

(No Model.)

V. T. VAN FLEET.

APPARATUS FOR STEAMING CLOTH AND OTHER FABRICS.

No. 382,063.

Patented May 1, 1888.

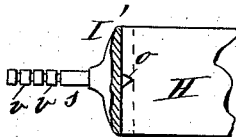
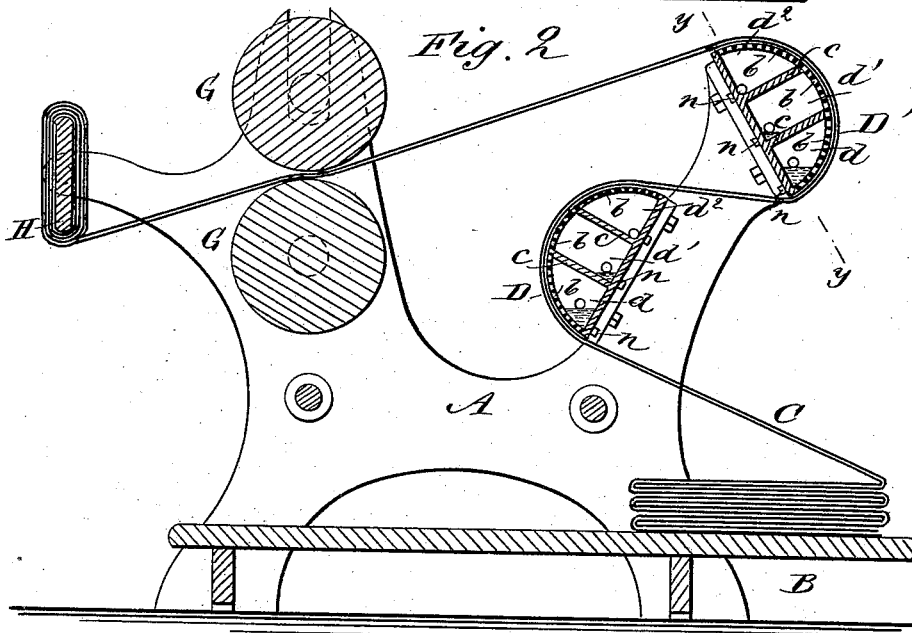
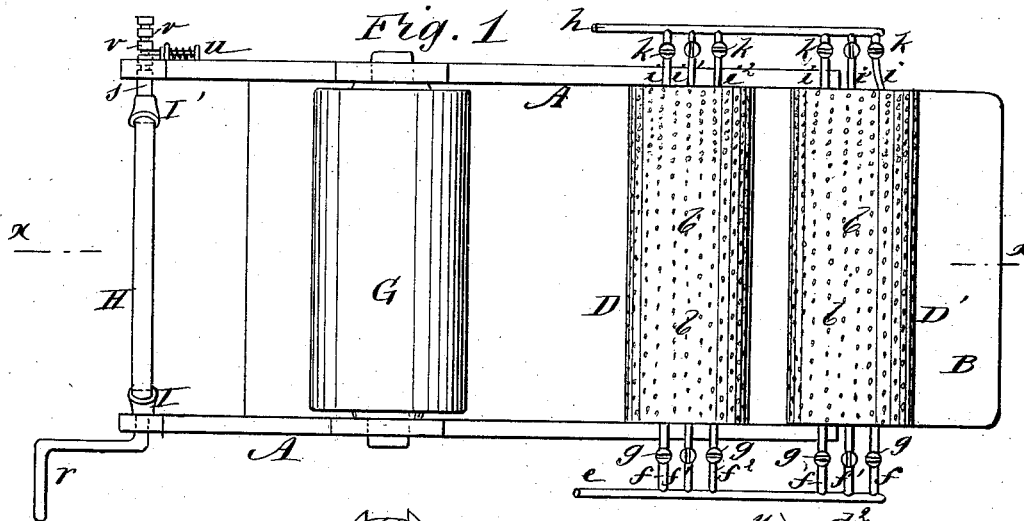
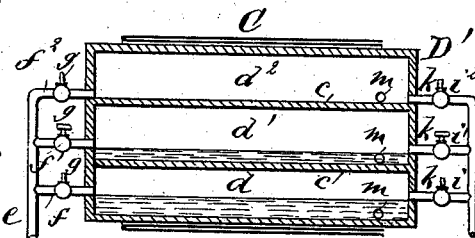


Fig. 5



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APPARATUS FOR STEAMING CLOTH AND OTHER FABRICS.

