

No. 640,547.

Patented Jan. 2, 1900.

R. DUFFIE.

DEVICE FOR CONVERTING HOT AND DRY STEAM INTO COOL AND WET VAPOR.

(Application filed July 12, 1899.)

(No Model.)

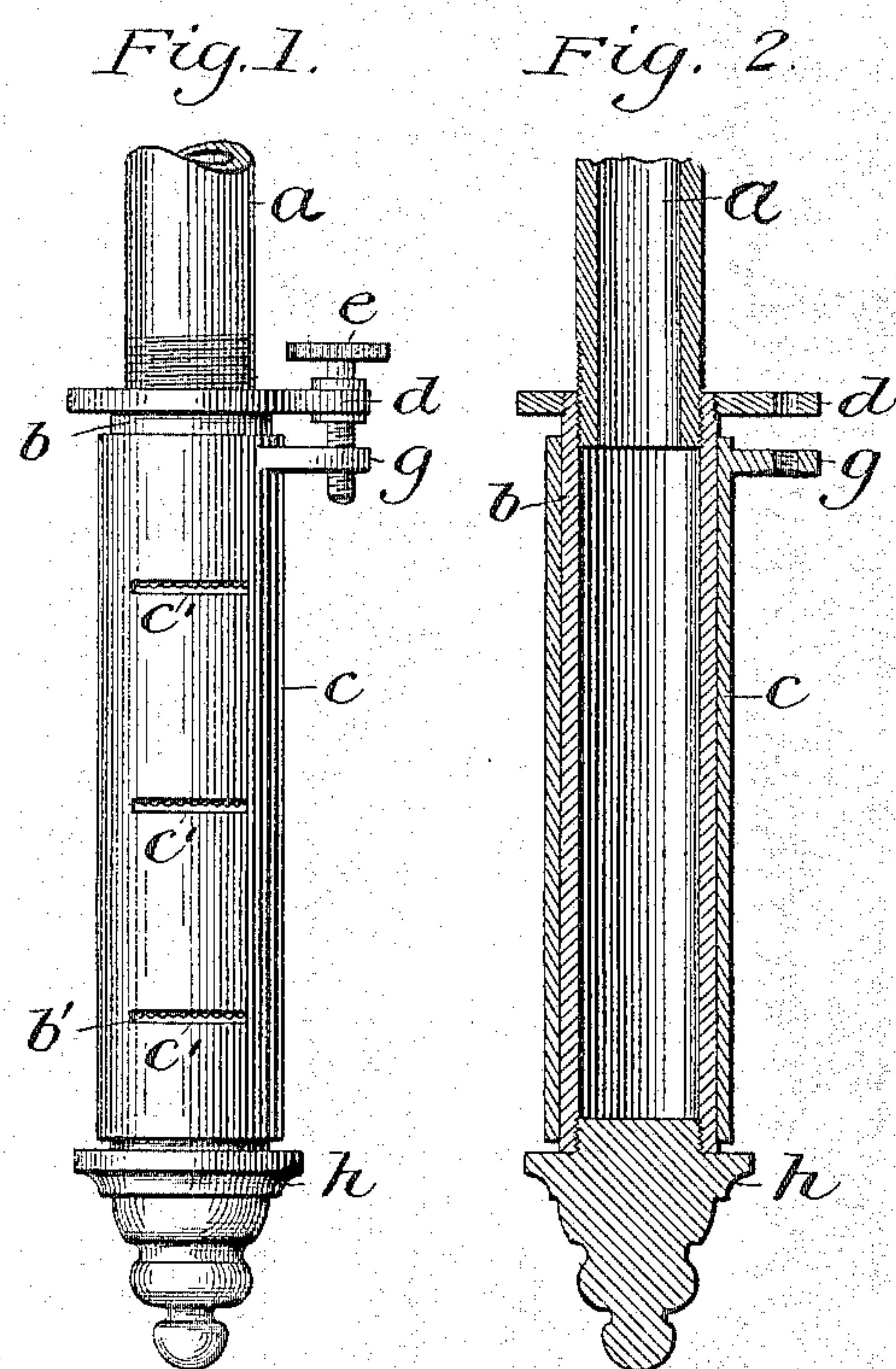
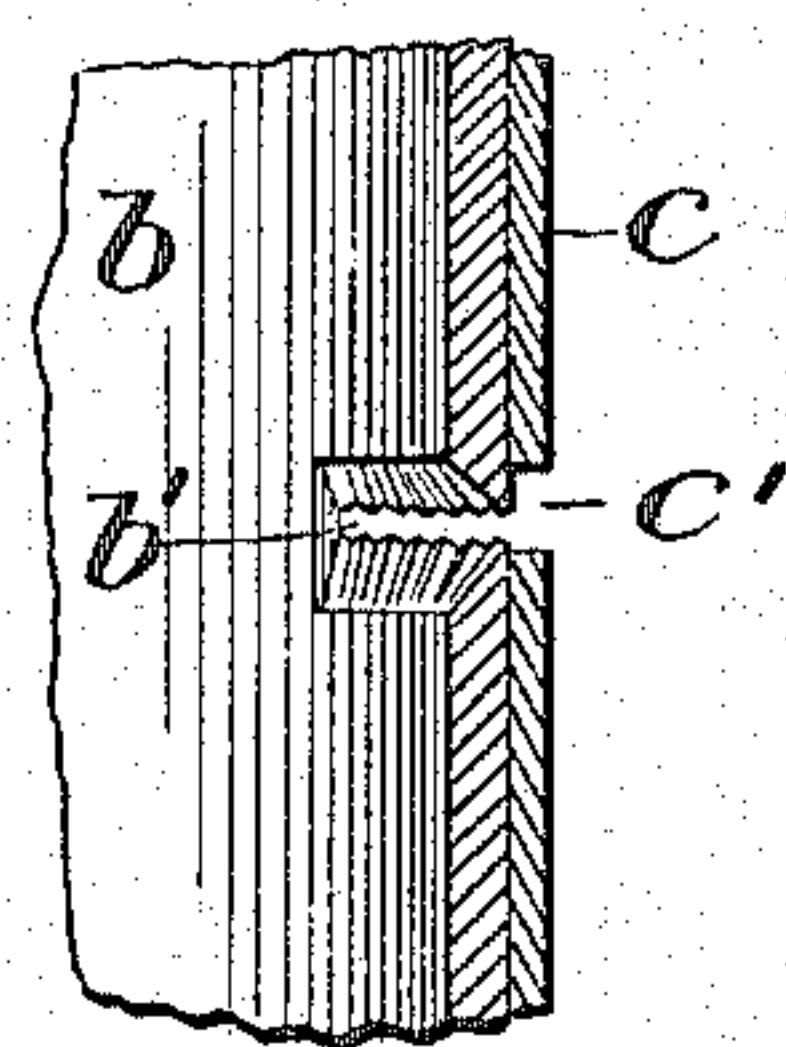


