

(No Model.)

2 Sheets—Sheet 1.

M. H. MASLAND.
YARN DYEING MACHINE.

No. 555,609.

Patented Mar. 3, 1896.

Fig: 1.

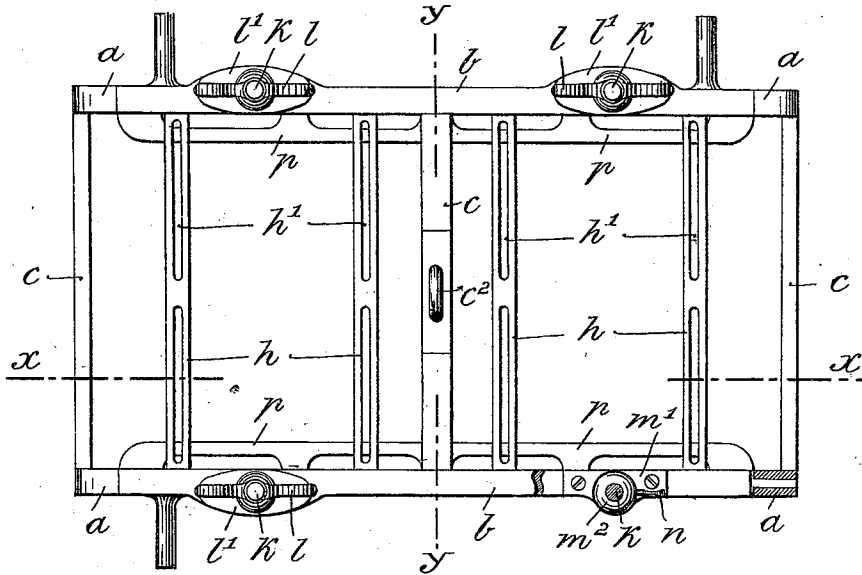
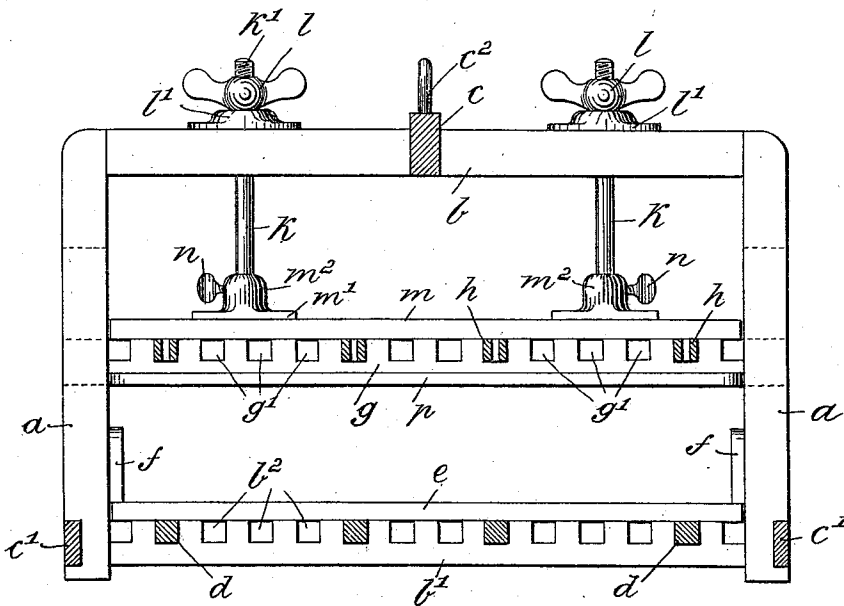


Fig: 4.



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Fig: 3.

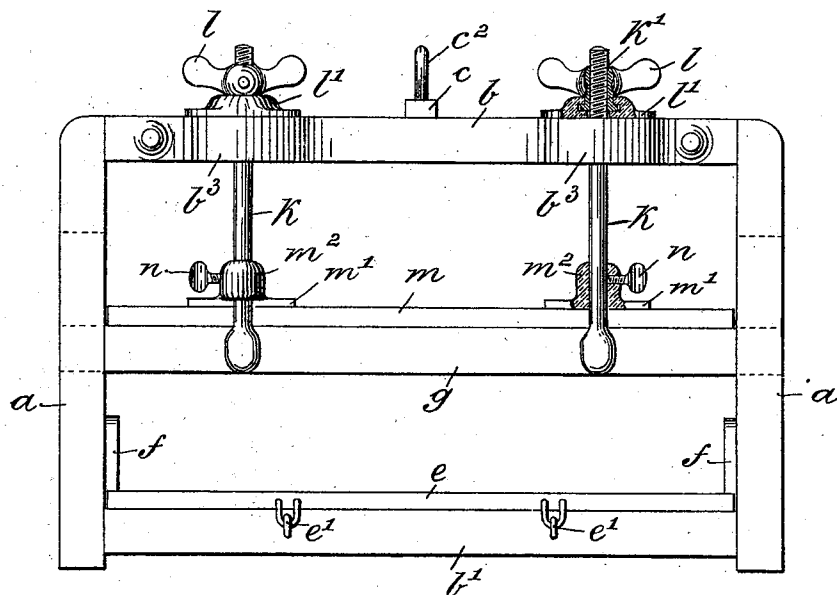


Fig: 2.

