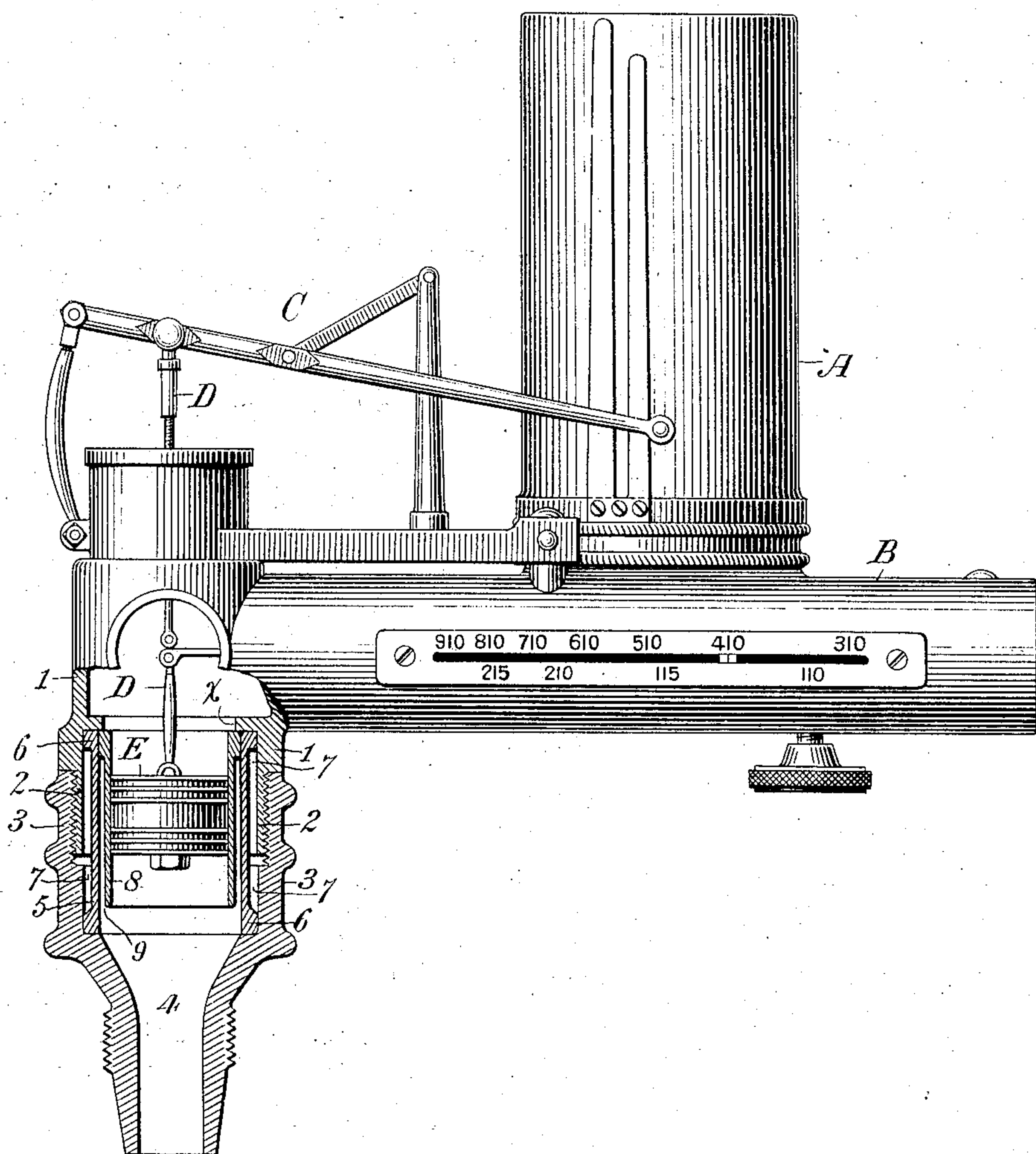


No. 768,105.

PATENTED AUG. 23, 1904.

A. L. WILLIAMS.
STEAM ENGINE CYLINDER.
APPLICATION FILED NOV. 20, 1903.

NO MODEL.



