N° 26,082 A.D. 1913

(*Under International Convention.*)

Date claimed for Patent under Patents and Designs Act, 1907, being date of first Foreign Application (in Italy), 5th July, 1913

Date of Application (in the United Kingdom), 13th Nov., 1913

At the expiration of twelve months from the date of the first Foreign Application, the provision of Section 91 (3) (a) of the Patents and Designs Act, 1907, as to inspection of Specification, became operative

Accepted, 28th Jan., 1915

COMPLETE SPECIFICATION.

Improvements in or relating to the Controlling Apparatus for Motor-cars.

We, the Firm LANCIA & Co., of 99, Via Monginevro, Turin, Italy, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to means for controlling electric circuits in a motor car, of the kind comprising rigid parts mounted within the steering column.

According to the present invention a tube mounted within the steering column so as to rotate therein, serves to operate a contact device on the extension of the column, and within the said tube is mounted a rod kept normally in a raised position by a spring and which, as it can move axially by pressure on an end button, serves for closing a separate circuit, for instance that of the horn.

Thus according to the present invention it is possible to control two independent contacts with a single rod, owing to the fact that the latter can not only rotate about its axis, but can move longitudinally so as to bring into engagement a contact device mounted at its lower end.

The accompanying drawing shows, by way of example, a construction according to this invention.

Figure 1 being a side elevation of the steering gear, and

Figure 2 a longitudinal section of its upper end.

Figure 3 is a plan of the central portion of the steering wheel.

Figure 4 a detail of the electric contacts mounted at the lower end of the steering gear,

Figure 5 shows in detail the method of fitting the inner tubes, and

Figure 6 is an outside view of the handle for operating a portion of the electric contact device.

As will be seen from Figures 1—3, the hub 1[1] of the steering wheel 1, secured on the column 2 by means of the nut 3, carries two independent levers 4 and 5, the former of which, secured to the tube 6, is used for instance for operating

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the carburettor cock, whilst the lever 5 secured to the tube 7, is used for advancing ignition.

The rotation of the levers 4 and 5 can be transmitted to the parts to be operated, by means of helical slots, as shown in Figure 5 in which the tube 6 is provided at the bottom end with a thickened portion 6^1 in which is made a slot 8 with which engages the roller 9 pivoted in the collar 10 longitudinally adjustable on the column 2 and carrying a ring 11 connected by levers 12 to the part to be controlled (Figure 1), that is to say, to the lever 13 of the carburettor cock.

In an analogous manner, the tube 7 arranged in the interior of the tube 6 and secured to the lever 5, is provided with a thickened portion 7^1 with a helical slot 14, with which engages a roller 15 pivoted in the collar 16, the ring 17 of which is connected by means of levers 18 (Figure 1) to the magneto 19.

In the interior of the tube 7 is mounted another tube 20 secured at its upper end to a handle 21 which, as shown in Figure 6, may be provided with openings intended to uncover signs or figures marked on a stationary surface 22 enabling the position of the handle itself to be ascertained.

Finally, in the interior of the tube 20 is further mounted, in a loosely rotatable and longitudinally adjustable manner, a rod 23 provided at the upper end with a button 24.

At their lower ends, the tube 20 and the rod 23 (Figures 1 and 4) are connected to two independent elements of an electric contact device 24^a mounted on the steering gear casing and capable of closing the various circuits by the movement of its parts when they are operated.

In the construction shown in the accompanying drawing, assuming that there are in the circuit supplied by a dynamo and a storage battery, two lamps (circuit 25), a rear light (circuit 26), two head lights (circuit 27), a lamp placed on the dash-board of the car for the control apparatus (pressure gauges, ammeters *etc.*,) (circuits 28) and an electric syren or the like (circuit 29) whilst the wires 30 and 31 lead respectively to the storage battery and to the dynamo, there will be for the fixed contacts of the contact device, the arrangement shown in Figure 4, whilst the drum 32 of insulating material, secured to the tube 20, carries the contacts 33, 34, 35, 35^1, 36, and 36^1 arranged on the cylindrical surface of the drum in such a manner that, by rotating the latter, it is possible to bring about in the known manner all the desired combinations, that is to say, (1) the whole extinguished; (2) head lights and rear light lighted, (3) lamps and rear light lighted, and (4) the head lights, lamps and rear light lighted.

