(No Model.)

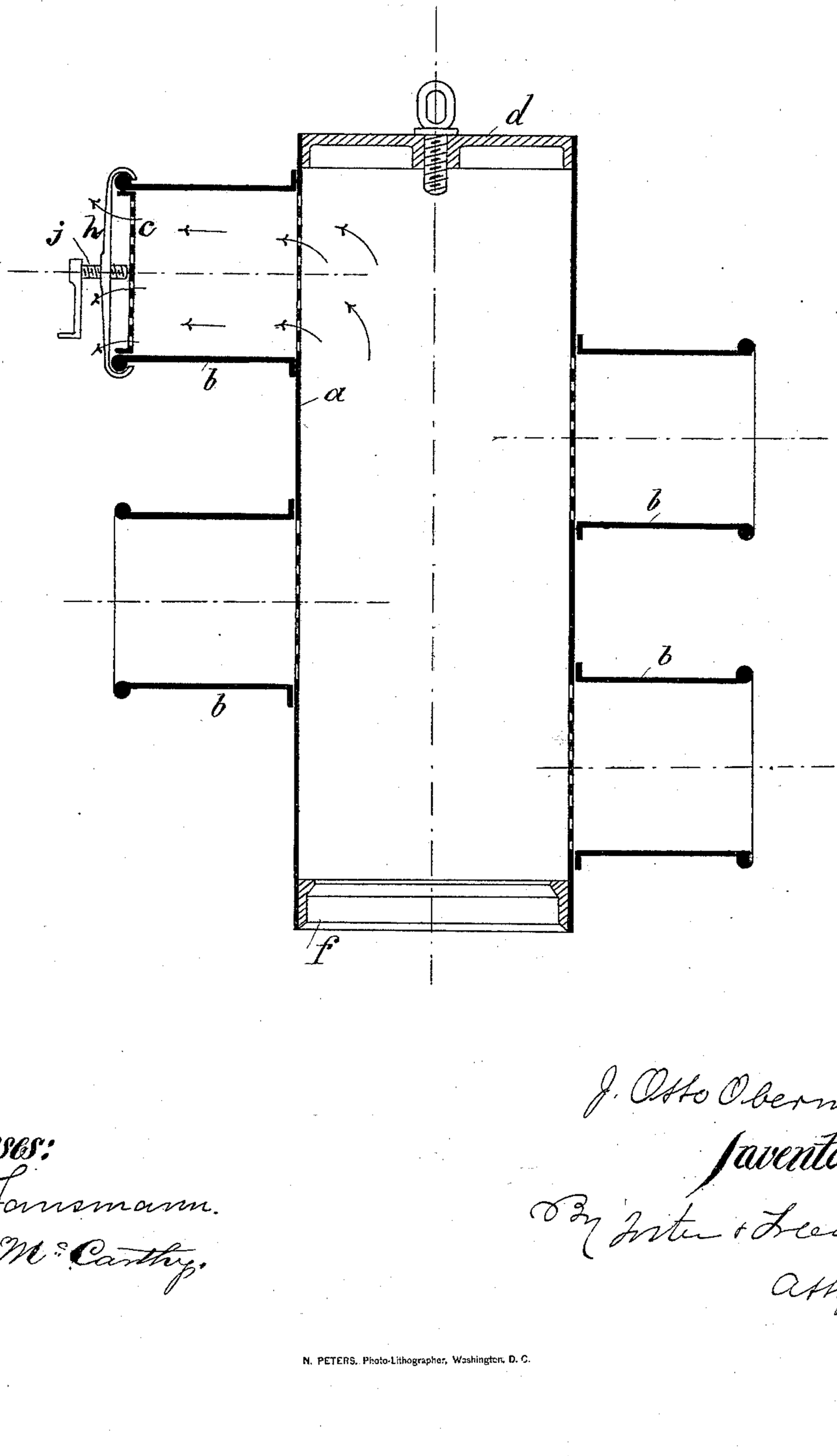
4 Sheets—Sheet 1.

J. O. OBERMAIER.

APPARATUS FOR DYEING.

No. 335,712. Patented Feb. 9, 1886.

Fig. 1.



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(No Model.) 4 Sheets—Sheet 2.