WITNESSES:

C. E. Ashley
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INVENTOR

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UNITED STATES PATENT OFFICE.

ALBERT L. WILLIAMS, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOHN S. BUSHNELL AND AMOS P. JOSLIN, OF BROOKLYN, NEW YORK.

STEAM-ENGINE CYLINDER.

SPECIFICATION forming part of Letters Patent No. 768,105, dated August 23, 1904.

Application filed November 20, 1903. Serial No. 182,034. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. WILLIAMS, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Steam-Engine Cylinders, of which the following is a specification.

This invention relates to means for preventing radiation from steam-cylinders; and it consists of features of construction, arrangements, and combinations of devices hereinafter described, and more particularly pointed out in the appended claims.

The invention is illustrated in connection with a steam-indicator in the accompanying drawing, forming part hereof.

In the drawing the reference A marks the usual rotatory paper-holding cylinder; B, a hollow case on or from which the cylinder A is supported; C, a parallel-motion for coaction with the cylinder A; D, a connection between the motion C and the piston E. The foregoing parts are or may be of any known or usual construction and operation and form no essential part of the present invention.

A tubular case 1 projects downward from and opens into the case B and has its lower end provided with external screw-threads and its upper end provided with an internal stop α , preferably in the form of a flange. A casing 3 is connected with the case 1 by screw-threads 2, as shown, and suitable means, as a set-screw, may be employed to prevent undesirable rotation of the casing 3. The lower end of the casing 3 is formed with an upwardly-flaring steam-inlet 4, the cylindrical and the conical parts of the casing 3 being joined by a ledge or shoulder against which a tubular intermediate casing 5 abuts, as shown. The casing 5 is provided with external flanges 6 at its ends for centering it in the casing 3 and for providing an air-space 7 between the outer and the intermediate casings 3 and 5.

It is not essential that the flanges 6 fit tightly inside of the casing 3 so long as steam is not permitted to enter the space 7. The steam-tight joint may be between the ends of the casing 5 and the ledge and flange against which

it abuts and is pressed when the casing 3 is screwed onto the case 1.

The reference 8 designates the steam-cylinder, which may be secured in place in any suitable manner, but which in the instance shown in the drawing is held only at its upper end in the casing 5 and is separated at all other points from the said casing 5, thus leaving a steam-space 9 or steam-jacket between the cylinder 8 and the casing 5, with a clear annular opening at the bottom of such jacket; but it must be understood that the cylinder 8 may be otherwise secured in place and other means be provided for admitting steam into the space 9 and drawing off water of condensation therefrom without departing from this invention. The flare of the induction 4 secures that the entering steam shall readily enter the steam-jacket, while also permitting of the instant escape of any water of condensation in said jacket, which water may form on the admission of steam thereinto. Once the cylinder 8 and other parts are warmed up the air and steam jackets keep an even temperature within it, so that the full pressure of the steam acts upon the piston E, and the marker of the parallel-motion C makes a correct record of the pressures. The operation of the steam-indicator parts is so well known as to obviate any description thereof herein.

By preference the casings 1 and 3 are imperforate.

What is claimed is—

1. The combination of an exteriorly-screw-threaded case provided with an internal stop, a casing screwed onto said case and provided with an internal stop or ledge, an intermediate casing connected in a steam-tight manner at each end with said case and casing and separated therefrom to form an air-space and also abutting against said stops, and a steam-jacketed steam-cylinder held by and within said intermediate casing.

2. The combination of a vertical case provided with an internal stop or flange, a casing connected with said case and provided with an internal ledge or stop, an intermediate casing abutting against said stops and con-

5 nected in a steam-tight manner at each end with the case and casing and separated therefrom between its ends to form an air space or jacket, and a steam-cylinder held within said intermediate casing with an open-bottomed steam space or jacket between said cylinder and casing, with an admission-port below said cylinder.

Signed at New York, in the county of New York and State of New York, this 13th day of 10 November, A. D. 1903.

ALBERT L. WILLIAMS.

Witnesses:

FRANK RYALL,
R. W. BARKLEY.