(No Model.) 2 Sheets—Sheet 1.

W. & M. POLLARD.

MACHINE FOR DYEING AND WASHING WOOL AND COTTON.

No. 338,438. Patented Mar. 23, 1886.

Fig. 1.

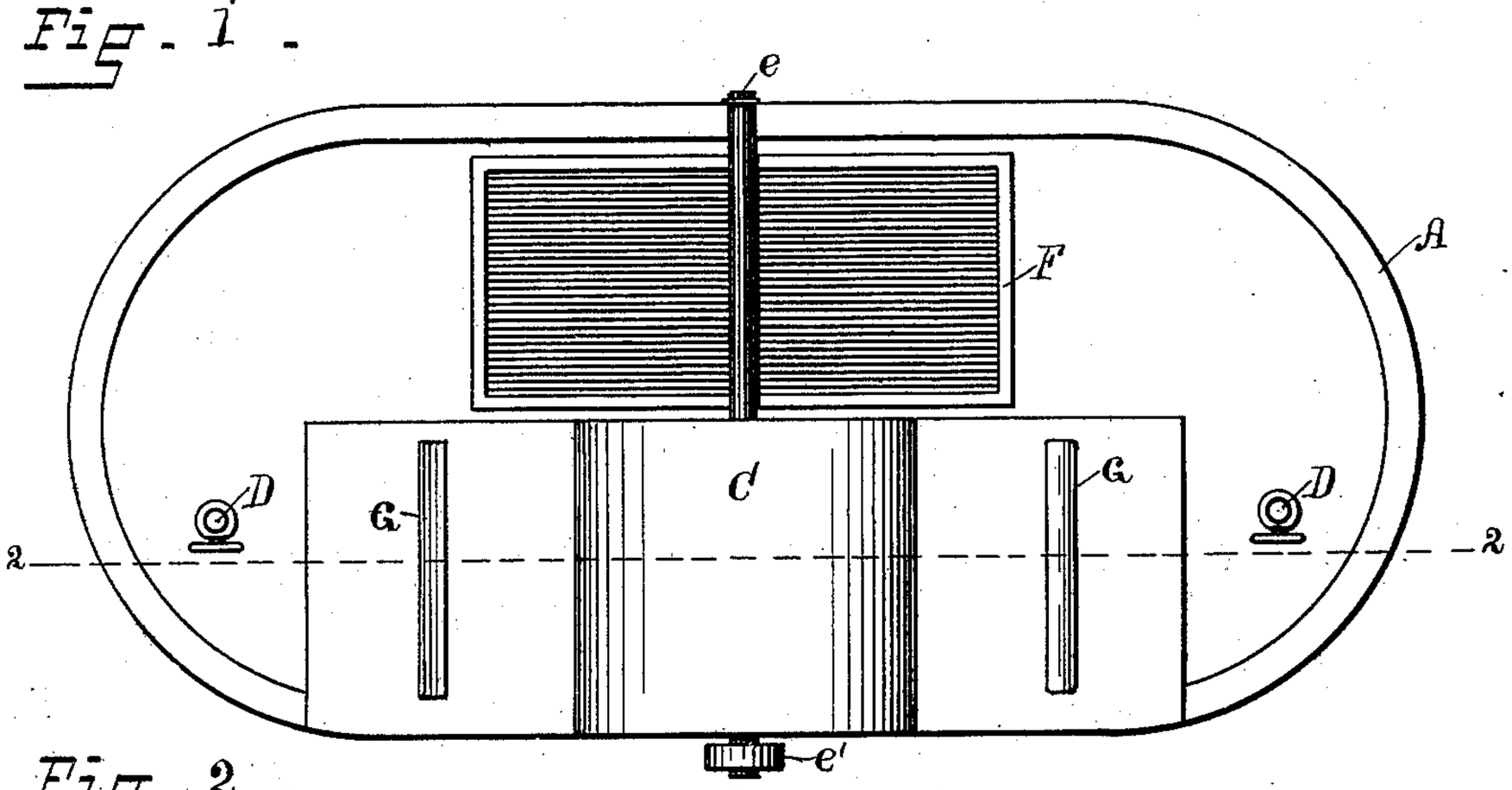


Fig. 2.