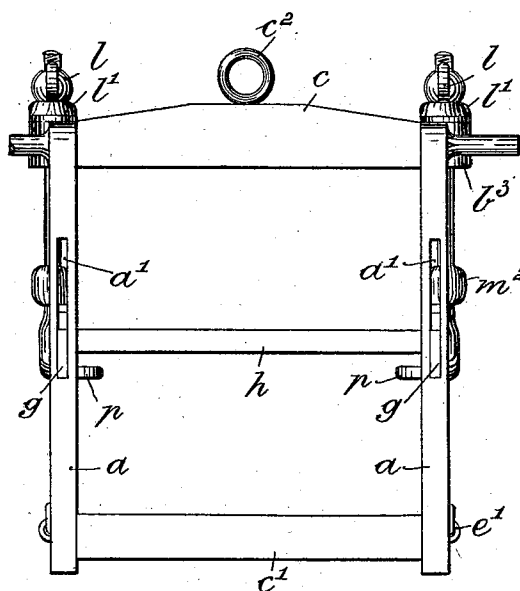
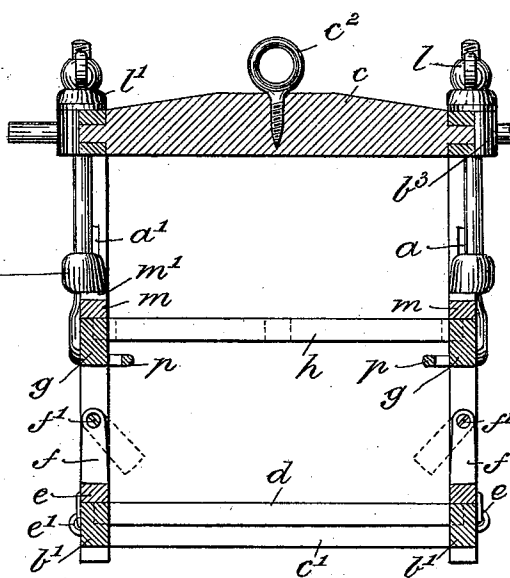


Fig: 5.



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UNITED STATES PATENT OFFICE.

MAURICE H. MASLAND, OF PHILADELPHIA, PENNSYLVANIA.

YARN-DYEING MACHINE.

SPECIFICATION forming part of Letters Patent No. 555,609, dated March 3, 1896.

Application filed October 12, 1895. Serial No. 565,456. (No model.)

To all whom it may concern:

Be it known that I, MAURICE H. MASLAND, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Cages for Yarn-Dyeing Machines, of which the following is a specification.

My invention has relation to a cage for dyeing yarn or the like of the type in which the cage whereon the yarn is suspended is adapted to be mounted in a vat or tank and to be agitated in the liquor contained therein, and it relates to the particular construction and arrangement of such a cage for such a machine.

The principal objects of my invention are, first, to provide a cage for dyeing yarns or the like of simple and durable construction and adapted to perform the functions of a first-class dye-cage; second, to provide in such a cage vertically-sliding supports to receive and hold the upper horizontal bars on which the yarn to be dyed is hung, and means for raising and lowering said supports in the main frame of the cage; third, to provide in a cage having such movable longitudinal supports a locking-rod adapted to be moved vertically independently of the supports to permit of the placing in or taking out of the bars on which the yarn is hung and also adapted to be locked down upon said movable supports to confine said bars thereto; fourth, to provide in such a cage horizontal bars upon which the yarn is hung, said bars being perforated or slit vertically to permit of the passage of dye liquor to the upper side of said bars to thoroughly saturate that portion of the yarn resting on said horizontal bars; fifth, to provide in such a cage a fixed support for the lower horizontal bars, and a locking-rod hinged thereto and adapted to be locked down upon the same by means of turn-buttons or the like pivoted to the main end frames of the cage, and, sixth, to provide in such a cage a perforated strip secured and projecting at right angles from the upper movable support, said perforated strip adapted to prevent the end skeins of yarn on the horizontal bars from clinging to the upper side frames of the cage or the yarn creeping into the recesses or bearings of said supports,

and also to permit of the passage of the dye liquor to the sides of the skeins, so as to thoroughly saturate the yarn.