SPECIFICATION forming part of Letters Patent No. 382,063, dated May 1, 1888.

Application filed May 25, 1887. Serial No. 239,333. (No model.)

To all whom it may concern:

Be it known that I, VOORHEES T. VAN FLEET, of Somerville, in the county of Somerset and State of New Jersey, have invented 5 new and useful Improvements in Apparatus for Steaming Cloth and other Fabrics, of which the following is a full, clear, and exact description.

This invention relates to machines or apparatus—such as used by clothiers and others for steaming cloth, and commonly known as “steam-spongers”—in which the cloth, before use or as it comes from the manufacturers, is passed over one or more perforated surfaces through which steam of the proper hygrometric condition and pressure or heat is passed to act upon either one or opposite surfaces of the cloth, suitable means being provided for controlling the collection of water of condensation 20 in the apparatus accordingly as a variable moist or drier condition of the steam is required or as the nature or thickness of the goods may demand.

My invention consists in certain novel constructions and combinations of parts in apparatus of the above description, substantially as hereinafter described; and pointed out in the claims, whereby the desired results are very perfectly secured and a fuller adaptability of the apparatus to different qualities or kinds 30 and thicknesses of goods is obtained, and other advantages are secured. It should here be observed, however, that, while the apparatus is adapted to simultaneously steam opposite surfaces of the cloth, it is not designed directly to steam or to expose the outer surface of the cloth, as doing this is apt to spot the cloth and otherwise injure it. I therefore pass the cloth through the apparatus doubled in the direction 40 of its width as it comes from the manufacturer, with its inner surface outermost in both thicknesses, thus never exposing the fair or outer side of the cloth to the air, nor yet to the direct action of the steam in sponging it.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a plan view of the apparatus embodying my invention; Fig. 2, a vertical longitudinal section of the same upon the line $x x$ in Fig. 1; Fig. 3, a longitudinal

section, upon the line $y y$ in Fig. 2, of one of the perforated steaming-beams of the apparatus; and Fig. 4, a broken detail longitudinal 55 view of a board in part, upon which the cloth is wrapped, with one of the devices in partial section for holding and rotating said board.

A indicates the frame of the apparatus, which frame may be of any suitable construction, and 60 is provided with a foot-board, B, for laying the doubled and folded cloth C upon to be steam-sponged and finished, as shown at the right hand of Fig. 2.

D D' are the hollow steaming-beams of the 65 apparatus, arranged transversely of the main frame, and one in advance of the other. These beams are of partly-cylindrical shape on their acting surfaces, which are provided with steaming-perforations b , and which face in reverse 70 directions at suitable angles relatively to each other, so that as the doubled cloth from the folded pile on the foot-board B is passed first over the perforated surface of the lower beam, D, and subsequently over the perforated surface of the upper beam, D', it will hug said perforated surfaces on its back surface or opposite back surfaces, thus never exposing the fair or front side of the cloth either to the atmosphere or directly to the steam issuing 80 through the perforations b , whereby spotting and injury of the cloth will be avoided. These steaming-beams D D' are of peculiar construction, to provide for different hygrometric conditions of the steam passing through the perforations b to act upon the cloth accordingly as the quality or thicknesses of the goods require to be treated with dry steam, moderately wet steam, or very wet steam. Thus each of said beams D D' has a series of longitudinal partitions, c , 90 in it, arranged one above the other and forming a succession of upper and lower compartments, here shown as three, $d d' d''$, but which are not restricted to number, so long as there are two, or more than two, to which steam is admitted, and from which it is discharged at different levels, whereby either no water of condensation is allowed to collect in certain of said compartments or a variable quantity in the other compartments, accordingly as it is required to apply hot dry steam to the cloth, or wet steam charged with different degrees 95 of moisture. 100

