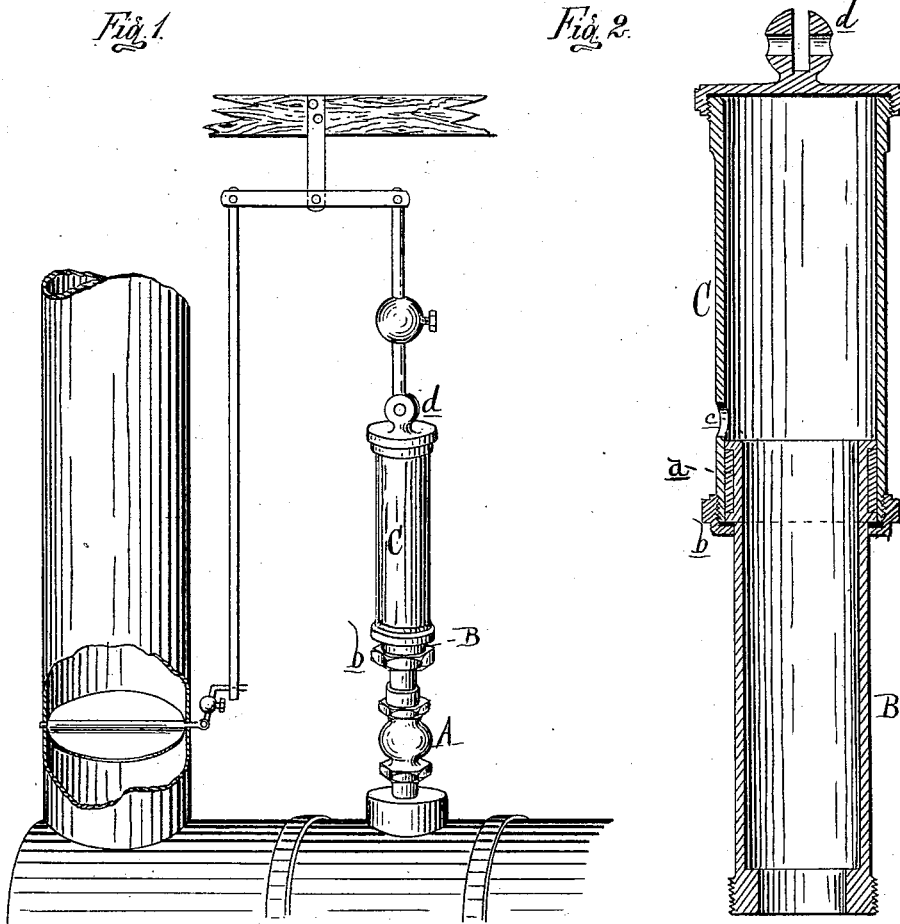


D. C. KELLAM.

DAMPER REGULATORS FOR STEAM-BOILERS.

No. 190,336.

Patented May 1, 1877.



Attest:
Edmund Barthel
Rudolf Fahr.

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By Atty
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UNITED STATES PATENT OFFICE.

DANIEL C. KELLAM, OF DETROIT, MICHIGAN.

IMPROVEMENT IN DAMPER-REGULATORS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **190,336**, dated May 1, 1877; application filed September 11, 1876.

To all whom it may concern:

Be it known that I, DANIEL C. KELLAM, of Detroit, in the county of Wayne and State of Michigan, have invented an Improved Damper-Regulator for Steam-Boilers, of which the following is a specification:

The object I have in view is to provide a draft-regulating apparatus, to act either upon a check-damper in the smoke-flue, or upon a draft-door in the ash-pit, operating thereon by the pressure of the steam in the boiler to keep the pressure within a given limit.

The invention consists, mainly, in a hollow trunk or stem, mounted on and communicating with the boiler, and a cylinder sleeved thereon, acting as a slide-valve, and which, through suitable levers, controls the damper.

Figure 1 is a perspective view of the device. Fig. 2 is a sectional elevation of the regulator alone, showing the position of the sleeve when the damper is fully closed.

In the drawing, A represents the shell or body of a spiral-spring safety-valve, mounted on the dome of a steam-boiler. Into the discharge-outlet of the shell is tapped a hollow cylinder, B, having an external packing-ring, *a*, at the top, upon which slides a steam-tight sleeve, C, closed at the top, and prevented from coming entirely off the cylinder by a flange, *b*, screwed onto its lower end. Near

the lower end of the sleeve there is a discharge-outlet, *c*. At the top is a slotted lug, *d*, to which a lever connected with the damper may be pivoted, as shown, or with the draft-door, in any convenient manner; but the sleeve or the lever should be so weighted as to normally keep the draft partially or fully open.

When the pressure in the boiler exceeds the limit to which the safety-valve is set, the latter raises and opens a communication between the interior of the boiler and that of the cylinder and sleeve, which latter slides up the former until arrested by the flange *b*, at which time the outlet *c* is above the ring *a*, and through it the steam escapes until the boiler-pressure is lowered enough for the safety-valve to close. When the sleeve rises, and while in its elevated position, the damper is closed, and upon being relieved from pressure, it falls and opens the damper again.

What I claim as my invention is—

The hollow cylinder B, provided with the packing-ring *a*, mounted upon the discharge-opening of a safety-valve, and the sleeve C, combined therewith for operating a draft-regulator, substantially as described.

DANIEL C. KELLAM.

Witnesses:

H. S. SPRAGUE,
WM. P. SPALDING.