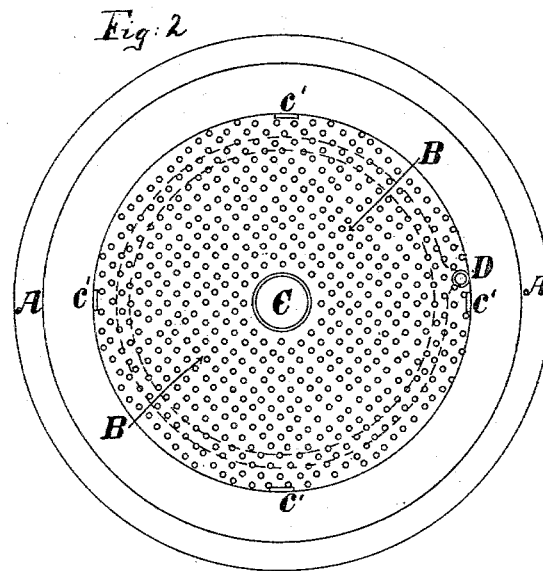
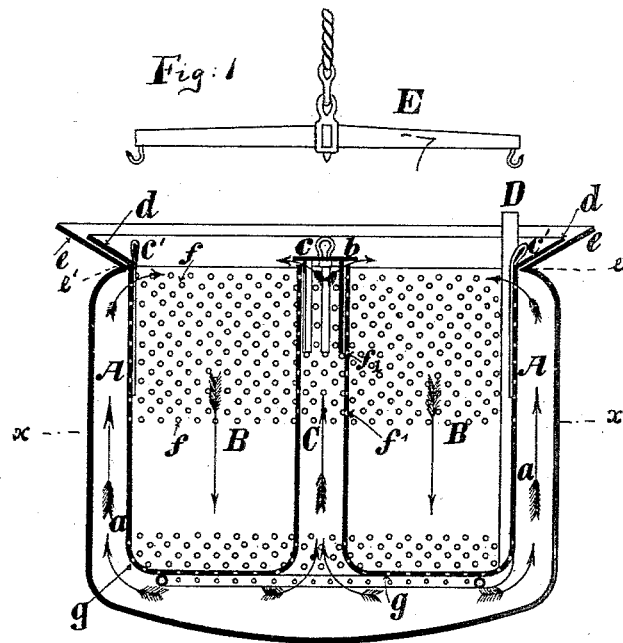


(No Model.)

R. PERZINA.
DYEING APPARATUS.

No. 384,389.

Patented June 12, 1888.



Witnesses:
Alfred Joughmans.
William Partington.

Inventor:
R. Perzina.
by his attorneys.
Roeder & Briesen.

UNITED STATES PATENT OFFICE.

RUDOLF PERZINA, OF AACHEN, PRUSSIA, GERMANY.

DYEING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 384,389, dated June 12, 1888.

Application filed August 11, 1887. Serial No. 246,658. (No model.)

To all whom it may concern:

Be it known that I, RUDOLF PERZINA, a subject of the Emperor of Germany, residing at Aachen, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Dyeing Apparatus, of which the following is a specification.

This invention relates to an automatic dyeing apparatus in which the materials to be dyed need no manipulation after being placed in the vessel or vat.

The invention consists in the various features of construction, more fully pointed out in the claim.

In the accompanying drawings, Figure 1 is a vertical central section of my improved dyeing apparatus. Fig. 2 is a cross-section on line *x x*, Fig. 1.

The dyeing apparatus is composed of two vessels, the outer vessel, A, and an inner vessel, B. The vessel A is provided with a contracted neck, *e'*, from which extends upwardly a flaring flange, *e*, that supports the flanged head *d* of the inner vessel, B.

The vessel B has a perforated bottom, *g*, from which projects upwardly a central tube, C, perforated along its upper end, as shown at *f'*, and open on the top and bottom. The upper end of vessel B is likewise perforated, as shown at *f*. A lid, *b*, having a flat surface, may be locked upon tube C, and projects laterally beyond the tube. This lid may be raised or lowered to any desired extent, and is held in position by downwardly-extending guide-bars that enter tube C and hold the lid at any desired elevation by frictional contact. The lid is to prevent foaming of the bath, and it controls the quantity of liquid admitted from the mouth of tube C into vessel B.

In use the inner vessel, B, is filled with the material to be dyed—such as wool, cotton,

jute, &c.—and is lowered into the outer vessel, A, as in Fig. 1. The dyeing-bath is now poured into vessel B, and the temperature is raised to cause a circulation of the bath. This circulation will be through the perforated bottom of vessel B, through the space *a* between vessels A B, and through the tube C and back into vessel B by perforations *f f'*. This operation continues as long as the heat is applied to the apparatus, and thus the contents of vessel B will be brought continually in contact with the circulating-bath. To produce this circulation, the contracted neck *e'* and the cover *b* are both of importance, as they prevent bubbling over of the bath, and as they guide it continually back into the vessel B.

D is a tube for replenishing the bath. This tube is curved at its lower end, and is perforated between the bottoms of the vessels A B to permit the discharge of the bath.

After the dyeing process is completed, the vessel B is raised by means of a suitable bar or cross, E, which is provided with hooks, and is first lowered to engage eyes *e'* on vessel B. On now raising the bar E the vessel B will be raised with it, and may thus be removed from vessel A.

What I claim is—

The combination of outer vessel, A, having contracted neck *e'* and flange *e*, with the inner perforated vessel, B, having flange *d*, and with the perforated tube C, cover *b*, and inlet-tube D, having perforated lower end, substantially as specified.

In testimony whereof I hereunto sign my name, in the presence of two subscribing witnesses, this 23d day of May, 1887.

RUD. PERZINA.

Witnesses:

FRANZ BERTRAM,
JOH. HECKMANN.