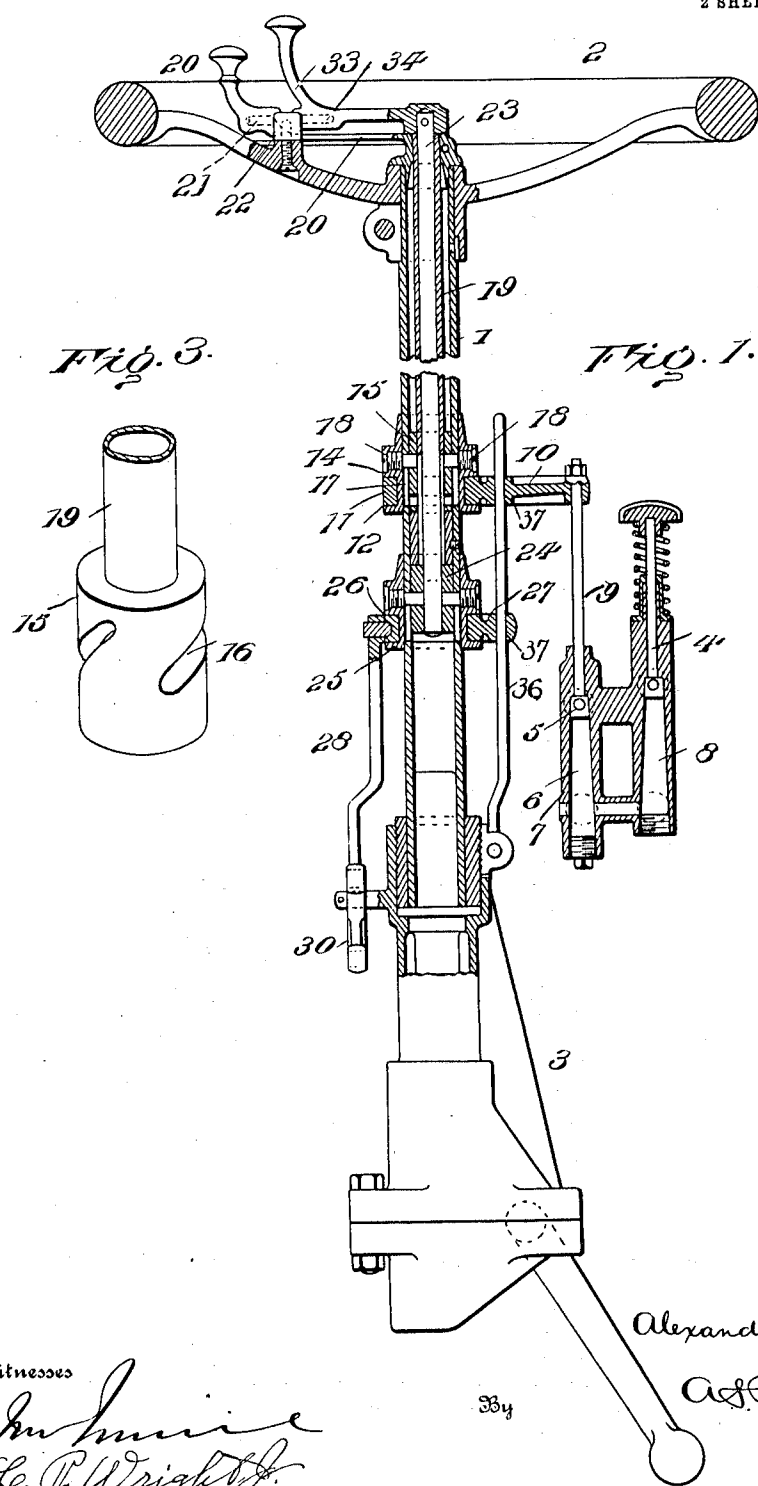


A. WINTON.
CONTROLLING MECHANISM.
APPLICATION FILED DEC. 5, 1904.

1,040,479.

Patented Oct. 8, 1912.