My invention stated in general terms consists of a cage for dyeing yarn or the like constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a top or plan view of a cage embodying features of my invention. Fig. 2 is an end elevation. Fig. 3 is a side elevation. Fig. 4 is a longitudinal section on the line $x x$ of Fig. 1, and Fig. 5 is a transverse section on the line $y y$ of Fig. 1.

Referring to the drawings, the main frame of the cage consists of end pieces $a a$, secured together by longitudinal pieces $b b'$, and the upper and lower cross-pieces $c c'$. The upper cross-piece, c , is provided with a hook c^2 , by means of which the entire cage may be lifted into or out of the dye vat or tank. The lower longitudinal pieces, b' , constitute immovable supports for the lower horizontal bars, d , the ends of which fit into notches b^2 cut in the interior walls of said pieces b' . These bars d are confined in the notches b^2 by means of a longitudinal rod e hinged, as at e' , to the upper end of the outside of the support b' and adapted to be locked down upon the notched inner face of said support b' by means of the buttons f , pivoted, as at f' in Fig. 5, to the inside of the end pieces a . The end pieces $a a$ are vertically slotted, as at a' , to receive and guide the ends of the upper vertically-movable longitudinal supports, g . The inner faces of these supports g are notched, as indicated at g' , to receive and retain the ends of the upper horizontal bars, h , upon which, in connection with the lower horizontal bars, d , the skeins of yarn are to be hung. Projecting from the outside of each support g is a vertical shaft k , the upper end of which is screw-threaded, as at k' , and the lower end is integral with or secured to the support g . These shafts k' are guided at their upper ends either in the upper pieces, b , of the frame or in brackets b^3 thereof. The shafts k' are raised and lowered in the pieces

b or the brackets *b*³ thereof by means of the turn-button or screw *l*, which is threaded to the end *k*' and turns on a bracket *l*' secured to the piece *b*, the bracket *l*' confining the button *l* to the said piece *b*. By turning the screw or turn-button *l* in one direction the shaft *k* will be raised, thus elevating the support *g*, guided in the slots *a*' of the end pieces *a*, and by turning the button *l* in the opposite direction the shaft *k* and support *g* will be lowered.

The horizontal bars *h* are confined in the notches *g*' of the movable supports *g* by means of the longitudinal rod *m*, provided with brackets *m*', terminating in a sleeve *m*², which surrounds the shaft *k* and permits of an up-and-down movement of the rod *m* on the shafts *k* independently of the movement up and down in connection with the support *g* and shafts *k*. The rod *m* may be locked in any position to the shafts *k*, either down upon the support *g* or above the same, by means of the thumb-screws *n* passing through the sleeves *m*² and screwing down onto the shaft *k*.

The upper horizontal bars, *h*, are longitudinally slit at their center, as at *h*', which slits extend in a vertical direction to permit of the dye liquor rising through the bars *h* up to the yarn supported on said bars. A thorough saturation by the dye liquor of the underneath portion of the skein resting upon said bars is thereby assured.

Projecting at right angles to the inner side of the supports *g*, and below the notches *g*' thereof, is a longitudinal strip *p*, perforated lengthwise and adapted to prevent the sides of the end skeins of yarn from clinging to the support *g* or creeping into or entering the recesses or bearings of said support, and through the lengthwise perforations or slits of said strip the dye liquor is adapted to contact by attraction or otherwise with the sides of the skein adjacent to the support *g* to insure a thorough saturation of the same. It may be here remarked that the upper and lower supports *g* on both sides may be provided with such strips *p*, if desired.

Having thus described the nature and ob-

jects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the main frame of a cage, of upper and lower longitudinal notched supports, upper oblong-slotted and lower solid horizontal bars detachably engaging said supports, and means, substantially as described, connected with said frame and upper longitudinal supports for raising and lowering said slotted bars, substantially as and for the purposes described.

2. The combination with the main frame of a cage provided with adjustable notched supports, of oblong-slotted yarn-supporting horizontal bars engaging said supports, solid horizontal bars engaging and locked to recessed lower longitudinal supports, shafts carrying said supports and movable in said cage-frame and sleeves rotating on said frame and adapted to raise and lower said shafts to actuate said notched supports and yarn-supporting bars, substantially as and for the purposes described.

3. The combination with the main frame of the dye-cage and the lower fixed supports for the bars upon which the yarn is held, of the locking-rod hinged to each of said fixed supports and turn-buttons pivoted to the end pieces of said frame and adapted to lock the rod upon said fixed support, substantially as described.

4. The combination, in a dye-cage, of upper supports and horizontal bars mounted therein, a perforated strip secured to each of said supports and projecting at right angles thereto, said strip adapted to prevent the end skeins of yarn suspended from said horizontal bars from clinging to the supports or creeping into or entering the recesses of said supports and also to permit of the passage of dye liquor to the sides to thoroughly saturate the same, substantially as described.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

MAURICE H. MASLAND.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.