No. 648,526. Patented May 1, 1900.

A. J. PURINTON.

EMERGENCY CIRCUIT CLOSER.

(Application filed July 20, 1899.)

(No Model.)

Fig. 1

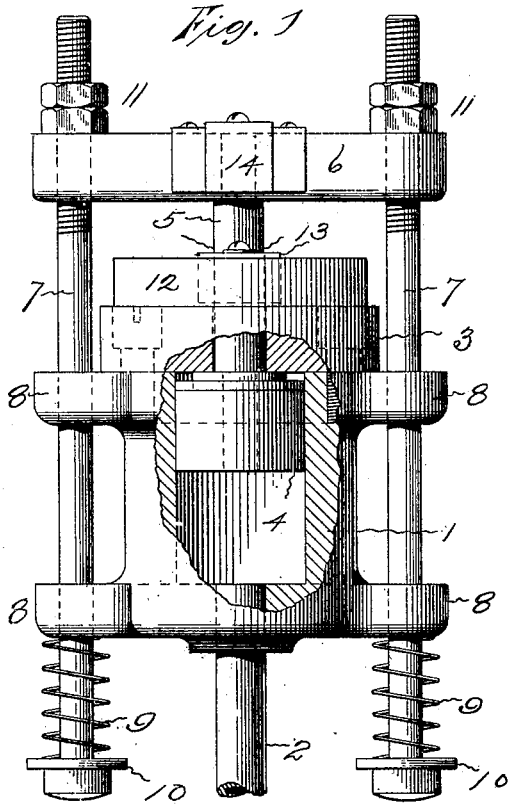


Fig. 2

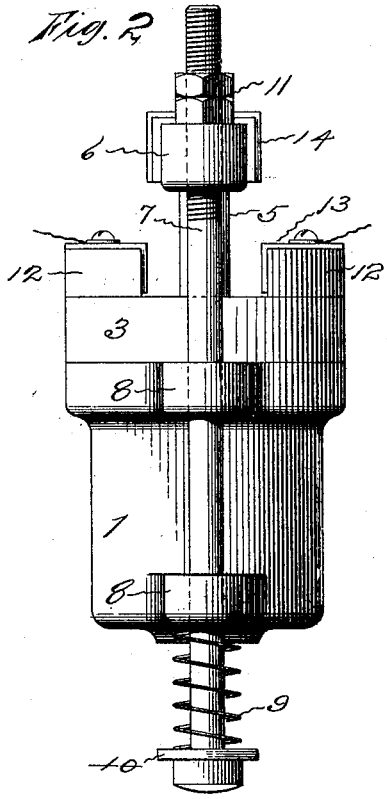
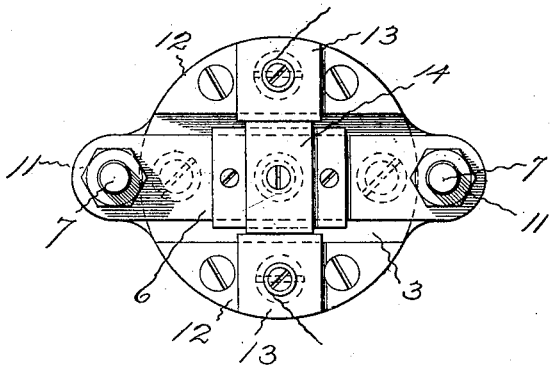


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

ARTHUR J. PURINTON, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE MONARCH MANUFACTURING COMPANY, OF SAME PLACE.

EMERGENCY CIRCUIT-CLOSER.

SPECIFICATION forming part of Letters Patent No. 648,526, dated May 1, 1900.

Application filed July 20, 1899. Serial No. 724,499. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. PURINTON, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Emergency Circuit-Closers, of which the following is a specification.

This invention relates to those devices which are connected with the steam-pipes of a power plant for setting in operation an engine stop mechanism should an accident occur, such as the blowing out of a cylinder-head or the bursting of a steam-pipe.

The object of this invention is to provide a simple and safe device of this nature which can be conveniently connected with a cylinder, steam-chest, or steam-pipe, as desired, and which will surely operate when required to set in action the engine-stop.

The embodiment of the invention illustrated has a cylinder that is adapted to be connected with a chest, a cylinder, or a pipe in which there is steam-pressure, with a piston arranged to be held in one position by the steam-pressure and to be drawn by spring-power or gravity to another position when relieved from steam-pressure, a conducting-piece being connected with the piston in such manner that it will join circuit-terminals or pole-plates and close an electrical circuit connected with the engine-stop when the piston is moved by the spring-power or gravity.

Figure 1 of the illustrations is a side elevation of the device with a portion of the cylinder broken away to expose the interior. Fig. 2 is an edge view, and Fig. 3 is a plan of the same.

The cylinder 1 may be of any suitable material having the requisite strength to withstand the steam-pressure to which it may be subjected. A pipe 2 enters through one end of the cylinder, and this pipe is intended to communicate with the part from which the steam-pressure for operating the device is obtained. The cap 3 is fastened to the other end of the cylinder from that through which the pipe enters.

The piston 4, which is packed so that it will be tight, but will move freely within the cylinder, has a stem 5, that passes through a perforation in the cap and that at its upper end is fastened to a cross-head 6. The outer ends of the cross-head are fastened to bolts 7, that are loosely supported by lugs 8, projecting outwardly from the ends of the cylinder. Springs 9 are placed upon the bolts between washers 10 at the bolt-heads and the lower lugs, and these springs tend to pull the bolts and the cross-head downwardly. By changing the position of the clamping-nuts 11 on the bolts outside of the cross-head the tension of the springs may be varied. Instead of springs weights that operate by gravity could be employed for drawing the bolts and the cross-head downwardly.

Insulating-blocks 12 are secured to the cap, and upon these pole-plates 13 are fastened. Connected with these plates by ordinary binding-screws are the ends of a wire which forms part of a circuit in which is an engine-stop—such, for instance, as is set forth in United States Patent No. 599,014 of February 15, 1898. Upon the cross-head a conducting-piece 14 is arranged, so that it will connect the pole-plates when the cross-head is drawn down.

When the pressure-pipe is connected with a part having steam-pressure, the piston is held by the pressure at one end of the cylinder and the springs are held under compression. With the piston in this position the cross-head is away from the cylinder, so that the pole-plates are disconnected and the engine stop-circuit is open. Should the steam-pipe, steam-chest, steam-cylinder, or other part to which the valve is attached burst, so that the pressure of the steam on the piston would be materially reduced, the springs will draw the bolts and cross-head downwardly and cause the conducting-piece upon the cross-head to join the poles and close the circuit, so that the engine-stop will act to shut down the engine.

By means of this device an engine will be automatically stopped when a pipe bursts by a mechanism that is simple to construct and apply and sure in action. The device is always kept in order, for the piston will be moved downwardly every time the engine is

shut down in the usual course of operations and move upwardly ready for an emergency every time the engine is started up.

I claim as my invention—

An emergency-valve consisting of a cylinder, a freely-movable piston within the cylinder, a pipe opening into one end of the cylinder so that steam-pressure in the pipe will force the piston toward the opposite end of the cylinder, a cross-head attached to the piston-stem outside of the cylinder, bolts connected with the cross-head, springs thrusting between the bolts and cylinder parts and tending to draw the bolts and the cross-head so as to force the piston against steam-pressure within the cylinder, circuit-terminals attached to the cylinder, and a conductor attached to and movable with the cross-head in position to join the terminals when the cross-head is moved by the springs toward the cylinder, substantially as specified.

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Witnesses:
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