H. G. SEDGWICK.

AUTOMATIC TRAIN STOP.

APPLICATION FILED JAN. 4, 1908.

900,217.

Patented Oct. 6, 1908.

Fig. 2.

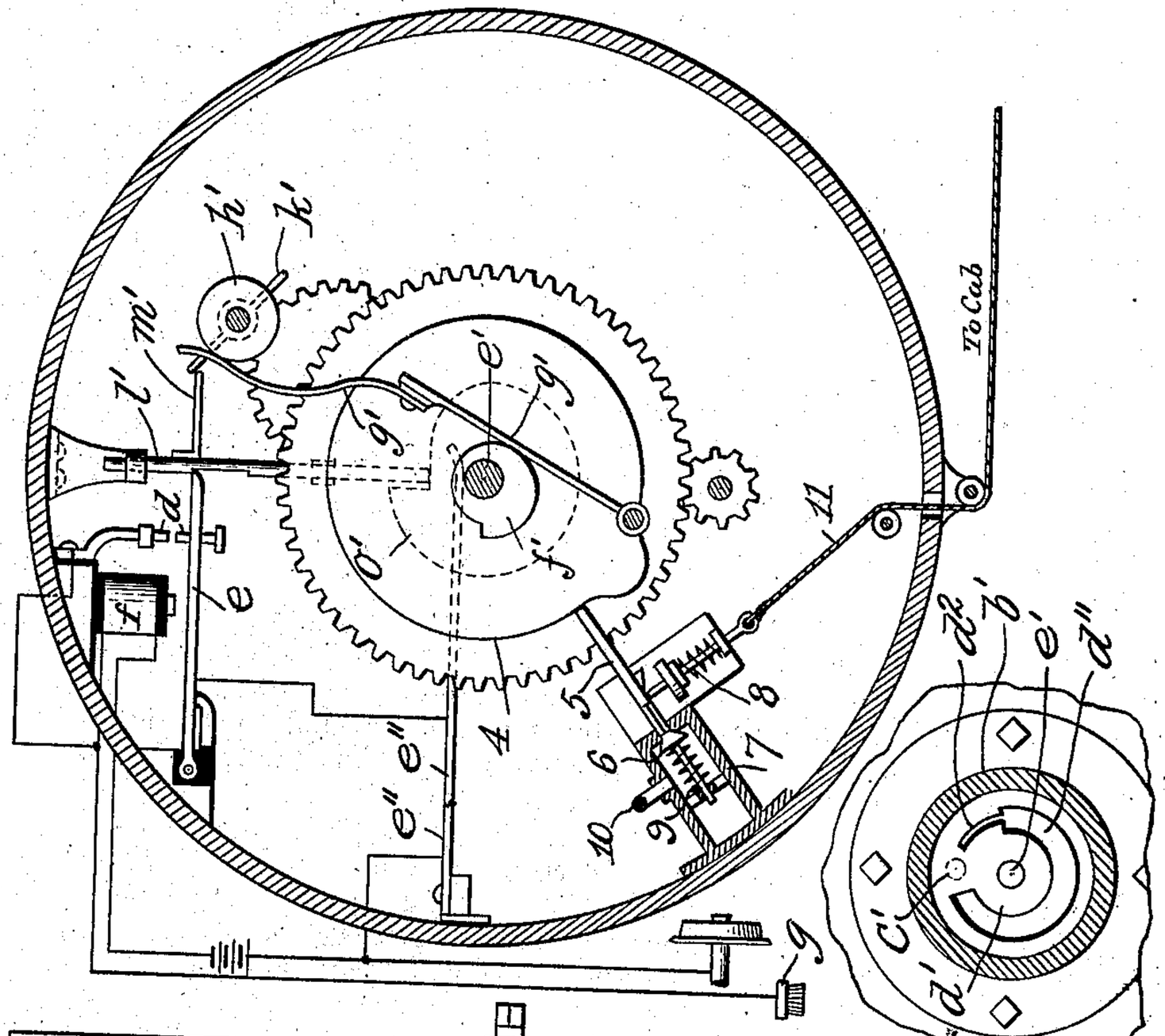

Fig. 1.

