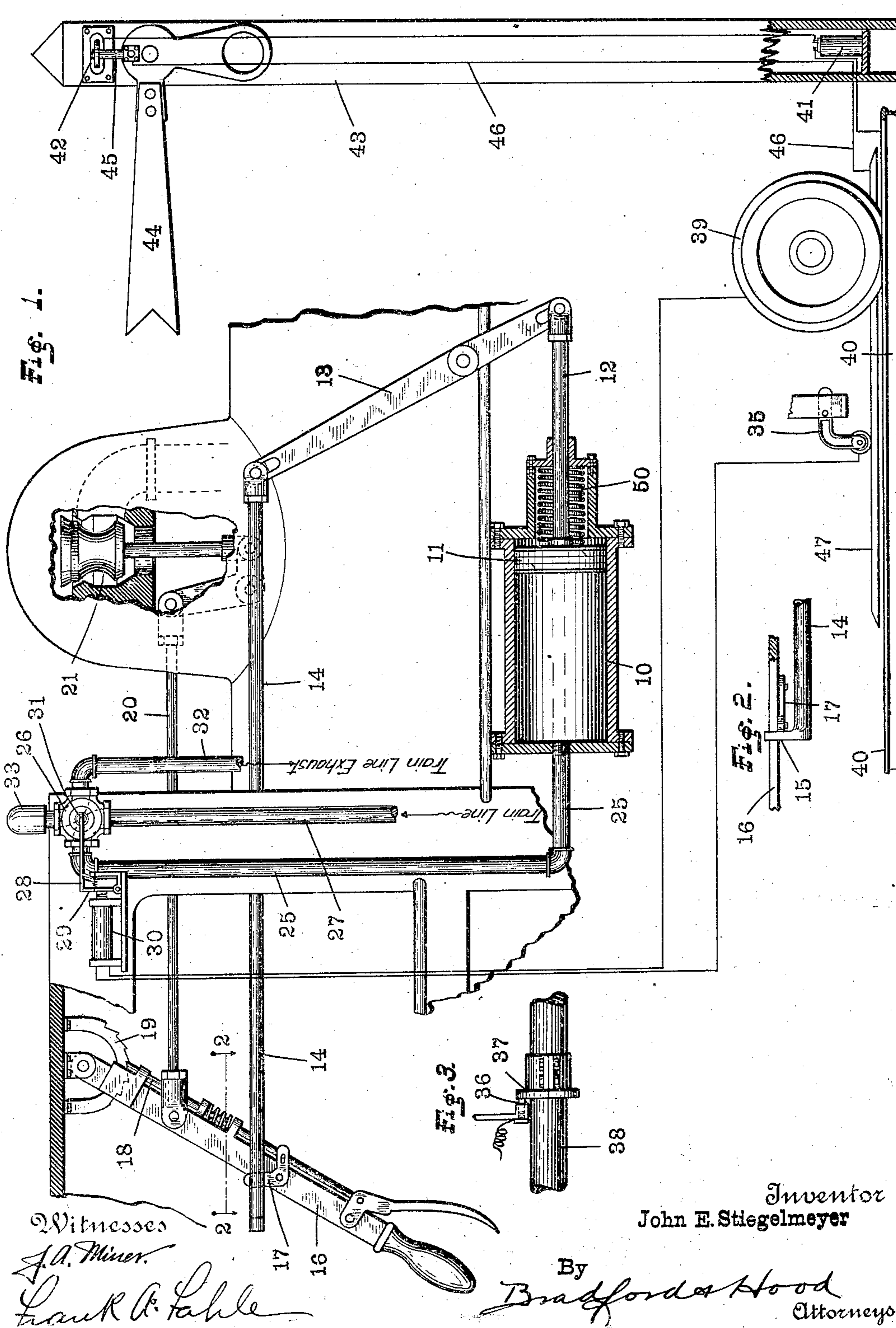


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PATENTED AUG. 14, 1906.

