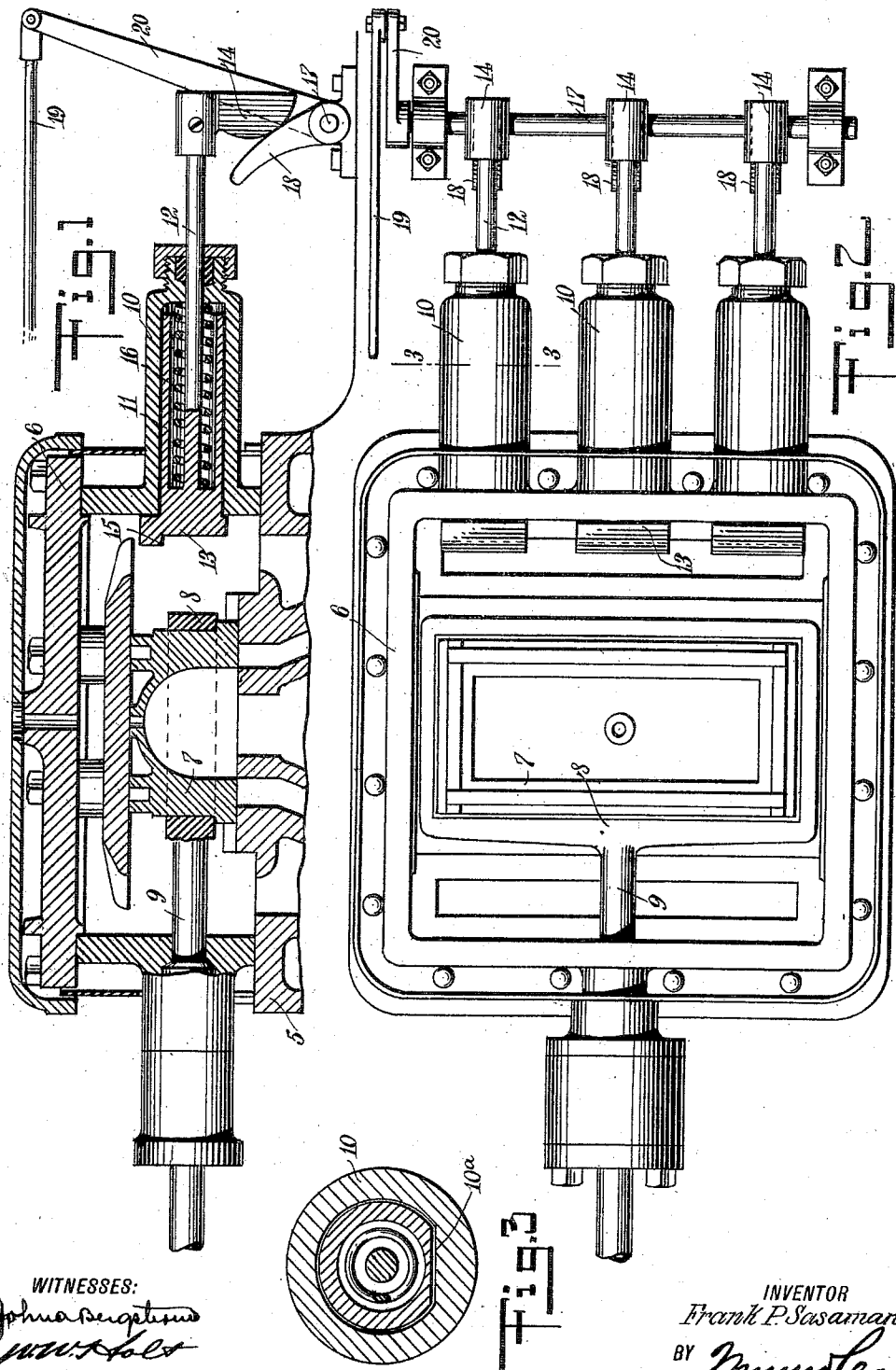


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 EMERGENCY SLIDE VALVE ACTUATOR FOR LOCOMOTIVES.
 APPLICATION FILED JULY 21, 1910.

983,089.

Patented Jan. 31, 1911.



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FRANK P. SASAMAN, OF PITTSBURGH, PENNSYLVANIA.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK P. SASAMAN, a citizen of the United States, and a resident of Pittston, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Emergency Slide-Valve Actuator for Locomotives, of which the following is a full, clear, and exact description.

It is a common occurrence for the piston stem of the valve yoke of one or both of the steam slide valves of a locomotive to break while *en route*, necessitating long delays incident to sending a messenger on foot to the nearest station to telegraph for another engine, or in disconnecting the broken valve and running the engine on one side until a point is reached where another locomotive is to be had.

The object of the present invention is to overcome such delays by providing each steam chest with an emergency appliance which, when thrown into operation, returns the valve with the valve stem as the latter is retracted.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section through a steam chest of a locomotive embodying my improvements; Fig. 2 is a plan of the same, with the steam chest cover removed; and Fig. 3 is a cross-section on the line 3—3 of Fig. 2.