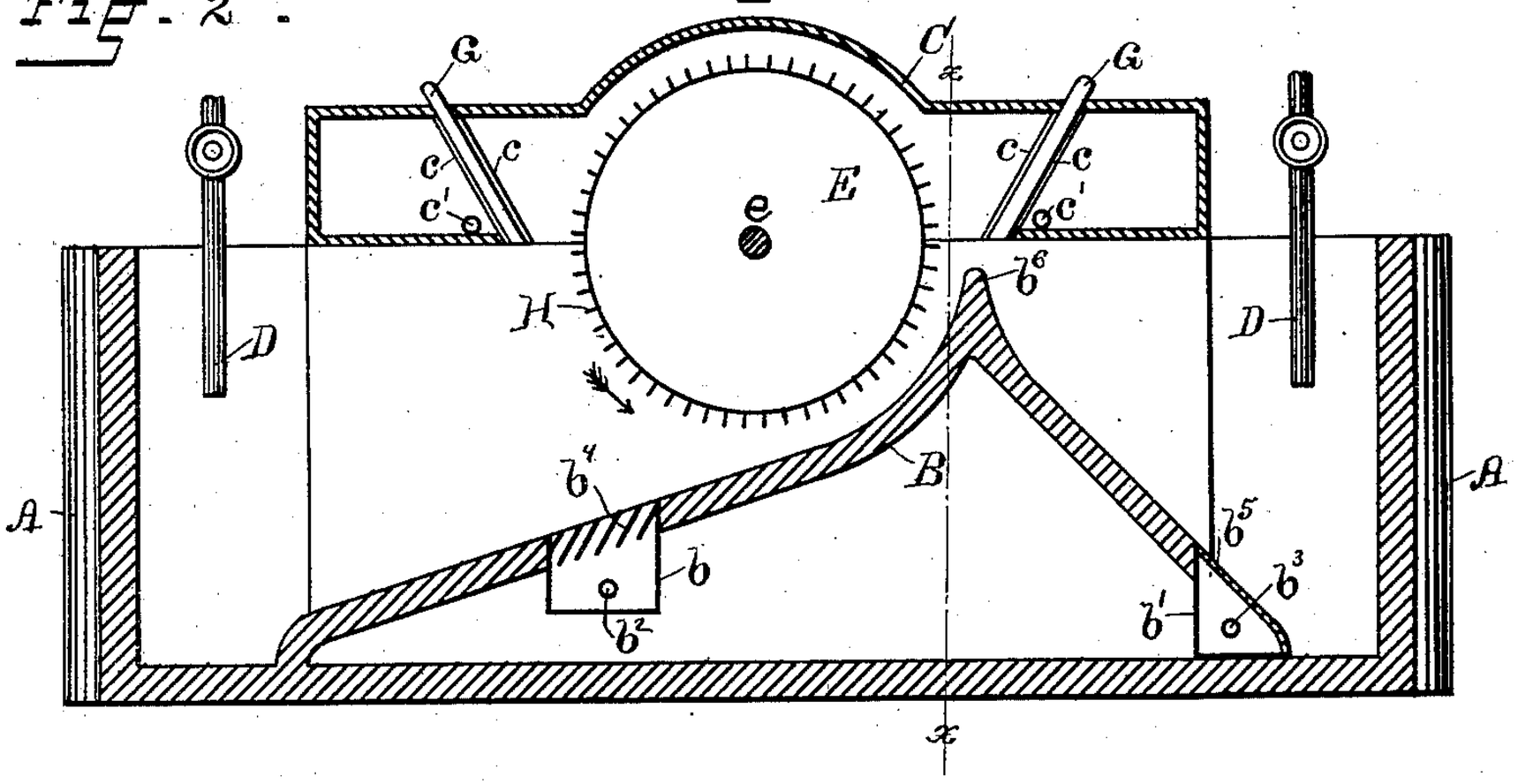
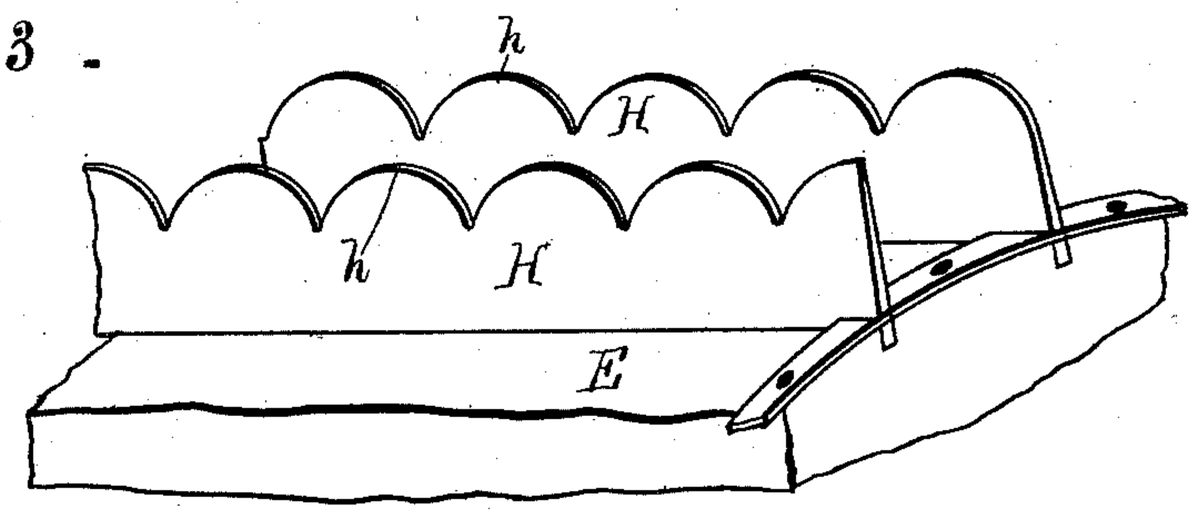