The drum 37, rigidly secured to the central rod 23, is constituted by a small ebonite cylinder on which is longitudinally mounted a metallic plate 37^1 occupying only a portion of its surface. In this way the metallic plate can be brought into contact with two adjoining contact pieces 38 to which are connected the two wires of the circuit 28 of the lamp for lighting the measuring instruments, or into contact with the brushes 39, 39^1 to the first of which is connected the wire 40 communicating with the magneto switch, while the brush 39^1 is in contact with the mass so that in these conditions the wire 40 is brought to earth through the plate 37^1 of the drum 37 and the ignition is interrupted.

By means of the said drum 37 it is therefore possible to bring about the following combinations: engine running and the dashboard lamp extinguished, when there is no contact either with the brushes 38 or with the brushes 39; lamp lighted when the brushes 38 are in contact, and the engine stopped and the lamp extinguished, when contact is established with the brush 39.

The drum 37 is further provided at the lower end with a ring 41 of conducting material mounted on an insulating part 42. This ring 41 can be brought into contact with the ends 43 of the wires 29 leading to the hooter. A spring 44 normally keeps the drum 37 away from the contacts 43, so that the circuit of the hooter is closed by pushing the button 24 of the rod 23.

It is advisable to provide these rotary drums of the contact device with stops, such as that shown at 45 in Figure 4, in order to prevent vibrations of the car from altering the position of the contact device.

It is also advantageous that the parts controlling the electric circuits, should remain independent of the rotation that the steering tube must be given with the tubes 6 and 7. To that end, between the tube 20 and the tube 7 is arranged another tube 46 soldered at 47 to the steering gear casing (Figure 4) and the fixed disc 22 can be mounted on the said tube 46 below the handle 21.

The construction described therefore enables the driver to operate the levers 4 and 5 without taking his hands from the wheel, and to light or put out the head lights, lamps *etc.*, by operating the handle 21, to light another lamp or to cut off ignition by turning the button 24 and to operate the hooter by pushing the said button, without the contacts having to be brought to the steering wheel, which would require a different and delicate laying of several wires.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. Apparatus as set forth for controlling electric circuits in a motor car, in which a rod is arranged within a tube which is mounted in the steering column and is adapted to operate a drum of the contact device, the said rod being kept normally in a raised position by a spring and connected to a drum provided with a contact piece on its flat end wall, the arrangement being such that two independent series of circuits can be controlled independently by turning and axially displacing the said drum.

2. The controlling apparatus for motor-cars substantially as described or as illustrated in the accompanying drawing.

Dated this 13th day of November, 1913.

BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London, E.C.,
Chartered Patent Agents.

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LANCIA & CO'S COMPLETE SPECIFICATION.

(2 SHEETS)
SHEET 1.

[This Drawing is a reproduction of the Original on a reduced scale]

Fig.1

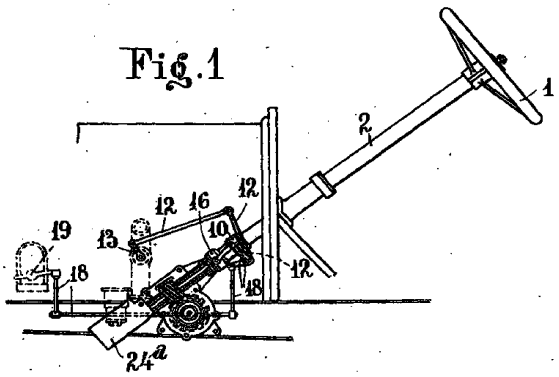


Fig.3

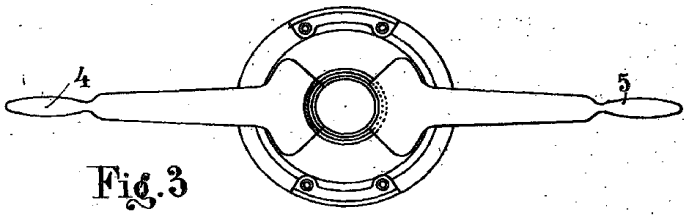
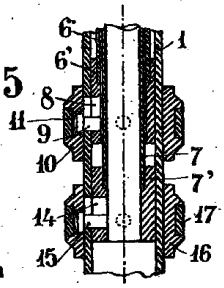