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APPARATUS FOR DYEING.

No. 335,712. Patented Feb. 9, 1886.

Fig. 2.

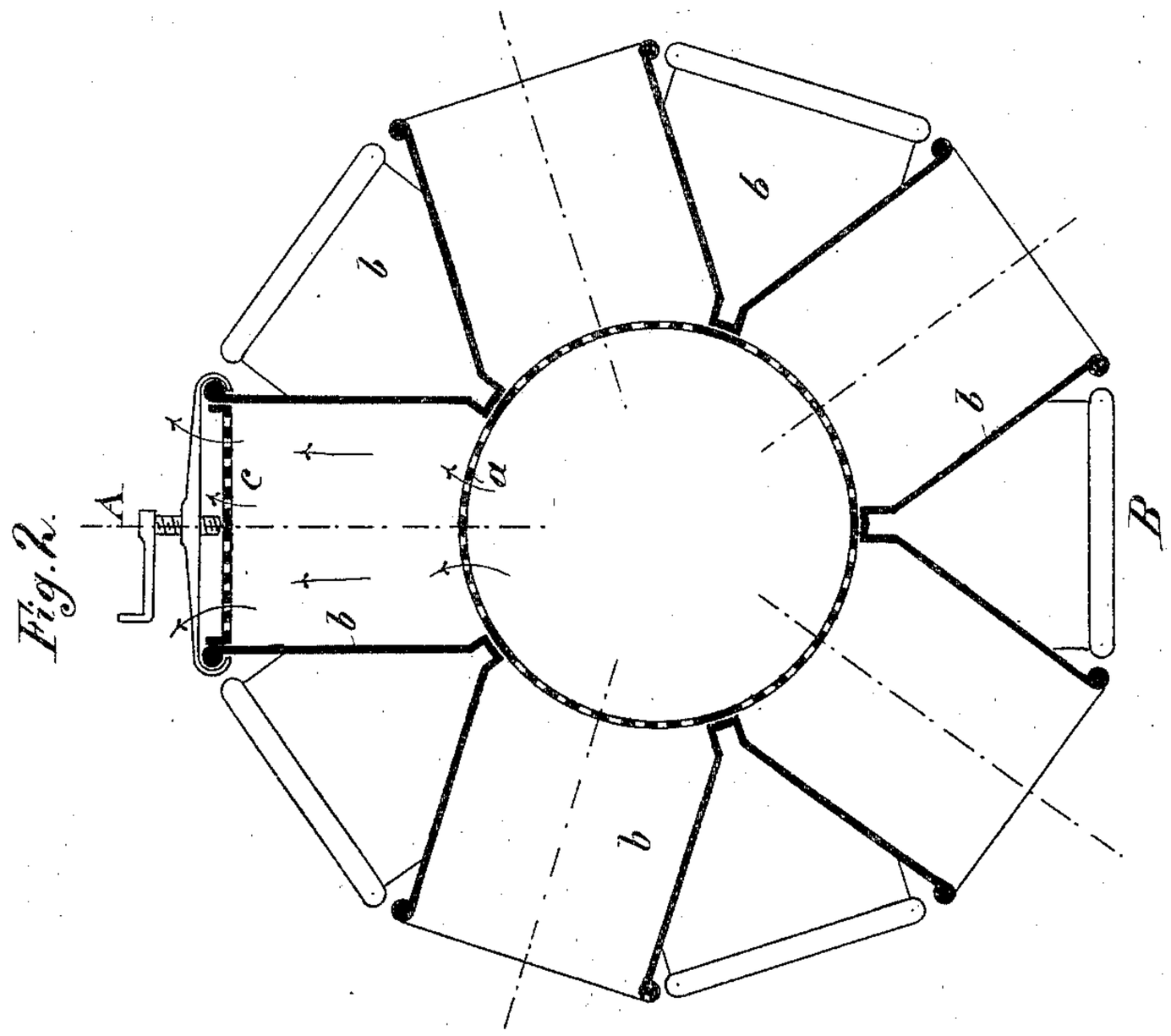
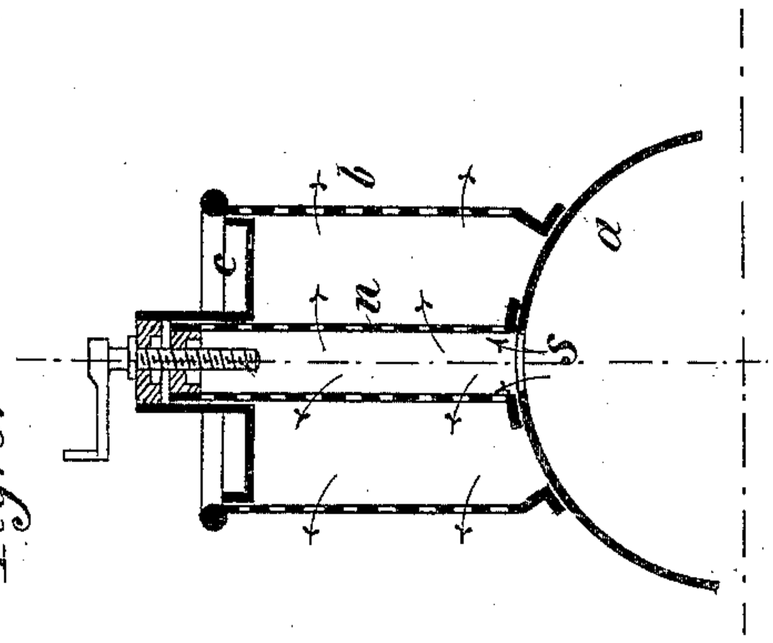