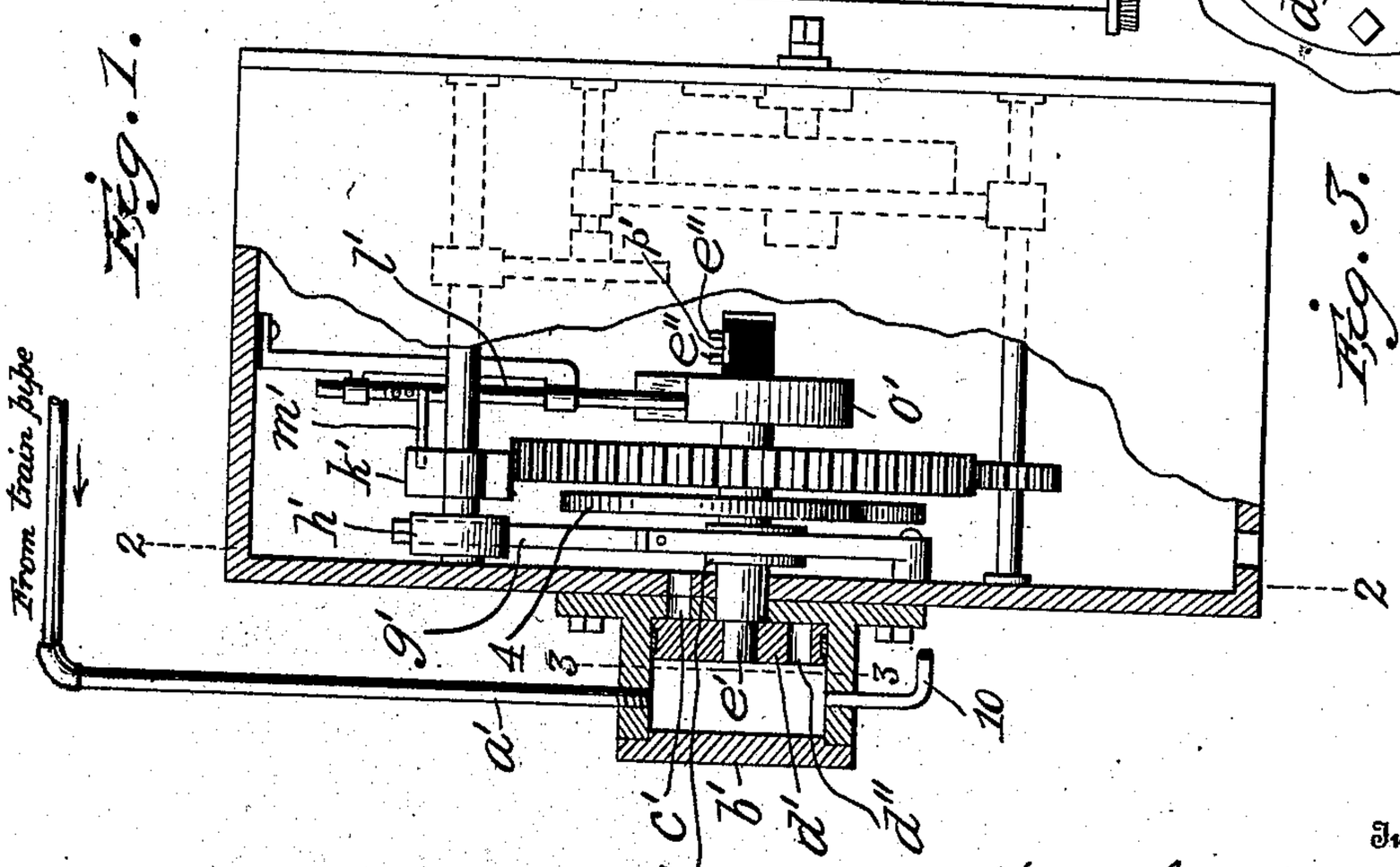

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

HIRAM GEE SEDGWICK, OF MILL VALLEY, CALIFORNIA.

AUTOMATIC TRAIN-STOP.

No. 900,217. Specification of Letters Patent. Patented Oct. 6, 1908.

Application filed January 4, 1908. Serial No. 409,302.

To all whom it may concern:

Be it known that I, HIRAM G. SEDGWICK, a citizen of the United States of America, and a resident of Mill Valley, county of Marin, State of California, have invented certain new and useful Improvements in Automatic Train-Stops, of which the following is a full and clear specification, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical sectional view partly in side elevation of vent-valve mechanism constructed according to my present invention. Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1.

This invention has special relation to that class of automatic vent-valves which upon the arrival of the locomotive at a danger point are automatically actuated to vent the train-pipe and thus apply the brakes, the valve being so constructed that after each actuation it normally closes, thus restoring the apparatus to operative condition and putting the brake mechanism again under the control of the engineer. Examples of this apparatus are found in my former patents.

The object of the present improvements is to provide automatic devices which while not interfering with the restoration of the valve-operating devices to normal operative position will at the same time prevent the automatic restoration of the brake apparatus to the control of the engineer but will require on the part of the engineer some special act of manual manipulation to put the braking apparatus back into his control through his controller valve. The object of thus permitting the vent-valve to be restored to normally closed operative condition while preventing the engineer from again getting control of the brake system without some special act on his part other than the mere operation of the engineer's valve is to prevent the train automatically starting again after the automatic pump means on the locomotive have restored the pressure in the train-pipe.