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

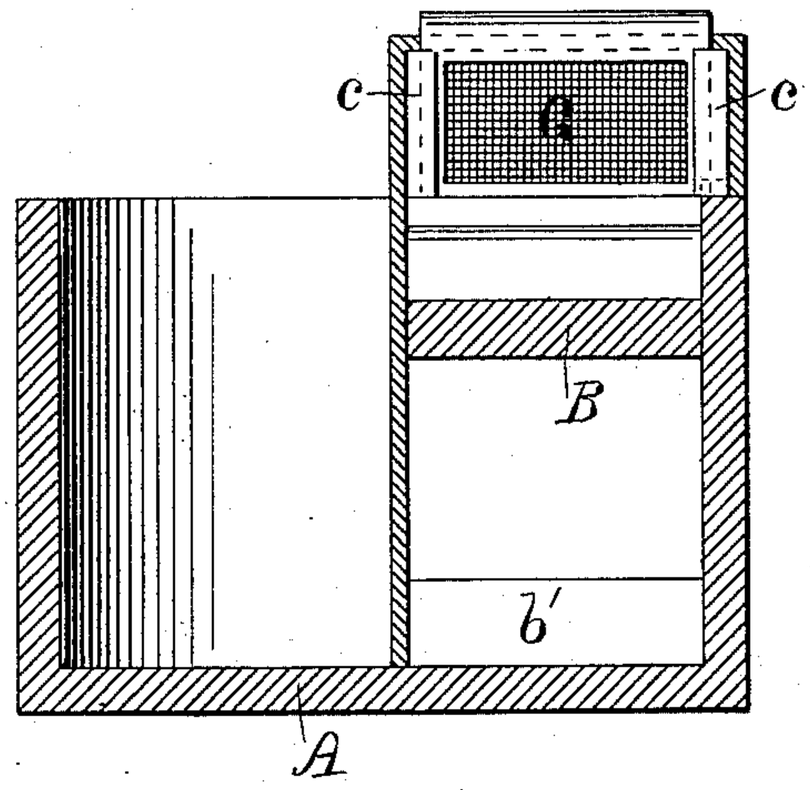
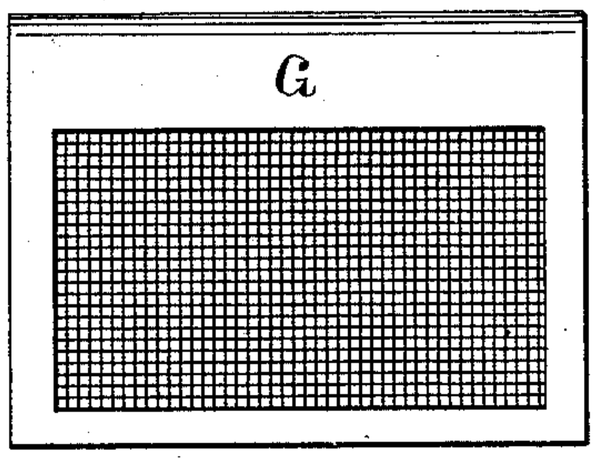


Fig. 5.



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UNITED STATES PATENT OFFICE.

WRIGHT POLLARD AND MOSES POLLARD, OF PAWTUCKET, RHODE ISLAND.

MACHINE FOR DYEING AND WASHING WOOL AND COTTON.

SPECIFICATION forming part of Letters Patent No. 338,438, dated March 23, 1886.

Application filed March 3, 1884. Serial No. 122,770. (No model.)