Fig. 3.



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(No Model.)

4 Sheets—Sheet 3.

J. O. OBERMAIER.

APPARATUS FOR DYEING.

No. 335,712. Patented Feb. 9, 1886.

Fig. 5.

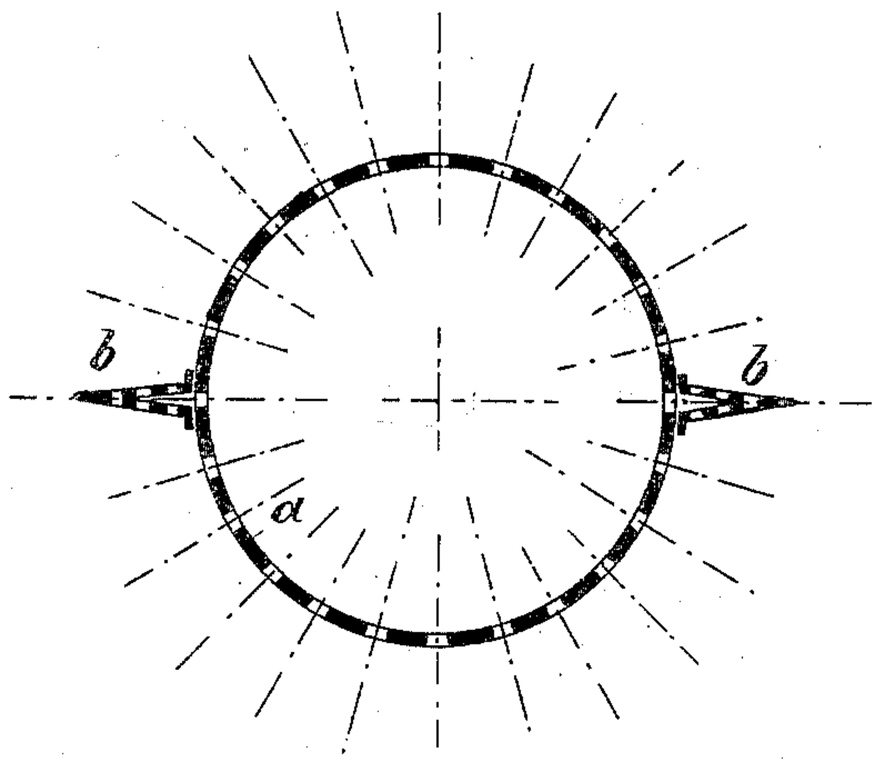


Fig. 7.