J. E. STIEGELMEYER.
AUTOMATIC LOCOMOTIVE CONTROLLER.

APPLICATION FILED JUNE 16, 1905.



UNITED STATES PATENT OFFICE.

JOHN E. STIEGELMEYER, OF INDIANAPOLIS, INDIANA.

AUTOMATIC LOCOMOTIVE-CONTROLLER.

No. 828,344.

Specification of Letters Patent.

Patented Aug. 14, 1906.

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To all whom it may concern:

Be it known that I, JOHN E. STIEGELMEYER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Automatic Locomotive-Controllers, of which the following is a specification.

In the operation of railroads it is found that many engineers are inclined to be careless and take chances in running past a signal which has been set against them.

The object of my present invention is to provide automatic means by which when any attempt is made to run past a signal which has been set against the train the brakes of the train will be automatically set and the throttle-valve or motor-controller automatically closed. The mechanism by which this result is accomplished is also so designed that the automatic closing of the throttle-valve will also be accomplished by any action in the train service which would under present conditions serve to automatically set the brakes—for instance, any reduction in the brake train-line either by means of the conductor's valve or by reason of the breaking of the train. The construction is also such that the throttle-valve cannot be opened when the engine is standing detached until the service-pressure has been established in the brake service-lines.

The accompanying drawings illustrate my invention.

Figure 1 is a detail in partial vertical section of that portion of my device immediately correlated with the throttle-valve lever and a diagrammatic illustration of a circuit-closing device carried by the engine and a semaphore arranged adjacent the track. Fig. 2 is a detail on line 2 2 of Fig. 1, and Fig. 3 a detail of a portion of the actuating electric circuit.

In the drawings, 10 indicates a cylinder within which is mounted a piston 11, said piston being provided with a piston-rod 12, which extends through one head of the cylinder. The rod 12 is connected with one arm of a lever 13, the opposite arm of which is connected to a rod 14, provided at its opposite end with a finger 15, which overlies the throttle-valve lever 16 and a bell-crank lever 17, pivoted thereto. The throttle-valve 16 is of any usual form and is provided with a suitable detent 18, which engages with the usual toothed segment 19. Lever 17 engages

the detent 18, so that a movement of rod 14 will serve to withdraw the detent 18 from the segment 19. Throttle-valve lever 16 is connected by a usual link 20 with a throttle-valve 21. Leading into one end of cylinder 10 is a pipe 25, which connects through a four-way valve 26 with the air-brake pipe 27. Valve 26 has secured to its stem an arm 28, which is normally held by means of a detent 29, which carries an armature which may be affected by an electromagnet 30, the arrangement being such that when the detent 29 is withdrawn from arm 28 the valve will be swung to an angle of about ninety degrees by means of a light spring 31. Leading from the casing of valve 26 is a train-line exhaust-pipe 32 and a whistle 33.

Magnet 30 is in circuit with a trolley 35 on one side and a spring-pressed plunger 36 on the other side, said plunger being yieldingly urged into engagement with a collar 37, clamped upon the axle 38 of one of the pony trucks 39. The main rail 40, upon which the wheel 39 runs, is connected through a battery 41 with a plate 42, carried by the semaphore-post 43, while the semaphore-arm 44 carries a contact member 45, which is adapted to be brought into contact with the plate 42 when the semaphore-arm is set against the train. The terminal 45 is connected by a wire 46 with a short third rail 47, arranged in position to be engaged by the trolley 35.

The piston 11 is normally arranged in that end of cylinder 10 opposite from that shown in the drawings by means of a spring 50 or any other automatically-operating means, and this spring is somewhat lighter than the force exerted by normal train-line pressure upon the piston 11.

