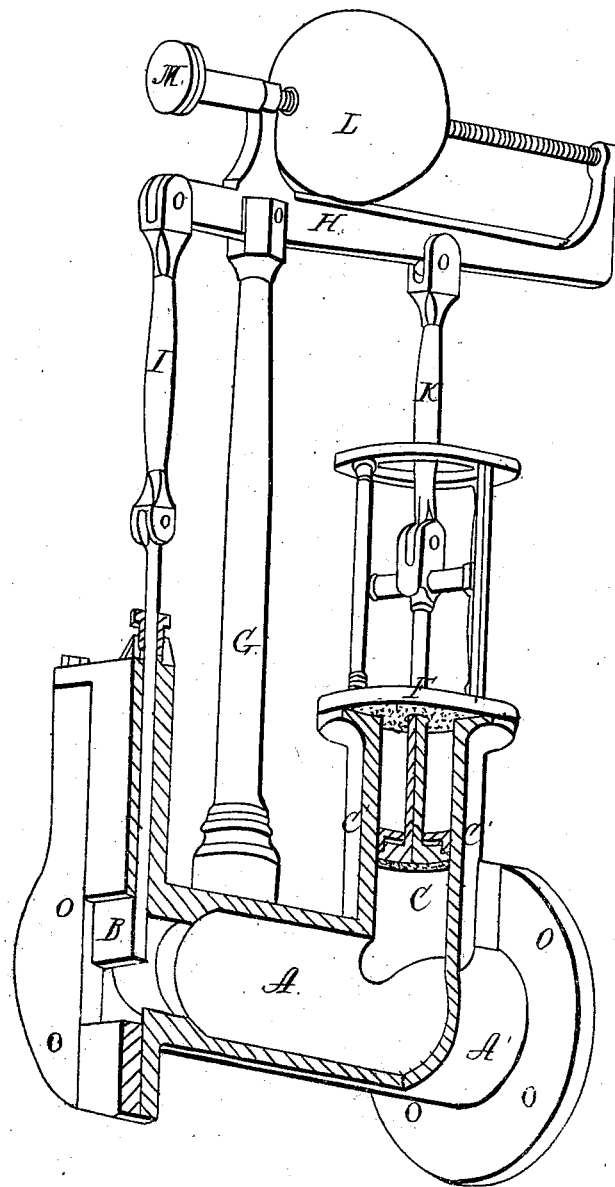


F. R. TORBET
REGULATING PRESSURE OF STEAM.

No. 2,020.

Patented Mar. 29, 1841.



UNITED STATES PATENT OFFICE.

FRANCIS R. TORBET, OF PATERSON, NEW JERSEY.

MODE OF REGULATING THE PRESSURE OF STEAM.

Specification of Letters Patent No. 2,020, dated March 29, 1841.

To all whom it may concern:

Be it known that I, FRANCIS R. TORBET, of the town of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful machine for the purpose of regulating the pressure of steam and other fluids confined in pipes or other receptacles into which it has been admitted from other pipes or receptacles containing it, but under higher pressure. I do hereby declare that the following is a full and perfect description of the construction and operation thereof.

The construction of the machine is fully exhibited in a drawing accompanying this specification and of which it forms a part in which—

A is the inside and A' the outside of a pipe containing steam or other fluid which has to be admitted under the slide valve B from another receptacle containing it but under greater pressure.

The drawing referred to is projected in parallel perspective and represents the machine complete except as follows, viz. One-half of the valve B with its slides and stuffing box at top; one-half of the pipe A as far as the center of the cylinder C, C, C; and one-fourth part of the cylinder itself with its piston D and piston rod E up to the cylinder lid F; these parts being removed for the purpose of exhibiting the interior of the machine.

G is a column or standard attached to the pipe A A' for the purpose of supporting the lever or beam H one end of which is attached to the connecting rod I and communicates motion to the valve B while the other end being attached to the connecting rod K receives motion from it through the medium of the piston D and piston rod E. The ball L is moved along the screw passing through its center by means of the milled head M.

The operation of the machine by which the pressure of steam and other fluids may be regulated is now sufficiently apparent. The steam or fluid being admitted under the valve B into the pipe A and cylinder C, acts against the bottom side only of the piston D until the pressure is sufficient to lift it with its superincumbent weight attached, particularly the ball L the position of which on the screw regulates the pressure requisite to lift the

piston D and consequently to close wholly or partially the valve B.

The purposes to which this invention may be applied are too numerous for particularization, the following however are some of them. To all purposes when a uniform pressure of steam, water, or other fluids, is required, to regulate the pressure of the blast for smiths' forges, cupolas, smelting furnaces and blow pipes, to warming by steam of dwellings, horticultural buildings, warehouses, mills, and manufactories, so as to vary the temperature of the different apartments at will, also to vary at will the temperature of machines warmed by steam and to keep them at any required temperature, but more particularly I claim as my invention the application of this machine for the purpose of heating the cylinder of paper making machines. In the ordinary way of drying the paper, the steam is conveyed from the boiler to the cylinder through a pipe and regulated by a cock and unless the machine tender is extremely careful the paper is sometimes dried too much and at other times not enough and this cannot be remedied until it has occurred, but with this machine after having regulated the weight so as to get the right pressure of steam and keeping the velocity of the machine the same the paper is always dried the same whatever may be the temperature of the steam in the boiler. This benefit is sufficiently understood by manufacturers as it keeps the paper from breaking by contracting too rapidly on the cylinder and delivers it free from cockles and of a more uniform weight.

I do not propose to confine myself to the particular mode herein exhibited of transmitting the motion of the piston to the valve nor yet to the form of the valve which may be prismatical or cylindrical; while the beam or lever may be supported at either one end or the other instead of between the piston and valve and the ball or weight may be placed directly upon the piston rod.

I do not claim as my invention any parts of the machine as new in machines nor as involving a new or peculiar motion but do claim as my invention, and not previously known, nor used—

The general arrangement of the machine herein described and set forth for the purpose of regulating the pressure of steam and

other fluids confined in pipes and other receptacles by means of a piston moved by the pressure of the fluid itself and communicating its motion to a slide valve so as to reduce the aperture through which such fluid
5 (but under greater pressure) is admitted.

Witness my hand this 25th day of Feb-

ruary in the year of our Lord one thousand eight hundred and forty-one, and of independence the sixty-fourth.

FRANCIS R. TORBET.

Witnesses:

JAMES U. TORBET,
PHILIP A. CLUSS.