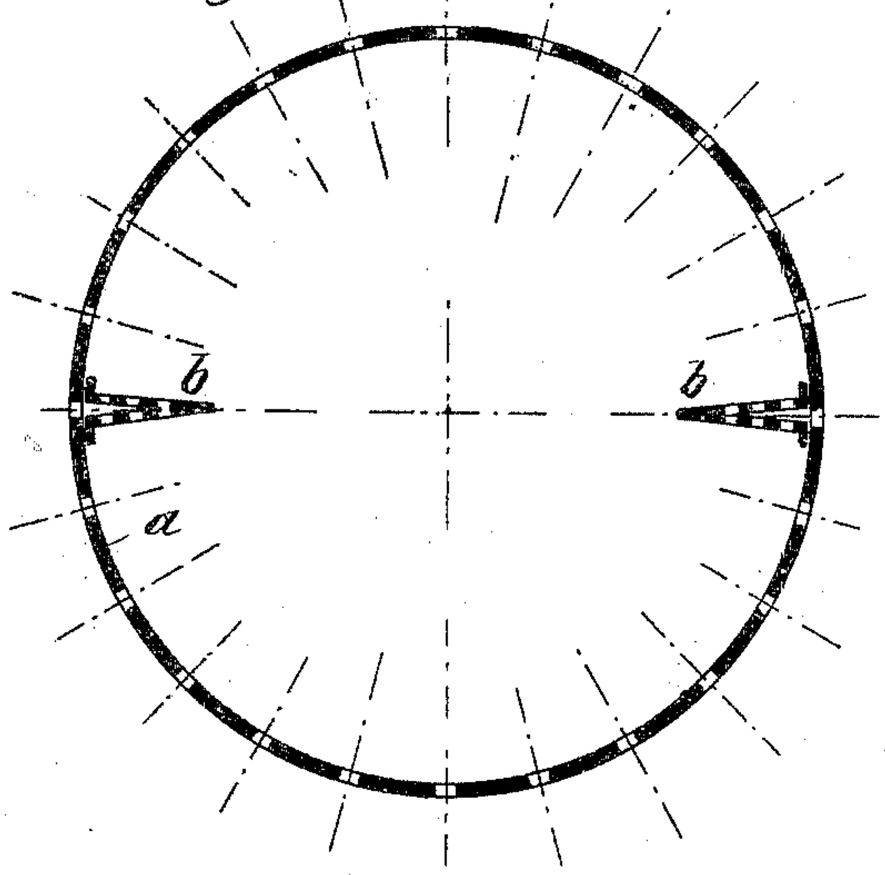


Fig. 4.