2 SHEETS-SHEET 1.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 2.

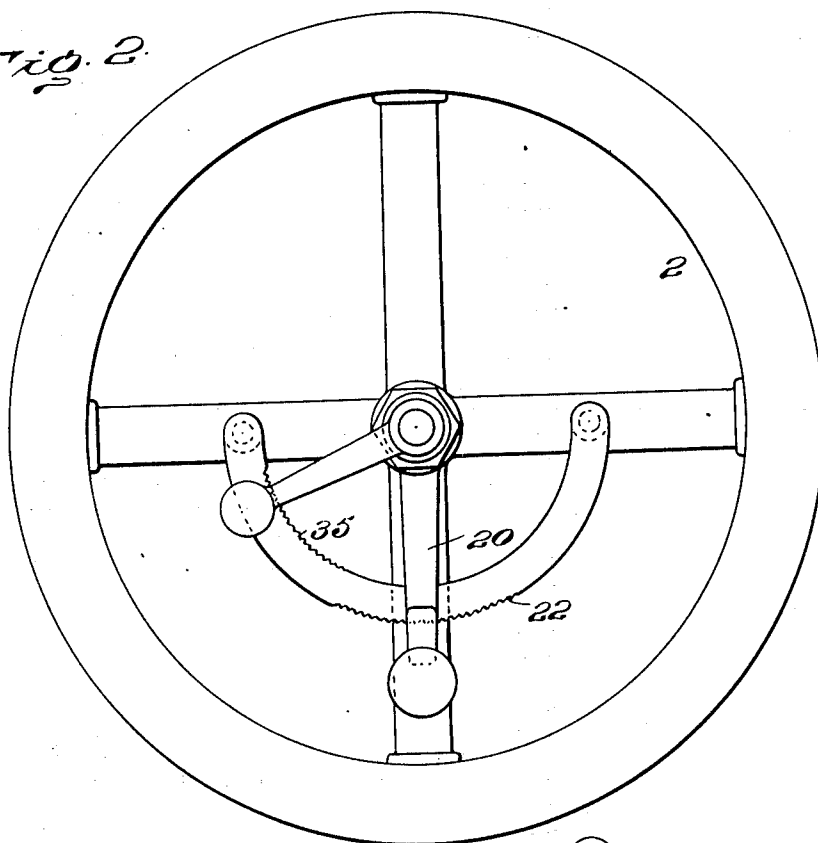
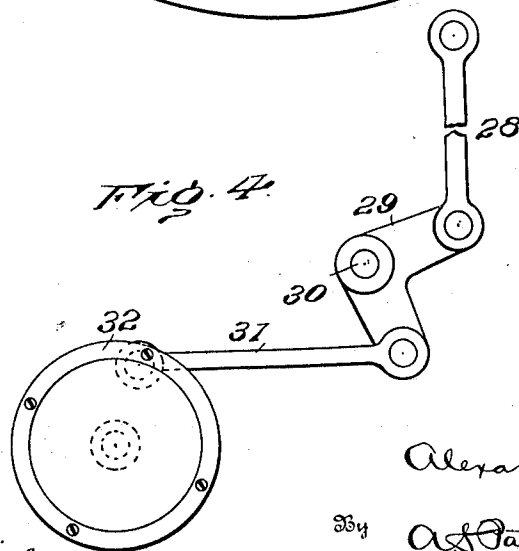


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CONTROLLING MECHANISM.

1,040,479.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed December 5, 1904. Serial No. 235,487.

To all whom it may concern:

Be it known that I, ALEXANDER WINTON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Controlling Mechanism, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to improvements in controlling mechanism for self propelled vehicles.

The present invention pertains to a controlling mechanism, the manual operating part of which is arranged within the steering tube.

15 In the accompanying drawings, Figure 1, is a vertical section of a steering tube with my invention applied thereto. Fig. 2, is a top plan view of the steering wheel showing the coöperating parts of my present improvement. Fig. 3, is a detached perspective view of one of the cams which are located within the steering tube. Fig. 4, is a detached side view of the lever connection to an ignition lead device.

20 In carrying out my invention, the ordinary steering tube 1 and steering wheel 2 may be used. To the lower end of this steering tube will be attached any desired form of mechanism for connection with the steering wheel of the vehicle, whereby the rotation of the steering tube will cause the movement of the steering wheels of the vehicle. I do not here show any form of mechanism at the lower end of the steering tube, as this does not constitute any part of my present invention.

25 The lower end of the steering tube 1 is suitably journaled in the upper portion of a casting 3, and preferably the mechanism co-acting with the lower end of the steering tube will be located within the casting or housing 3. As is well known by those skilled in the art of explosive engine control, this is effected in two ways, which are in the most approved engine control, conjointly used. These two controls almost universally used, consist of first, means to control the amount of explosive charge delivered to the engine cylinder or cylinders, and secondly,

means for varying the time of igniting the charge in respect to the cycle of the engine, usually referred to as ignition-lead or spark-control. In carrying out my present invention, both of these means are employed, and they are so conjointly arranged that they are capable of separate control.

30 The means here illustrated for controlling the amount of charge delivered to the engine cylinder or cylinders, is compressed air to control the inlet valve or valves of the engine in the manner disclosed in my U. S. Patent #626,122, of May 30th, 1899, and to which reference is made for an understanding of the principle and operation of this compressed air-controlled system. It is sufficient for the understanding of the present invention as applied to this air-controlling system, to say that the air pressure acting on the inlet valves is controlled by a valve. This valve is placed at a point in the vehicle to be operated by the driver, so that he may vary the air pressure acting upon the engine inlet valve and thus control its amount of movement and consequently the size of the charge delivered to the engine cylinder. In my aforesaid patent, the air valve for controlling the speed of the engine when driving the vehicle, is arranged to be operated by the foot of the driver. The corresponding foot-operating valve is shown in the present application and designated by the reference letter 4.

35 Thus far, I have only described those features of my present disclosure which are shown in my prior patent, and I will now proceed to explain those features which I believe to constitute my present invention.

