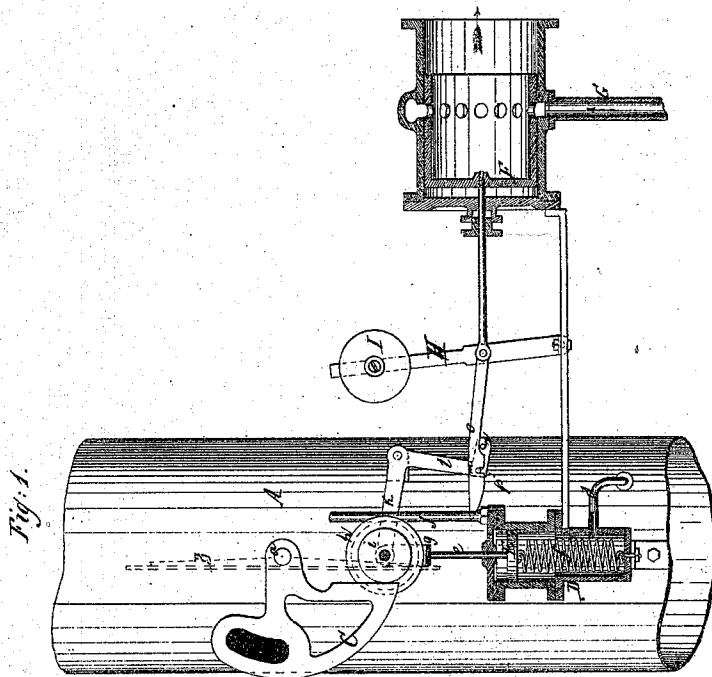
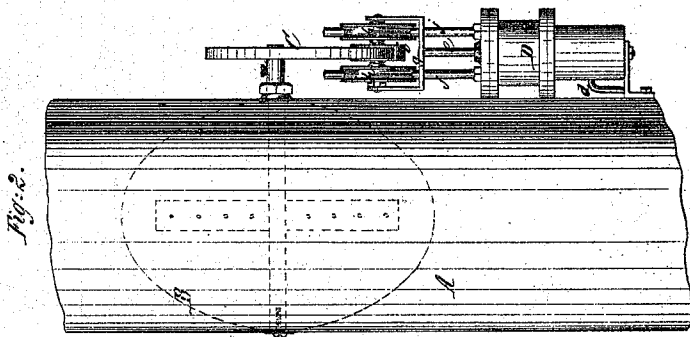


J. Storer,

Steam Governor.

No. 104,659.

Patented June 21, 1870.



Inventor.
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JOHN STORER, OF PEEKSKILL, NEW YORK.

Letters Patent No. 104,659, dated June 21, 1870; antedated June 9, 1870.

STOP MOTION FOR STEAM-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN STORER, of Peekskill, in the county of Westchester, State of New York, have invented a new and useful Improvement in Stop Motion for Steam-Engine; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a sectional front view of this invention.

Figure 2 is a transverse vertical section of the same.

Similar letters indicate corresponding parts.

This invention relates particularly to direct-acting blowing-engines, but it is also applicable to steam-engines of any other description; and

It consists in the arrangement of a spring piston exposed to the pressure of the blast in the blast-pipe, and serving as a stop for the damper or valve in said blast-pipe in such a manner that, when from some cause the pressure of the blast-pipe is suddenly decreased, the stop of the valve is automatically withdrawn and the valve is closed, thereby maintaining sufficient pressure in the blast-pipe and blowing-cylinder to prevent the piston or plunger, working in said cylinder, from smashing against the cylinder-heads.

The invention consists, further, in connecting the spring piston, which is exposed to the pressure of the blast in the blast-pipe, or to the pressure of a fluid in a pipe applied to the engine for this particular purpose, by suitable levers, with the throttle-valve in the steam-supply pipe in such a manner that, whenever the pressure in the blast-pipe, or its equivalent, decreases below a certain limit, the supply of steam to the steam-piston is cut off, and the engine is prevented from racing.

In the drawing—

The letter A designates the blast-pipe of a direct acting blowing-engine, and in this blast-pipe is a valve, B, which is mounted on a pin, *a*, that has its bearings in the sides of the blast-pipe.

On one end of this pin, outside the pipe, is secured a segmental lever, C, which is loaded with a weight, *c*, so that said lever, when allowed to follow the action of its inherent gravity, will close the valve.

To the side of the blast-pipe A is secured a cylinder, D, which communicates, by a pipe, *d*, with the blast-pipe, and which is fitted with a piston, E, secured to a rod, *e*.

This piston is exposed to the action of a spring, *f*, which has a tendency to pull the same down, and the piston-rod *e* projects above the upper cylinder-head,

and carries a cross-head, *g*, which forms the bearings for two guide-rollers *h*, and for a friction-roller, *i*.

The guide-rollers *h* are grooved, and bear against rods *j*, which rise from the cylinder-head.

When the engine is started, the valve B is thrown open to the position indicated in dotted lines in the drawing, and the pressure of the air in the blast-pipe, acting on the piston E, forces the same up against the action of its spring, so that the friction-roller *i* forms a stop for the valve-lever C, and prevents the same from closing the valve.

In this position, the weight or pressure of the valve-lever C against the roller *i* is sustained by the guide-rollers *h* bearing against the rods *j*, and thereby the piston-rod *e* is prevented from being crowded out in a lateral direction, and the piston E moves up and down without binding.

The tension of the spring *f* is so adjusted that it will be overcome by the ordinary pressure of the blast against the piston E, but if, from some cause, the pressure of the blast in the blast-pipe is decreased below a certain point, the spring *f* draws the piston E down, and the lever C, being relieved from the stop-roller *i*, drops down and closes the valve.

By thus closing the valve, the resistance of the air against the piston of the blowing cylinder will be kept up, and said piston is prevented from smashing against the heads of its cylinder.

The piston of the regulating cylinder D is also connected to the throttle-valve F in the pipe G, which conducts steam to the steam-cylinder of the blowing-engine.

This connection is effected by an elbow-lever, *k* *l*, one arm, *k*, of which connects with the cross-head on the piston-rod *e*, while its other arm, *l*, carries two studs *m* *n*, as shown in fig. 1 of the drawing.

If the piston E is down, the stud *n* bears against the bottom edge of a latch, *o*, which is connected to the stem of the throttle-valve F, but as soon as the piston E rises, the stud *n* descends and allows the notch *p* of the latch *o* to catch over the stud *m*, and the throttle-valve is opened.

If the pressure in the blast-pipe A is decreased below the desired limit, so that the piston E is drawn down by the action of its spring *f*, the stud *n* throws the latch out of gear with the stud *m*, and a lever, H, loaded with a weight, I, and connected to the stem of the throttle-valve, closes said throttle-valve, and steam is cut off from the steam-cylinder of the blowing-engine.

By this arrangement, the engine is prevented from racing, if the pressure of the air in the blast-pipe decreases below a certain limit, and accidents or injury to the engine are prevented.

It is obvious that a pipe containing fluid under

pressure, and serving the same purpose as the blast-pipe A, may be applied in place of said blast-pipe, in combination with the above-described mechanism for closing the throttle-valve of a steam-engine automatically.

What I claim as new, and desire to secure by Letters Patent, is—

1. The regulating spring piston E, in combination with the blast-pipe A and its valve B, substantially as shown and described.

2. The regulating spring piston E, in combination with the pipe A and throttle-valve F, in the steam-pipe G of a steam-engine, substantially as set forth.

This specification signed by me this 24th day of August, 1869.

JOHN STORER.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.