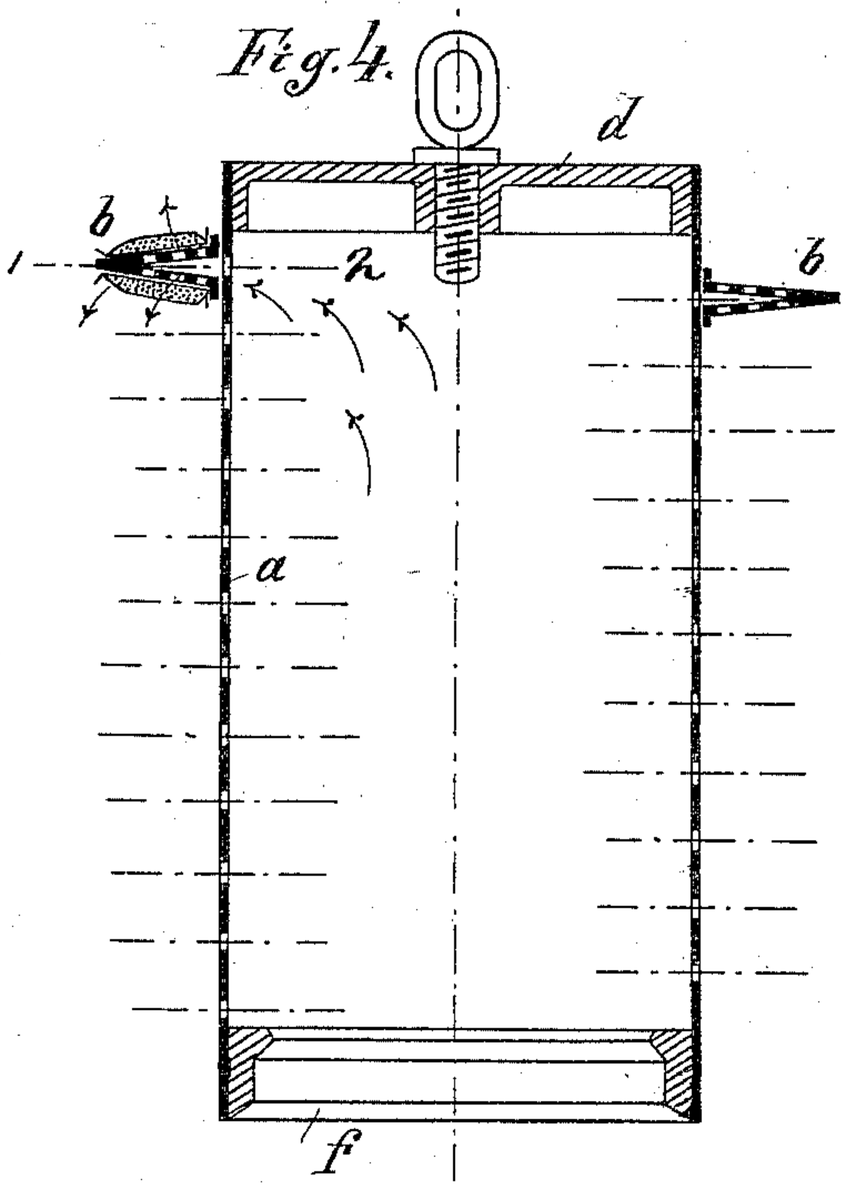
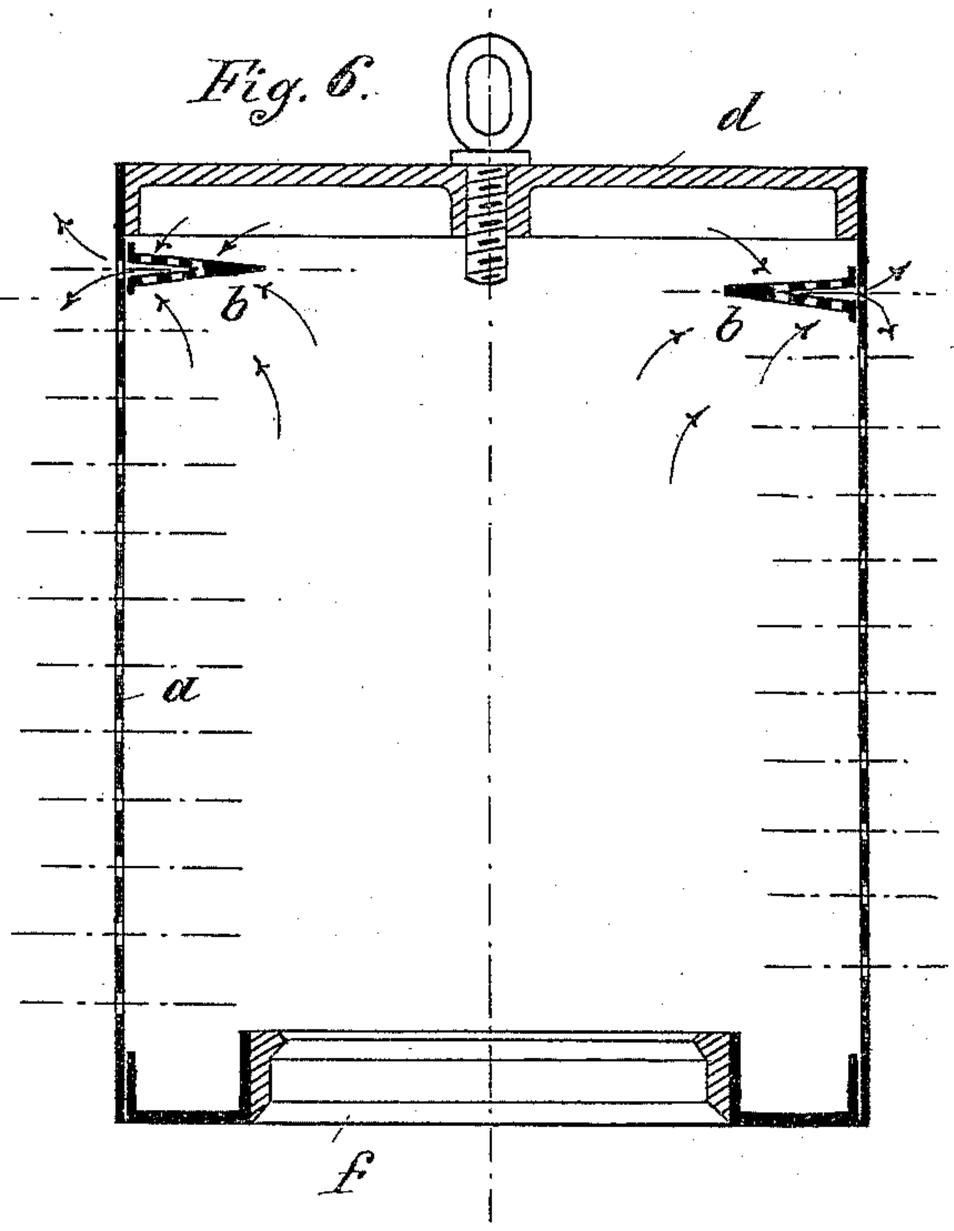