40 One feature of my present invention is to provide an air valve for controlling the air-controlled system which can be operated by the hand of the driver. In the drawings, this air valve is designated by the reference numeral 5, and moves within a tapered air passage-way 6 formed in a casting 7, the said air passage being in communication with the air-controlling system, and also in communication with the passage way 8 in which the foot-operated valve 4 is located. The stem 9 of the valve 5 is suitably attached to an arm 10, and this arm 10 is

formed as a part of or connected with a ring 11. This ring 11 is located in a groove 12 formed in a vertically-movable sleeve 14 which surrounds the steering tube 1. Located within the steering tube is a concentrically-arranged oscillating sleeve 15, which is provided with spiral slots 16. The steering tube is provided with vertical slots 17, and passing through the sleeve 14, the slots 17 and extending into the spiral cam-slot 16, are the screws or pins 18. A tube 19 is attached to the sleeve 15 and extends upward through the steering tube 1 and projects above the upper end thereof. Connected with the projecting end of the tube 19 is a handle 20, and this handle projects laterally outward and is provided with a spring-pressed pawl 21 adapted to engage a notched segment 22 attached to the steering wheel 2.

When the steering wheel and tube are turned for guiding the vehicle, the sleeve 14 is turned therewith and simply rotates within the concentrically-arranged ring 11, without imparting any motion whatever to the ring and its arm 10. When, however, the handle 20 is moved or oscillated, the cam sleeve 15 is correspondingly oscillated, thus causing the sleeve 14 to move up or down, according to the direction in which the lever or handle 20 is moved, and correspondingly moves the valve 5 up and down in the passageway 6, and thus will control the air pressure in the air-controlling system. This arrangement enables the operator to adjust the air pressure to a nicety by hand, and to, if desired, more suddenly control the air pressure by the foot-controlled valve 4. It also enables the operator to use either his foot or his hand for controlling the air pressure, or both, as conditions may make it desirable. The hand-control is more capable of a uniform air pressure-control, as it will not be affected by the jar of the vehicle, as will the foot-control, and is also capable of being adjusted at any desired point and there remain, whereas the foot-control is capable of a more instant change in the air pressure, and consequently a more sudden control of the motor. The two together, therefore, cooperate to enable the driver to control the speed of a motor to a nicety, without being affected by the jar of the vehicle, and to control the motor suddenly. Furthermore, the foot-control is of great advantage when the driver has his hands occupied in steering the vehicle, as when in close places, or when making short turns, or when running rapidly over a rough road, thus furnishing him the means of control independent of his steering, and also furnishing him a means of control capable of adjustment to a fixed point.

Passing through the tube 19 is a concentrically arranged rod 23 which passes below

the tube 19 and is attached to a cam-sleeve 24 similar to the cam sleeve 15, and located outside of the steering tube 1 is a longitudinally-movable sleeve 25, and this sleeve 25 is similar to the sleeve 14 and provided with a groove 26 similar to the groove 12 of the sleeve 14, and placed within this groove 26 is a ring 27. Attached to this ring 27 is a link 28, the opposite end of the link being attached to a bell-crank lever 29 pivoted at the point 30 on the upper end of the housing 3. The opposite end of the bell-crank 29 is connected with one end of the link 31, and the opposite end of the link 31 is connected with any desired form of shiftable electrical make-and-break or variable electric ignition-lead device 32. I do not here show any particular form of variable ignition-lead 32, for this forms no part of my present invention. Any of the well known forms may be used and suitably connected with the ring 27.

The upper end of the rod 23 extends through the tube 19 and has attached thereto a controlling handle 33, and this controlling handle is provided with a spring-actuated pawl 34 adapted to engage a notched segment 35. When the rod is oscillated, the cam-sleeve 24 is correspondingly oscillated, and the ring 27 raised or lowered according to the direction of rotation, the said ring being connected with the cam-sleeve in the same manner described in respect to the connection of the sleeve 14 with the cam-sleeve 15 previously described. For the purpose of holding the rings 11 and 27 against rotation when the steering tube 1 is rotated, a rod 36 has its lower end connected to the housing 3 and its upper end passing through openings 37 in the said rings.

From the foregoing, it will be observed that the control of the ignition-lead and of the air pressure is in the main alike, but that their relative arrangement is such that they are located within the steering tube and concentric thereto, and that the steering wheel is capable of rotation without imparting any motion to either one.

No claim is made herein for the hand and foot controlling members, as this will form the subject matter of a separate application.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

The combination of a steering tube, two independent spiral cams located in the tube, one above the other, a tube connected with the upper cam and extending through the steering tube and beyond the upper end thereof, a handle connected with the tube, a rod passing through the said tube and connected to the lower cam, the upper end of the rod extending beyond the said cam-tube, a handle connected with the extended end

of the rod, longitudinally-movable sleeves
surrounding the steering tube and opera-
tively connected respectively with the said
cam through the steering tube, two con-
5 trollers and separate operative connections
connecting the respective sleeves with the re-
spective controllers.

In testimony whereof I affix my signature
in presence of two witnesses.

ALEXANDER WINTON.

Witnesses:

HAROLD B. ANDERSON,
HARRY L. OWESNEY.

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