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

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DEVICE FOR CONVERTING HOT AND DRY STEAM INTO COOL AND WET VAPOR.

SPECIFICATION forming part of Letters Patent No. 640,547, dated January 2, 1900.

Application filed July 12, 1899. Serial No. 723,640. (No model.)

To all whom it may concern:

Be it known that I, ROBERT DUFFIE, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented a certain new and useful Device for Converting Hot and Dry Steam into Cool and Wet Vapor, of which the following is a specification.

The object of my invention is to provide a device by means of which the proper condition of humidity in the atmosphere in rooms devoted to the spinning and weaving of cotton may be easily and cheaply maintained.

To this end my invention consists in an orifice of peculiar character, through which, when steam is allowed to escape under pressure, the escaping steam is changed from hot and dry to cool and wet.

The accompanying drawings illustrate my invention, in which—

Figure 1 is a side elevation of a device provided with my invention. Fig. 2 is a view in longitudinal section of Fig. 1, and Fig. 3 is a view of a portion of the device shown in Fig. 1 in longitudinal section across one of the orifices.

Similar letters refer to similar parts in the several views.

The letter *a* represents a portion of a steam-pipe, on the end of which is secured the tube *b*, provided with the collar *d* and having its outer end stopped with the plug *h*.

c is a sleeve adapted to slide over the tube *b* and is adjustable on said tube by means of the screw *e*, seated in the collar *d* and working through the stud *g*, secured to said sleeve. Through the side of the tube *b* are cut the narrow slits or orifices *b'*, having sharp edges, and through the sleeve *c* are cut corresponding orifices *c'* to coincide with the orifices *b'*, which orifices may be entirely closed or opened to their fullest extent by manipulating the screw *e*. The orifices in the tube *b* and the sleeve *c* may have sharp and straight edges or sharp and serrated edges, the effect on the

steam under pressure flowing through a narrow opening having sharp edges being to cause it to become at once cool and wet and to diffuse itself throughout the surrounding atmosphere and become incorporated therewith.

It is obvious that the device in which the orifices for the escape of steam are situated and the mechanism by means of which the extent of their area is governed might be varied indefinitely; but these do not constitute the invention, which, as before stated, is an orifice of peculiar character, through which, when steam is caused to escape, said steam is changed in character from hot and dry to cool and wet.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device for converting hot and dry steam into cool and damp vapor, the steam-pipe *a*, the pipe *b* connected thereto, and provided with a collar *d* upon its upper end, and the plug *h* for closing the end of the pipe, combined with a sleeve *c* provided with a stud *g* at its upper end and a set-screw *e* for adjusting the sleeve upon the pipe *b*; the pipes *b* and *c* being provided with narrow slits through their sides, and the slits through the pipe *b* having serrated edges, substantially as shown and described.

2. In a device for diffusing steam in the form of dew, a pipe closed at one end, and open at the other for the admission of steam, and which is provided with slits in its side, combined with an endwise-movable concentric pipe provided with corresponding slits through its sides, and means whereby the outer pipe can be moved endwise for the purpose of adjusting the size of the slits, substantially as shown.

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Witnesses:

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