Fig. 6.



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(No Model.)

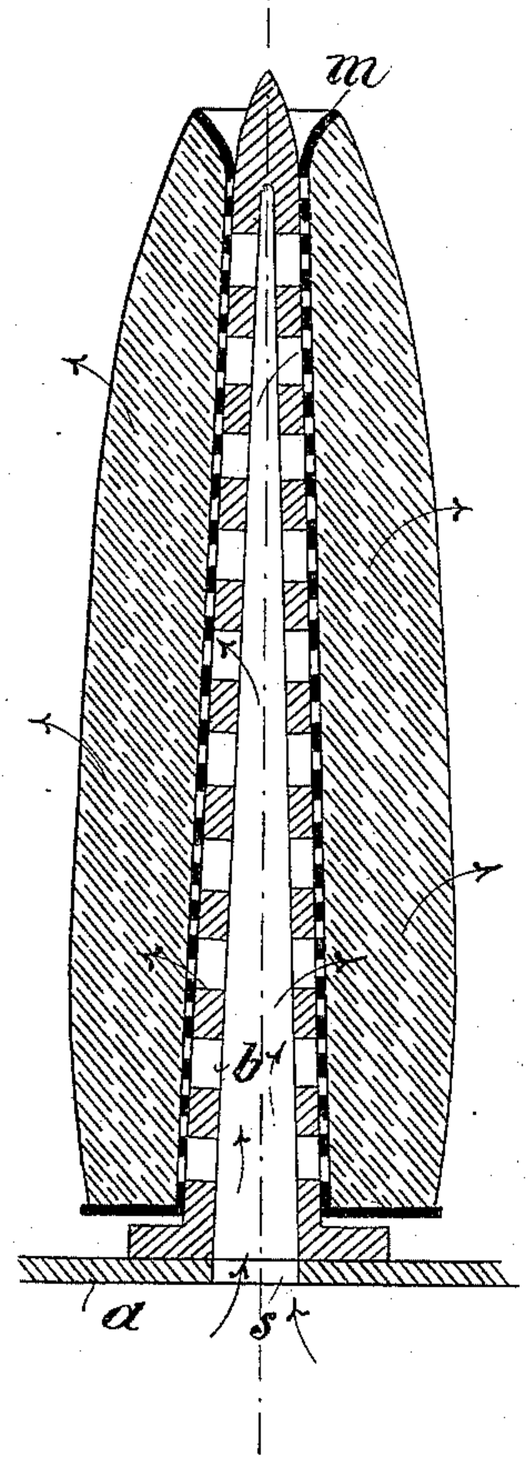
4 Sheets—Sheet 4.

J. O. OBERMAIER.

APPARATUS FOR DYEING.

No. 335,712. Patented Feb. 9, 1886.

Fig. 8.



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UNITED STATES PATENT OFFICE.

JULIUS OTTO OBERMAIER, OF LAMBRECHT, BAVARIA, GERMANY.