Fig.5



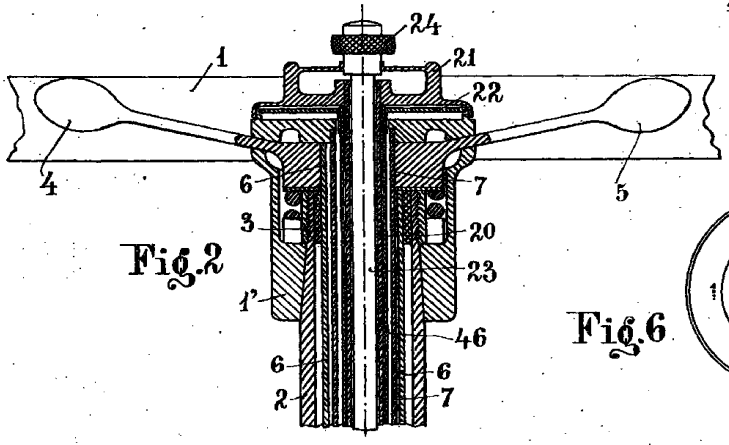


Fig.2

Fig.6

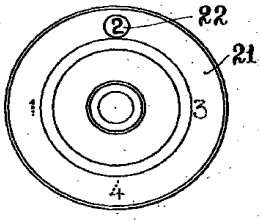


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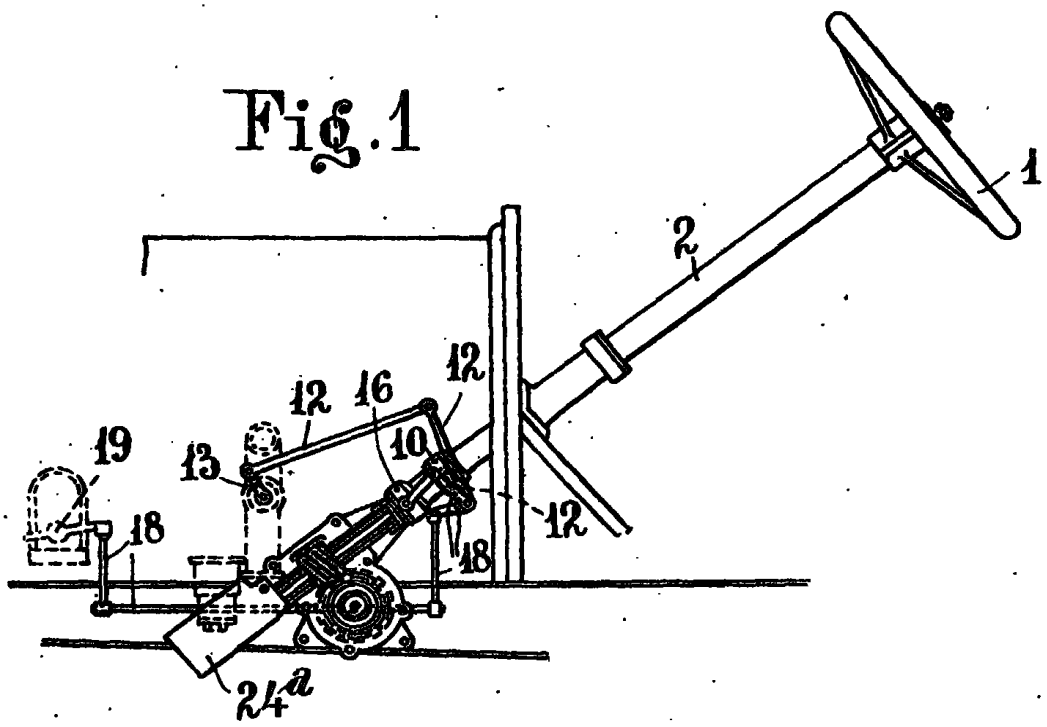
Fig.1