Under my former systems it will be observed that after closing of the vent-valve the automatic pump devices on the locomotive would automatically release the brakes as soon as the pressure was again restored in the train-pipe, so that if the engineer had become incapacitated by illness or death or had left his post with the throttle left open the train would again proceed on its way as soon as the pressure in the train-pipe was raised sufficiently to release the brakes. This would obviously in many cases result in disaster and I have, therefore, devised means whereby the train would be caused to remain at a standstill even though the throttle be wide open until a person in the cab performs a special act to permit the train-pressure to be again restored by the automatic devices.

In the present embodiment of this improvement I propose employing a supplemental or auxiliary vent-valve which will be actuated after the main vent is opened and which will be held open after the main vent is closed and until a person in the cab closes it by some manual effort, as more fully hereinafter set forth.

Referring to the drawing annexed by reference characters, a' designates a portion of the train-pipe of the air-brake mechanism which is connected to a valve-chest b' having an outlet port c', this port being controlled by a circular rotatable valve d' which is attached to the shaft e' of a suitable clockwork motor. This valve d' is provided with an elongated port d'' circular in form and concentric with the shaft e', the forward end-portion d^2 of this port being abruptly narrowed down to a slit while the main portion of the port is sufficiently wide to entirely uncover the escape port c' when it passes over said escape port in the rotation of the valve.

On the shaft e' is mounted a cam f', this cam being so shaped that at a predetermined point in the rotation of the shaft it will bear against a brake-lever g' and cause said lever to press upon the periphery of the brake-wheel h' mounted on one of the shafts of the clockwork motor, preferably the shaft carrying the fan k'.

The devices for starting and stopping the motor consist essentially of a vertical gravitating rod l' carrying an arm m' adapted when the rod is down to engage the fan and stop the motor. This rod l' rests upon the cam o' mounted on the shaft e' and it is lifted by the armature e, which armature carries one of a pair of contacts d and is lifted by the magnet f which magnet is energized when the terminal contacts on the locomotive are electrically connected, the armature being held up until the circuit is broken by the passage off the metal connecting plate p' of a pair of contact fingers e'', said contact plate being insulatedly carried

on the shaft e'. The cam o' provides for holding up the rod l' away from the fan after the armature lever is dropped through the breaking of its circuit and until an entire revolution of the valve-shaft e' is obtained; when a full revolution is obtained the rod l' drops off the shoulder of the cam and stops the fan.

I do not make any claim on the foregoing devices in this application as they are covered by my co-pending application Serial No. 381,467, filed June 29th, 1907.

I apply my present improvements to mechanism of the foregoing type by mounting on the shaft e' an additional cam 4 and so shape said cam that just before the main valve d' is closed said cam will push stem 5 of the supplemental valve 6 contained in a valve-casing 7 and thus open said valve. A latch bolt 8 will normally engage a notch or lug on said stem and hold the same open after the valve has passed the stem 5. A spring 9 within the casing 7, together with the air pressure therein, will normally hold the valve 6 closed. The valve chamber 7 is connected by a suitable pipe 10 with the train-pipe through the valve chest b'. The automatic latch bolt 8 is connected to a pull-cord or wire 11 which may be extended forward to the cab where it may be within convenient reach of the engineer or fireman.

With the supplemental vent device it will be observed that the train-pipe will be still vented after the main valve is closed so that it will be impossible to release the brakes until the engineer or some other person pulls the cord 11 and releases and closes the supplemental vent, after which the automatic pump on the locomotive will restore the pressure in the train-pipe and release the brakes automatically. With this device therefore it will be impossible for the train to start up automatically after an actuation of the automatic vent so that even though the throttle be open the train will remain at a standstill unless the engineer is at his post and is capable of making the special effort required to restore the braking apparatus to his control.

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

1. In combination with automatic train-stopping devices embodying means for opening and closing a main vent, of a supplemental vent and means for opening and holding open the same after the main vent is closed, and means for manually closing this supplemental vent.

2. In combination with automatic train-stopping mechanism embodying a main vent and means for automatically opening and closing the same, of automatic means for preventing the automatic restoration of the brake mechanism to the control of the engineer, and manual means for releasing this latter preventing means.

3. The combination of automatic train-stopping devices, of means operated thereby for automatically preventing the release of the brakes after the automatic devices have applied them, and manual means within the control of the engineer for releasing said automatic preventing means and thus restoring the brake mechanism to the control of the engineer.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 24 day of December, 1907.

HIRAM GEE SEDGWICK.

Witnesses:
S. H. Roberts,
Henrietta Roberts.