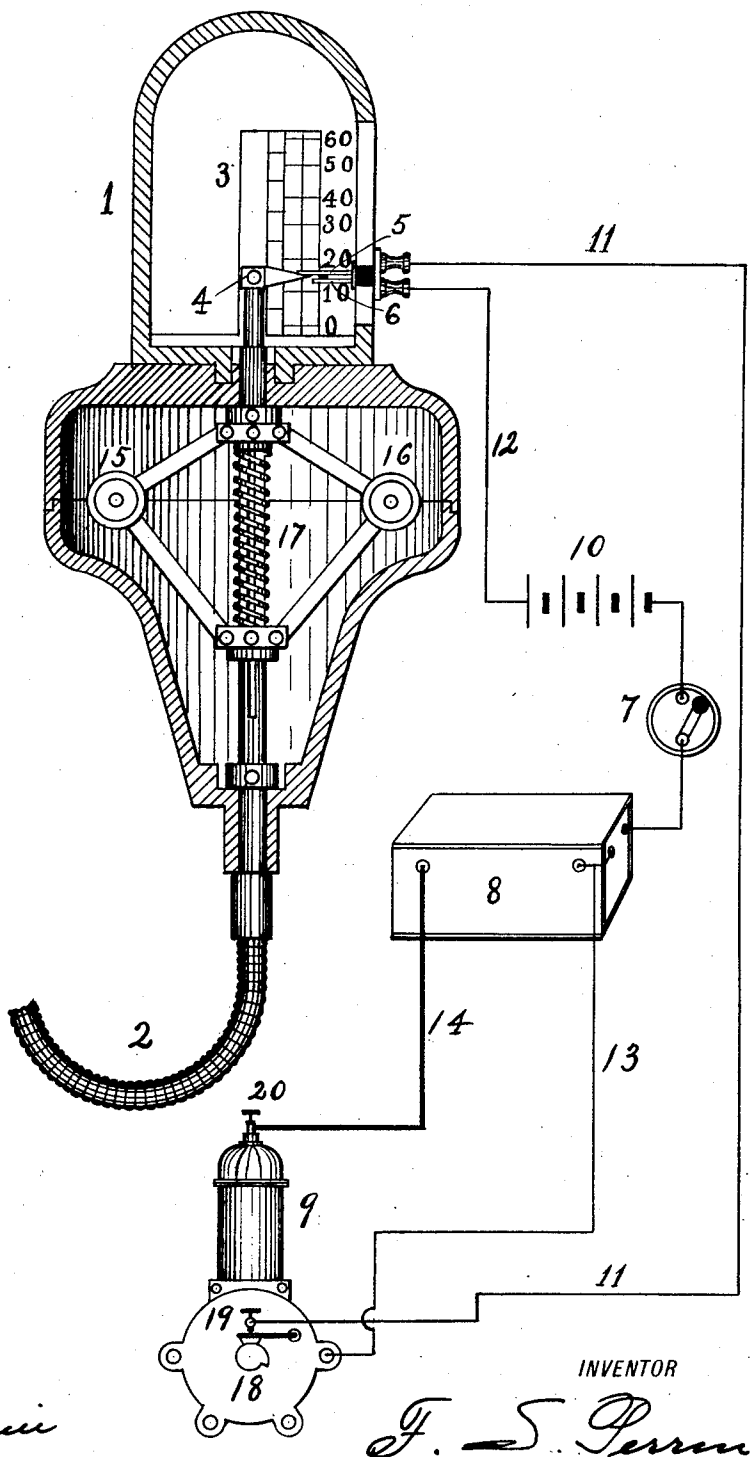
F. S. PERRIN.

SPEED LIMITING DEVICE FOR ELECTRICALLY IGNITED EXPLOSIVE ENGINES.

APPLICATION FILED JAN. 16, 1908.

910,414. Patented Jan. 19, 1909.



WITNESSES:

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FREDERIC STANTON PERRIN, OF NEW YORK, N. Y.

SPEED-LIMITING DEVICE FOR ELECTRICALLY-IGNITED EXPLOSIVE-ENGINES.

No. 910,414. Specification of Letters Patent. Patented Jan. 19, 1909.

Original application filed January 9, 1907, Serial No. 351,489. Divided and this application filed January 16, 1908. Serial No. 411,073.

To all whom it may concern:

Be it known that I, FREDERIC STANTON PERRIN, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Speed-Limiting Devices for Electrically-Ignited Explosive-Engines, of which the following is a specification.