For the purpose of disclosing the application and nature of my improvements, I have shown a working cylinder 5 of a locomotive, having a steam chest 6, within which is the conventional slide valve 7, connected up as usual by the yoke 8 at the inner end of the piston stem 9. To the front of the steam chest is suitably applied a number of outwardly-projecting cylinders 10, three being shown equally spaced apart, and each provided with a spring-pressed tubular piston or presser 11. Each piston is provided with a stem 12 and a head 13, the stem passing through the packing nut at the outer end of the piston, and provided with a cam 14. The piston head 13 is slightly enlarged to bear against the inner wall of the steam chest and limit the outward movement of the piston, and is provided at the top with a shoulder 15 arranged, when the piston 11 is

in operation, to engage over the upper edge of the yoke 8 and hold the yoke in position on the valve. Below the shoulder 15 the piston head, as shown in Fig. 1, has a flat face to bear against the side of the yoke. Each piston is pressed rearwardly by a spring 16 which is arranged on the stem 12 within the tubular portion of the piston and between the piston and the outer end of the cylinder. For retracting the several pistons against the tension of their respective springs and holding them in inoperative positions, as shown in Fig. 1, a rock shaft 17 is suitably supported and provided with fingers 18, equal in number to the cams 14, each finger being arranged to engage the cams at the inner edge and draw them outwardly. For operating the shaft 17, a suitable operating device, such as a lever, is provided in the cab of the engine and is connected to a link 19, which in turn is connected to an arm 20 attached to the shaft 17.

It frequently happens that the valve stem breaks off close to the yoke, or the yoke itself breaks in one or more places, while the engine is *en route*. When this happens, the engineer works the operating device in the cab to move the rock shaft 17 in a direction to release the cams 14, which causes the pistons to be forced inwardly and brought to bear on the front of the yoke under the action of their springs, the shoulders 15 of the piston heads engaging over the upper edge of the yoke, as before stated, which prevents the yoke from riding up on the valve. With the piston thus in working position, when the valve stem is forced forwardly, the spring of the piston will be compressed, and as the stem is retracted it will, under the action of the pistons, be followed up by the yoke and valve, thus adapting the valve to work as successfully as if the piston and yoke were not defective. The spring-pressed pistons may be prevented from turning in the cylinders in any suitable manner, such, for example, as disclosed in Fig. 3, wherein a portion of the bore of the cylinder is flattened, as indicated at 10^a, and against which a corresponding flattened portion of the piston bears. Should it require a less number of pistons to actuate the valve than the number provided on the steam chest, one or more of these may be thrown out of operation by moving the rock fingers to a position retracting the pistons, and turning the

cams 14, of the pistons to be placed in operation, on their respective piston stems and out of register with their retracting fingers.

While I have termed my invention an emergency slide valve actuator for locomotives, and have shown and described the same as so applied, I desire it to be understood that my improvement is also applicable to all steam engines, stationary and pump, using the slide valve piston or D-slide.

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

1. The combination of a steam chest, a slide valve within the chest, a valve stem for operating the valve, having a valve yoke receiving the valve, and an emergency appliance having a presser arranged to work the valve oppositely to the valve stem when the stem or yoke is broken.

2. The combination of a steam chest, a slide valve within the chest, a stem for actuating the valve, and an emergency piston for moving the valve oppositely to the stem when the stem is broken.

3. The combination of a steam chest, a slide valve within the chest, a stem for actuating the valve, an emergency piston for moving the valve oppositely to the stem when the stem is broken, and means for throwing the piston into and out of operation.

4. The combination of a steam chest, a slide valve within the chest, a piston stem for actuating the valve, having a yoke passing about the valve, and a spring-pressed piston arranged to bear against the yoke and move the valve oppositely to the piston stem when the stem or yoke is broken.

5. The combination of a steam chest, a slide valve within the chest, a piston stem for actuating the valve, having a yoke passing about the valve, and a piston to actuate the valve oppositely to the piston stem when the piston stem or yoke is broken, arranged to bear against the face of the yoke and engage over the upper edge thereof and prevent the yoke from rising up on the valve.

6. The combination of a steam chest, a slide valve within the chest, a valve stem for operating the valve, a cylinder extending outwardly from one end of the chest, a spring-pressed piston within the cylinder having a head within the chest arranged to press the valve oppositely to the piston stem, the piston having a piston rod extending to the outside of the cylinder, a cam attached to the piston rod, and a rock shaft having a finger arranged to engage the cam and retract the piston to inoperative position.

7. The combination of a steam chest, a slide valve within the chest, a valve stem for operating the valve, a cylinder extending outwardly from one end of the chest, a spring-pressed piston within the cylinder having a head within the chest arranged to press the valve oppositely to the piston stem, the piston having a piston rod extending to the outside of the cylinder, and means to hold the piston in retracted position, operatively connected to the rod.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK. P. SASAMAN.

Witnesses:

C. W. ANDERSON,
H. M. WESTCOTT.