws *l*, see also Fig. 2, are screwed into studs 19, from the back of the disk *j*, the studs 19 being connected with the corresponding plates *k* and other terminal screws *m n* are connected with the spiders *f* and *g* respectively. Hook like devices *o*, to which are connected the various wires, as shown in Fig. 2, are adapted to take beneath

the heads of such screws so that upon the tightening of the latter good contact is made and the wires are easily connected or disconnected without entirely removing the screws. The various wires leading to the plates *k* are conveniently plaited or bound together to form a cable the wires to the spiders *f* and *g* being let loose to facilitate their connection. The casing *a* may be closed at the back by a metal cover *p* having lugs *q* or brackets for securing the casing in position, the cable and loose wires being passed through an aperture in such cover.

The apparatus for the driver, which apparatus may for instance be fixed to the dashboard of a carriage, comprises a casing *r*, Figs. 4 and 6, behind the glazed front *s* of which is a dial *t* having eight holes *u* through which protrude eight small incandescent electric lamps *v*. The lamps *v* are preferably flattened as seen in Fig. 6 their rear portion being opaque as shown by the thick line and their front or flattened portion having indications corresponding to those given above. Each lamp *v* is screwed into a hole *w* in a non-conducting disk *x* fixed in the casing *r* and is adapted to make contact with a spring *y* in the side wall of the hole *w* and with a ring *z* fixed to the rear face of the disk *x*. As seen in Figs. 5 and 6 the springs *y* also are fixed to the rear face of the disk and are bent over and project into the holes *w* so that upon the lamps *v* being screwed in, the metal screw sleeves 1 around the plug parts of the lamps and constituting one terminal thereof in known manner, make contact with the projecting springs *y* and when the lamp is screwed right home contacts 2 upon the ends of the plug portions make contact with the ring *z*. To the rear face of the disk *x* is also connected a bell preferably of the repeating type in which the hammer is carried by the trembler. This bell comprises a gong 3 fixed to a frame 4 which in turn is secured to a ring 5 conveniently fixed to the disk *x* by screws 6 and distance sleeve pieces 7. The armature or trembler 8 carrying the hammer being vibrated by the coil 9 makes and breaks contact with a spring 10 but the bell may be of any other known type. The electrical connections are seen in Fig. 7. One terminal 11 of the bell is connected by a flexible wire 12 with one of the aforesaid spiders viz *g* in the casing *a* in the passengers compartment and the other by wire 14 to one pole of the battery 15. This pole of the battery 15 moreover, is connected by wire 16 to the ring *z* which forms a common terminal to all of the lamps *v* as described and the other pole is connected by wire 17 to the second of the aforesaid spiders viz *f*. The various segmental or other contact plates *k* are connected by wires 18 with the corresponding lamp contacts *y* situated in the side walls of the holes *w* aforesaid. When therefore a button *d* is pressed in the passengers compartment one arm of each spider viz an arm *b* and an arm *c* are pressed on to one of the contact plates *k* and current then flows from the battery 15 through wire 17 one spider *f* to the contact plate *k* through the flexible connection 18 to the side contact *y* of the corresponding lamp through the latter to the ring *z* and thence by wire 16 to the battery thereby lighting the corresponding lamp *v* and signaling to the driver the desired order. At the same time current flows from the contact plate *k* through the other spider *g* and by wire 12 the bell terminal 11 through trembler 8 to contact 10 thence by wire 20 to the coil 9 and thence by wire 14 to the opposite pole of the battery. It will be understood that a rear cover might be provided for the casing *r* but in the ordinary way the gong 3 is sufficient cover in itself. Lugs similar to the lugs *q* are provided on the casing *r* for fixing it to say the dash board of a motor car.

The present improvements are not limited to the employment of any particular kind of lamp or switch nor is it limited to the number shown but the arrangement of the parts hereinbefore described constitutes a neat and cheap apparatus not likely to get out of order and particularly suited for use upon a motor road vehicle. Assuming the casings be made circular as shown this not only produces a much smaller and more convenient apparatus than any made heretofore of which applicant had any knowledge but it permits of the lamps to the left and right of the vertical diameter of the dial *t* being marked as shown, so that the driver by a mere glance can recognize the order as much by its position as by the characters of the designations belonging to each lamp.

What I claim as my invention, and desire to secure by Letters Patent is:—

1. In an electric signaling apparatus for communicating instructions from a passenger in a vehicle to the driver thereof the combination with a switch device comprising a casing, a plurality of contact plates each contact plate having a separate designation or order, two series of radial spring arms or blades, and means for causing said radial spring arms to contact with said contact plates, of a source of electricity, an audible signaling device, an electric circuit for said audible signaling device controlled by the said switch device, a plurality of electric lamps, a casing to contain said lamps each lamp having a separate designation or order and a plurality of electric circuits, one for each lamp, controlled by the said switch device substantially as set forth.

2. In an electric signaling apparatus for communicating instructions from a passenger to the driver of a vehicle the combination with a switch device comprising a casing,

a plurality of contact plates in said casing, two series of radial spring arms or blades to form a plurality of pairs and a plurality of pushes for causing pairs of said spring arms to contact with said contact plates each of said pushes having a separate designation or order, of a source of electricity, an audible signaling device, an electric circuit for said audible signaling device controlled by the said switch device, a plurality of electric lamps each lamp having a separate designation or order, a casing to contain said lamps, and a plurality of electric circuits, one for each lamp, controlled by the said switch device substantially as set forth.

3. In an electric signaling apparatus for communicating instructions from a passenger to the driver of a vehicle, the combination with a switch device comprising a casing, a plurality of contact plates in said casing, two series of radial spring arms or blades to form a plurality of pairs, a blade of one series and a blade of the other series forming a pair and adapted to contact with a contact plate, and a plurality of pushes for causing pairs of said spring arms to contact with said contact plates, each of said pushes having a separate designation or order, of a source of electricity, a casing, an audible signaling device, an electric circuit for said audible signaling device controlled by the said switch device, a plurality of electric lamps, each lamp having a separate designation or order, one contact of each of said lamps connected to a contact plate, the other contact of each of said lamps connected by a common conductor to one pole of the source of electricity, the said contact plate and the conductor from the other pole of the battery connected to the said switch device, substantially as set forth.

4. In an electric signaling apparatus for communicating instructions from a passenger to the driver of the vehicle, a visual signaling device comprising a casing, an insulator disk in said casing, a circular series of perforations in said disk, a lamp terminal contact in each of said perforations, a plurality of electric lamps, each having a separate designation or order and fitting into one of said perforations, and a contact ring fixed to the rear of said disk and common to all of the other terminals of the lamps, substantially as set forth.

5. In an electric signaling apparatus for communicating instructions from a passenger to the driver of the vehicle, a visual signaling device comprising a casing, an insulator disk in said casing, a circular series of perforations in said disk, a lamp terminal contact in each of said perforations, a plurality of electric lamps, each having a separate designation or order and fitting into one of said perforations, a contact ring fixed to the rear of said disk and common to all of the other terminals of the lamps, and an audible signaling device arranged at the rear of and concentric with the disk supporting the lamps, said signaling device being in circuit with each of said lamps, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT BENSON NORTH.

Witnesses:
FRANK F. MEADOWS,
H. D. JAMESON.