Steam is admitted from a steam-boiler or

other source through a main pipe, *e*, and is let on to any one of the compartments *d d' d''*, as required, by branches *f f' f''*, controlled by cocks *g*, and connecting respectively at different levels with the compartments *d d' d''* at their one end. A similar disposition of outlet or exhaust pipe *h* and branches *i i' i''*, controlled by cocks *k*, is made at the opposite ends of said compartments. The branches *f''* and *i''* connect with the upper compartment, *d''*, at its lowest point or level in each beam *D D'*, so that no water of condensation can collect in said compartment when the valves controlling said branches are properly regulated. This will serve to work very hot or dry steam in the apparatus—that is, to expose the cloth passing over the perforated beams *D D'* to dry steam only.

When the steam coming from the generator is a moderately moist one, or when it is required to make it have a damper action upon the cloth, then steam is admitted and circulated through the compartment *d'* in each beam *D D'* by the branches *f' i'*, which connect with the compartment *d'* at a level slightly above the lowest point or line of its interior, thus allowing a certain amount of water of condensation to collect in the compartment *d'*, and so contribute to the dampening of the cloth.

If a still wetter steam is used, or a further dampening of the cloth is required, then steam is let on to and circulated through each lower compartment, *d*, in each beam *D D'* by or through the branches *f i*, which connect with the compartment *d* at a still higher level relatively to the lowest point or line of its interior, which allows of a still larger amount of water of condensation to collect in said compartment. By this construction, and by suitably controlling the inlets and outlets to and from the several compartments *d d' d''*, the apparatus may be readily adapted to steam or work most or all kinds and thicknesses of cloths subject to different hygrometric conditions of the steam.

Vents *m*, fitted with plugs *n*, may be made in the compartments of the steaming-beams *D D'* to run off the water of condensation from them when required.

After the cloth has been steamed it passes from the beam *D'* in between heavy pressure-rolls *G G*, which finishes it and smooths down or restores the nap to its original condition on the face of the cloth.

The cloth is drawn through the apparatus

and taken up as finished by wrapping it upon a flat board, *H*, made to rotate and arranged to occupy a position at the back end of the main frame *A*. This board is the same one or similar to that upon which the cloth was put up by the manufacturer. It is held and adjusted to its place for rotation by slipping it at its ends within clamps or holders *I I'*, fitted to rotate in bearings in the main frame and provided each with a spur, *o*, to hold onto the board. One of these clamps, *I*, acts as a driver and may be turned by a crank or handle, *r*, while the other clamp, *I'*, is free to rotate in its bearings, and is longitudinally adjustable by its shaft *s* to vary the distance apart of the two clamps to suit different lengths of the board *H*, which vary with the width of the cloth. When said adjustable clamp *I'* is slid or set up as required, it is held in position by a spring-actuated or other stop, *u*, arranged to engage with any one, as required, of a series of annular grooves forming collars *v* in the shaft *s*.

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

1. In apparatus for steaming cloth and other fabrics, the perforated steaming-beams *D D'*, constructed with a series of longitudinal compartments arranged one above the other and provided with steam inlets and outlets at their opposite ends at different heights or levels relatively to the bottoms of their respective compartments, substantially as and for the purpose herein set forth.

2. The combination of the partly-circular perforated steaming-beams *D D'*, arranged one above the other to face in reverse directions, and provided with longitudinal compartments *d d' d''*, disposed one above another, the steam-inlet and exhaust pipes *e h*, having branches *f f' f''* and *i i' i''*, arranged to connect with said compartments at different heights from the bottoms thereof, respectively, and the valves *g k*, controlling said branches, essentially as shown and described.

3. In a machine of the character described, a series of steam-chambers having their respective outlets for water of condensation arranged on different levels from their bottoms, substantially as specified.

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Witnesses:

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