My invention relates to improvements in devices for limiting the speed of electrically ignited explosive engines; and the object of my improvement is to prevent such an engine, or vehicle propelled thereby, from exceeding a desired speed.

This specification is a division of my application for a similar device, filed January 9, 1907, Serial No. 351,489.

I attain my object by the mechanism and electric circuits illustrated in the accompanying drawing, in which:—

A vertical section of a speed indicator, commonly used upon vehicles to indicate the miles traveled per hour, is operably connected with my invention to an electrically ignited explosive engine.

The numeral 1 is a sectional view of a speed indicator operated by centrifugal force by means of a flexible shaft 2 which extends any desired length and has a small pinion attached to its extreme end (not shown in drawing) that meshes with a gear upon the vehicle wheel, or engine shaft, which causes the flexible shaft 2 to revolve at a speed proportional to the speed of the wheel, or engine shaft, and swing the weights 15 and 16 at a speed necessary to raise them by centrifugal force against the tension of the spring 17 and cause the index 4 to rise upon the scale 3 and indicate the number of miles the vehicle is traveling, or the speed of the engine shaft, according to the divisions upon the scale 3.

5 is a flexible contact normally touching a shorter contact 6 and both attached to an insulated terminal that is adapted to be clasped upon the frame of the indicator, at any point of the scale, with the longer contact 5 in the path of the index 4; 10 indicates a battery, or source of electricity; 7 is a switch; 8 represents an induction coil; and 9 represents an explosive engine. 11, 12, 13 and 14 are metallic electric circuits connecting the different apparatus.

In all electrically ignited explosive engines it is necessary to have an electric spark produced in the cylinder at the proper time to ignite the mixture of gases, and to produce this spark requires a source of electrical energy in connection with a low tension or high tension coil, according to the form of engine.

In the drawing I have shown the engine operated by a high tension non-vibrating coil 8, connected with a battery 10, whose current flows through the switch 7, thence through the primary winding of the coil 8 and the line 13 to the frame of the engine 9, thence through a movable contact to the insulated point 19 when the cam 18 upon the engine shaft raises the movable contact and causes the two to meet, thence through the wire 11 to contact 5, contact 6 and by the wire 12 back to the battery 10, forming a complete circuit through the two contacts 5 and 6 and the coil 8.

When the cam 18 passes by the movable contact upon the engine and allows it to separate from the insulated contact point 19 the current through the primary winding of the induction coil 8 is suddenly broken, and a momentary current of high potential is induced in the secondary winding of the coil 8 that flows through the wire 14 to the spark plug 20 in the engine, and jumps across the gap in the plug to the frame of the engine, thence by the wire 13 completing the circuit of high potential, and producing a spark within the cylinder at the proper time to ignite the gases, and operate the engine. This spark of ignition is produced at each separation of the movable contact from the point 19 and causes the continuous operation of the engine until the circuit from the battery is broken by opening the switch 7 or separating the contact points 5 and 6.

If the terminal supporting the contacts 5 and 6 is clamped to the frame of the indicator so that the longer contact 5 covers the figure indicating a speed of fifteen miles per hour, and the engine is propelling the vehicle at a speed below fifteen miles per hour, the index 4 will not rise so as to reach the contact 5; but should the speed be increased, until a speed of fifteen miles is reached, then the index 4 will meet the contact 5 and separate it from the contact 6, open the primary circuit through the coil, prevent a high potential current from being induced in the secondary wiring of the coil 8, stop the spark in the

cylinder and deprive the engine of its power until it slows down sufficiently to allow the contacts 5 and 6 to come together and close the primary circuit through the coil 8, thus reproducing the spark in the engine and causing it to continue in operation. By this means the engine will be enabled to keep an approximate speed of fifteen miles per hour and prevented from exceeding this speed, thus limiting the speed of an electrically ignited explosive engine.

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

1. In an electrically ignited explosive engine; a primary electric circuit; means for interrupting the primary circuit consisting of a speed indicator; and a movable index; contiguous contact points, closing the primary circuit, adapted to be set at any point upon the indicator scale; the contact points being separated by the index of the speed indicator.

2. In combination with an instrument having a movable index and a scale for indicating the speed of a vehicle propelled by an electrically ignited explosive engine; contiguous contact points closing a primary electric circuit, adapted to be set at any point upon the instrument scale; the index of the instrument separating the contact points to open the primary circuit.

Signed at the city of New York in the county of New York and State of New York this 14th day of January A. D. 1908.

FREDERIC STANTON PERRIN.

Witnesses:

CHARLES VINCENT,

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