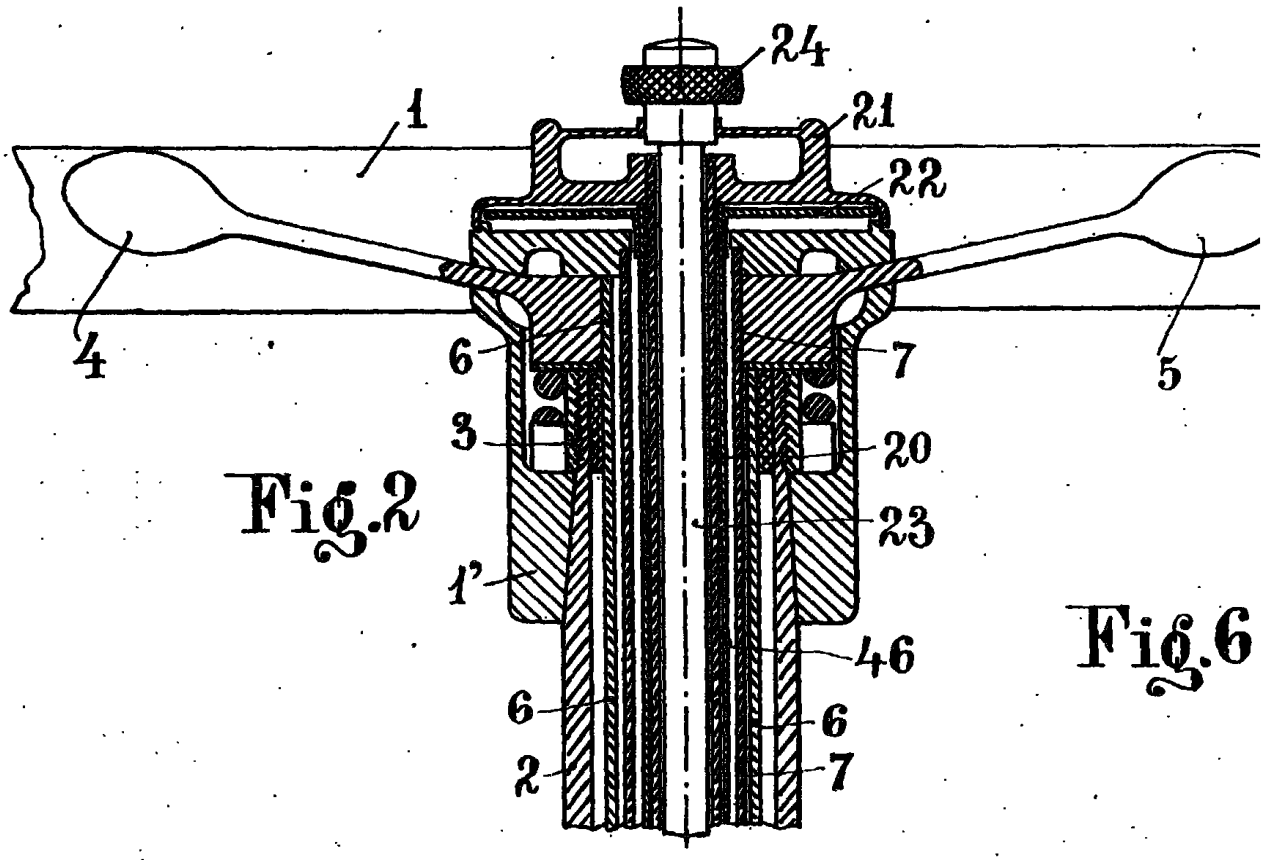


Fig.2

Fig.6

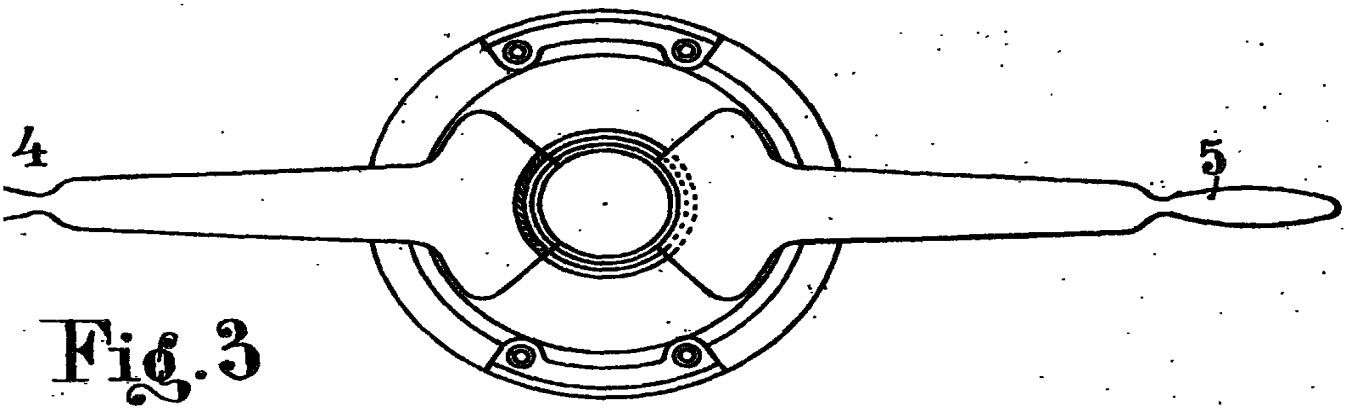


Fig. 3

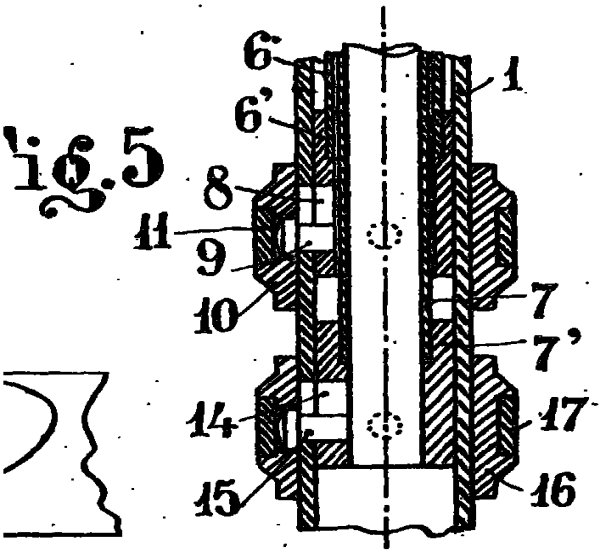
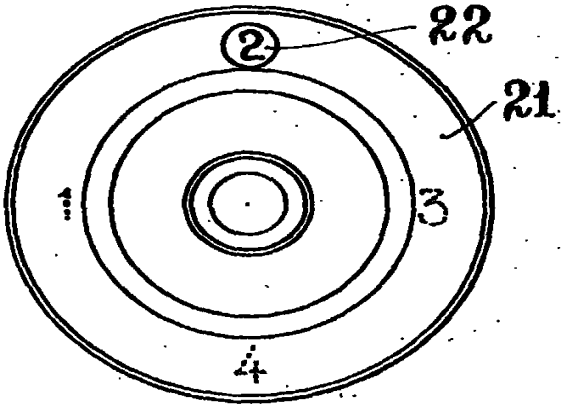


Fig. 5



(2 SHEETS)
SHEET 2.

[This Drawing is a full-size reproduction of the Original.]

Fig. 4