The operation is as follows: With the engine at rest and before the air-pressure has been started spring 50 holds piston 11 to the left end of cylinder 10, and this position results in such position of rod 14 as will prevent any movement of the throttle-valve lever 16 toward open position except upon overcoming the force of spring 50, and even if this spring be overcome it is impossible to set the throttle-valve lever at any open position, for the reason that the detent 18 will be held out of all possible engagement with the ratchet 19. As soon as a sufficient train-line pressure in the air-brake piping has been produced, however, this pressure entering cylinder 10 through pipe 25 will move piston 11 against the action of spring 50 to the position

shown in the drawings, whereupon it becomes possible to shift the throttle-lever with perfect freedom. If a semaphore be set against a train, then when trolley 35 comes into contact with the third rail 47 of this semaphore the magnet 30 will be energized and detent 29 withdrawn from arm 28, whereupon spring 31 will shift the valve 26, so as to connect pipes 27 and 32 and pipe 25 and whistle 33, thus automatically reducing the train-line pressure and setting the brakes and at the same time permitting the pressure within cylinder 10 to be exhausted through the whistle 33, whereupon spring 50 will urge the piston 11 to its normal position and swing the throttle-valve lever 16 to closed position, the whistle 33 being sounded in the meantime. If for any reason, either by the opening of the conductor's valve or by reason of a leak in the brake-pipe or by reason of a break in the train, there is any automatic setting of the brakes, there will be the same reduction of pressure within the cylinder 10, thus permitting the spring 50 to act to close the throttle-valve. It will be apparent that by holding the throttle-valve-closing mechanism in open position by means of the train-line pressure and operating this mechanism by independent means it is possible to cause the automatic closing of the throttle-valve by any of the actions which now ordinarily result in the setting of the brakes.

I claim as my invention—

1. In an automatic engine-controller, the combination with the throttle-valve and air-brake mechanism, of means other than the air-pressure for automatically throwing the throttle-valve to closed position, pressure of the brake-mechanism-controlled means connected with the air-brake mechanism for normally preventing the automatic action of said closing means, and means operable by external means for automatically eliminating the preventing means.

2. In an automatic engine-controller, the combination with a throttle-valve and air-brake mechanism, of a cylinder and piston mounted therein, a connection between one end of said cylinder and the air-brake service-pipe, means for normally urging the piston in a direction opposite to the movement caused by the brake service-pressure, and intermediate connections between said piston and

the throttle-valve, whereby the throttle-valve is moved to closed position by the action of said automatic means.

3. In an automatic engine-controller, the combination with the throttle-valve and air-brake mechanism, of a cylinder and piston mounted therein, a valved connection between one end of said cylinder and the air-brake service-pipe, means for normally urging the piston in a direction opposite to the movement caused by the brake service-pressure, intermediate connections between said piston and the throttle-valve, whereby the throttle-valve is moved to closed position by the action of said automatic means, a valve in the service-pipe of said cylinder, and means controlled by the movement of the train for automatically shifting said valve to permit a reduction of service-pressure in said cylinder.

4. The combination, with a motor-vehicle having a controller for controlling the application of motive power thereto, and an air-brake mechanism, of means other than the air-pressure of the brake mechanism for automatically reducing the application of motive power to the vehicle, pressure-controlled means connected with the air-brake mechanism for normally preventing the automatic action of said reducing means, and means operable by external means for automatically causing the elimination of the preventive action of said pressure-controlled means.

5. In an automatic engine-controller, the combination with the throttle-valve and air-brake mechanism, of means for manually manipulating said throttle-valve, means other than the pressure of the air-brake mechanism for closing the throttle-valve in the absence of sufficient pressure in the air-brake mechanism, and pressure-controlled means connected with the air-brake mechanism for permitting manual manipulation of the throttle-valve when said pressure-controlled means is under the effect of the air-brake-mechanism pressure.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 12th day of June, A. D. 1905.

JOHN E. STIEGELMEYER. [L. S.]

Witnesses:

ARTHUR M. HOOD,
JAMES A. WALSH.