APPARATUS FOR DYEING.

SPECIFICATION forming part of Letters Patent No. 335,712, dated February 9, 1886.

Application filed June 25, 1885. Serial No. 169,797. (No model.)

To all whom it may concern:

Be it known that I, JULIUS OTTO OBERMAIER, a subject of the King of Bavaria, residing at Lambrecht, in the Kingdom of Bavaria, German Empire, have invented new and useful Improvements in Apparatus for Treating Textile Fibers, Webs, and other Textile Materials by Liquors or Gases, of which the following is a specification.

My invention is an apparatus for facilitating the manipulation of yarns, fibers, and materials in dyeing and otherwise treating the same with liquids or gases; and it consists of a central perforated case supporting radiating receptacles adapted to hold the materials to be operated upon, as fully set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of my improved apparatus. Fig. 2 is a transverse section. Fig. 3 is a transverse section illustrating a modification. Figs. 4 and 6 are sectional elevations showing the apparatus as constructed for operating upon fibers wound on bobbins. Figs. 5 and 7 are transverse sections, respectively, of Figs. 4 and 6. Fig. 8 is an enlarged longitudinal section on the line 1 2, Fig. 4.

The structure consists, essentially, of a central hollow standard or case, *a*, closed at the top by a cap, *d*, and a series of radiating receptacles for the fibers or materials to be treated or dyed, the said receptacles being in communication with the hollow case, so that liquor or gas passing to or from the case will pass through the said receptacles and through the material supported by said receptacles. These parts are differently constructed, according to the character of the material to be operated upon.

In Figs. 1 to 3 I have shown a construction specially adapted for the treatment of loose pieces or fibers, which are best operated upon when confined in chambers. In said figures each receptacle *b* is tubular in form and radiates from the central case, *a*, which is perforated opposite the inner end of the receptacle, so that liquor or gas may flow from the case to the receptacle, or vice versa, and each receptacle is provided with an outer perforated cap, *c*, which is retained temporarily in place and held against the material in the receptacle by a screw, *j*, passing through a detachable bail or cross-piece. The case *a* is provided at the lower end with a ring, *f*, which may be adapted to fit a bearing upon the spindle of a centrifugal machine, by which the structure may be rapidly rotated to expel the liquor remaining in the material after it is removed from one vat and prior to inserting it into another. The ring *f* is also adapted to fit a bearing in the dyeing-vat, so that the current of liquor impelled by the pump will flow into the casing *a*, and regularly outward through the receptacles and materials held thereby.

In Figs. 1 and 2 the ends of the receptacles are perforated so that the liquor flows radially. In Fig. 3 a lateral direction is given to the liquor-current by perforating the side of the casing constituting the receptacle, and by inserting therein a longitudinal perforated tube, *n*, communicating at the inner end with one of the perforations *s* in the case *a*, an annular cap, *c*, confining the material in place. When the material is in a different form—as, for instance, when it is in the form of cords or threads suitable to be held upon a bobbin the receptacles therefor are constructed—as shown in Figs. 5 to 8. Thus each receptacle is a perforated tapering tube, *b*, radiating from the casing *a*, and communicating at the inner end with one of the perforations *s* of the casing, and the thread is wound upon a tapering perforated tubular bobbin, *m*, which can be slipped onto the tubular receptacle *b*, as shown in the drawings. The tubular receptacles may radiate outward from the casing, as shown in Figs. 4, 5, and 7, or inward, as shown in Fig. 6, the casing supporting a large number of such radiating receptacles and the liquor flowing outward or inward through the material supported by said receptacles in like manner, as before described.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. An apparatus for treating textile fibers, &c., consisting of a simple hollow perforated casing, the independent radiating perforated receptacles supported by and communicating directly with the casing through said perforations, each adapted to hold a quantity of

material to be treated, and the perforated adjustable cap for confining the material in place, substantially as described.

2. The combination of the central perforated upright cylinder, series of radiating perforated supports, each communicating with one of the perforations of the casing, and tubular perforated bobbins adapted to support the material to be treated and to be applied to the said radiating supports, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JULIUS OTTO OBERMAIER.

Witnesses:
B. ROI,
O. WICKMANN.