To all whom it may concern:

Be it known that we, WRIGHT POLLARD and MOSES POLLARD, both of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines for Dyeing and Washing Wool, Cotton, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Our invention relates to the vats employed in dyeing and cleaning loose cotton or wool, and particularly to such devices for feeding the material through the vats, the object of our invention being to thoroughly open the material to the action of the liquid, and yet avoid any injury to the material.

To this end our invention consists in the peculiar and novel construction of the feed-roll, and also in the novel arrangement of the vat and its sieves, as hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a plan view of our improved vat. Fig. 2 is a vertical longitudinal section of the same on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of a fragment of the feed-roll, showing its scalloped vanes. Fig. 4 is a vertical sectional view of the vat, showing one of the screens G. Fig. 5 is a detailed view of said screen.

In the said drawings, A designates the vat, which may be either of the form shown or of any other suitable or preferred form, as shown, the ends of the vat being rounded to facilitate the circulation of the material within the vat. Upon the bottom of the vat, and at one side of the same, is placed a ∧-shaped partition, B, while above the partition B is placed the cover C.

Near each end of the vat A is placed a steam-pipe, D, which throws jets of steam into the vat.

Between the partition B and the cover C is placed the feed-roll E, which is mounted upon the shaft *e*, journaled upon the sides of the vat. The shaft *e* also carries a revolving screen, F, and is provided with a pulley, *e'*, by means of which power is transmitted to the shaft for the purpose of revolving the feed-roll E and the screen F.

Between oblique guides *c c*, placed in pairs at each end of the cover C, are placed the screens G, and behind each screen is an outlet, *c'*, for water and dye thrown off through the screens G by the roll E.

The partition B is provided with the steam-traps *b b'*, having steam-inlets b^2 b^3, from which pipes lead to a steam-generator, the top of the trap *b* being covered by oblique plates b^4, while the opening of the trap *b'* is covered by a screen, b^5. These traps serve to admit steam into contact with the loose material passing through the vat, while the oblique plates b^4 and the screen b^5 prevent the material from entering the traps and becoming clogged therein. Any of the liquid which may pass between the plates b^4 and through the screen b^5 is instantly blown back again by the currents of steam escaping from the traps *b b'*. These traps having no communication with the space between the partition B and the bottom of the vat, water and steam are excluded therefrom.

H designates the vanes of the feed-roll, which are secured to the periphery of said roll in such manner as to project radially therefrom. The outer edge of each vane is scalloped, as at *h*, so that the vanes may take hold of the material and open it to the action of the dye or liquid, and yet not lacerate or otherwise injure the material.

The operation of the machine is as follows: The liquid is placed in the bottom of the vat A, and steam is forced through it from the inlets b^2 b^3, and steam is also forced into the vat upon the liquid and material through the pipes D D. The material having been fed into the vat at the left-hand side, the roll E, revolving in the direction of the arrow, carries the material through the liquid and up over the apex b^6 of the partition B. The material then falls down upon the right-hand end of the vat-bottom, is then guided by the rounded end of the vat to the revolving screen F, and is then caught by the revolving screen F and lifted out of the liquid, and then again dropped into it. These operations are continued till the liquid and steam have acted upon all parts of the material. The liquid which is carried up by the roll is thrown out through the screens G, and escapes through the outlets *c'*. After a vat full of material has been thoroughly treated the machine is stopped, the material

removed, and a second vat full of material is placed in the liquid.

Having thus described our invention, we claim—

1. The roll E, provided with the scalloped radial vanes H, as and for the purposes described.

2. The vat A, provided with the partition B and the traps *b b'*, as and for the purposes specified.

3. The combination of the vat A, having the partition B, the traps *b b'*, the deflectors b^4, and screen b^5, the cover C, the screens G, the axle *e*, and the roll E, having vanes H, arranged and constructed as and for the purposes set forth.

4. In a vat, the combination, with a rotating cylinder having scalloped or indented radial vanes on its periphery and located near the top of and to one side of the vat, and the inverted-V-shaped partition situated directly below the cylinder, of a screen revolving by the side of and on the same axis as the cylinder, substantially as and for the purpose described.

5. The combination, with the vat A, of the cylinder E, the fan F, revolving side by side on the same axis, *e*, the partition B, having the traps *b b'*, the injecting-pipes b^2 b^3 and D D, the cover C, having the guides *c c*, holding the screens *g g*, and the outlet-pipes *c' c'*, for the purpose specified.

WRIGHT POLLARD.
MOSES POLLARD.

Witnesses:
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