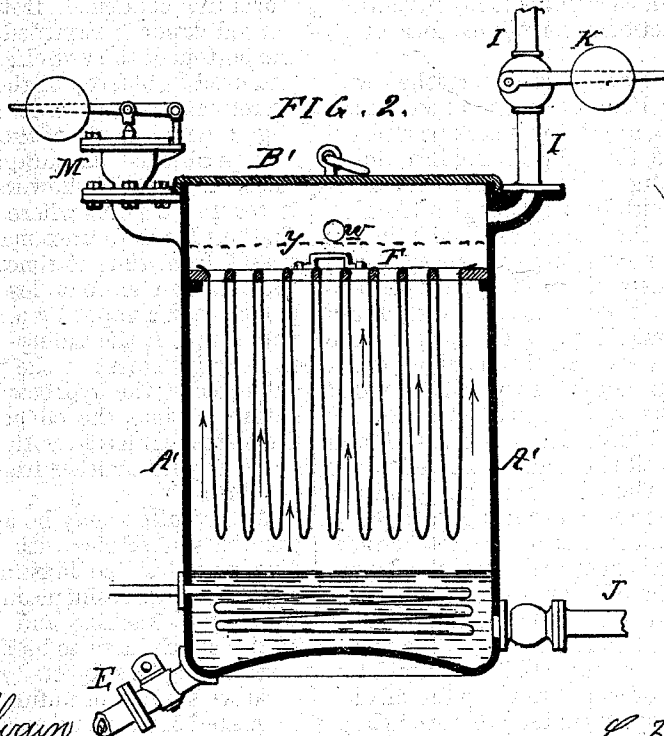
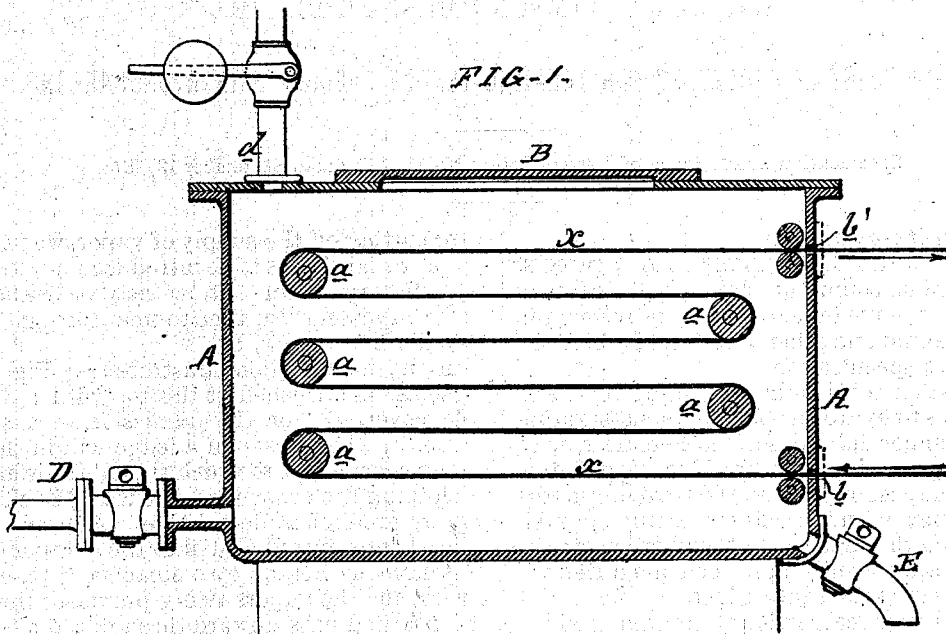


CHARLES F. A. SIMONIN.

Improvement in Treating Textile Fabrics, &c.

No. 119,187.

Patented Sep. 19, 1871.



Witnesses,

Thos. McIlwain
 John Parker

C. F. A. Simonin
 By his Atty
 Henson & Lory

UNITED STATES PATENT OFFICE.

CHARLES F. A. SIMONIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
WILLIAM ADAMSON, OF SAME PLACE.

IMPROVEMENT IN PROCESSES FOR TREATING TEXTILE FABRICS WITH HYDROCARBONS.

Specification forming part of Letters Patent No. 119,187, dated September 19, 1871.

To all whom it may concern:

Be it known that I, CHARLES F. A. SIMONIN, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Treating Textile and other Fabrics, of which the following is a specification:

My invention consists in subjecting textile or felted fabrics to hydrocarbon vapors, substantially in the manner fully described hereafter, with the view of preparing them for bleaching or dyeing; or, in the case of carpets, of destroying moths and cleansing; or, in the case of wearing-apparel, of renovating the articles. It further consists of certain apparatus, fully described hereafter, for carrying my invention into effect.

Figure 1 is a vertical section of apparatus which may be employed in carrying out my invention; Fig. 2, a vertical section of a modified form of apparatus.

In Fig. 1, A is a closed vessel furnished with a detachable cover, B, and this vessel contains a series of rollers, *a a*, around which is passed the fabric *x* to be treated, this fabric being introduced into the vessel through a narrow slot, *b*, near the bottom, and being withdrawn through a like slot, *b'*, near the top of the vessel, as shown in the drawing. Hydrocarbon vapor, by preference such as is derived from heated gasoline, benzine, benzole, naphtha, or their equivalents, is introduced into the vessel through a pipe, D, and after the fabric *x* within the vessel has been subjected for a proper length of time to this vapor it is pulled outward through the upper slot *b'* until there is another supply of fabric within the vessel, and this is continued until the whole piece of fabric has been treated. The vapor may be permitted to escape, from time to time, through a pipe, *d*, furnished with a suitable cock, prior to admitting a fresh supply of vapor to the vessel by opening the cock of the pipe D; or, if desired, the supply of vapor to the vessel may be continuous, and it may be discharged continuously to the worm of a condenser, to be reconverted into liquid hydrocarbons. If it is desired to treat the fabrics with hydrocarbon vapors under pressure, which is to be preferred, the slots *b* and *b'* in the vessel may be temporarily closed tightly by detachable packing-plates, as shown by dotted lines, the pipe *d* being furnished, in this case, with a loaded valve, by which a determinate pressure may be secured. The packing-plates may be temporarily removed

after cutting off the supply of vapor, when a new supply of fabric has to be introduced into the vessel. The refuse or extract may be withdrawn from the vessel, from time to time, through a suitable discharge-cock, E.

In the modification illustrated in Fig. 2 the vessel A' is furnished at the top with a detachable cover, B', for the admission of a slatted frame, F, which rests on a ledge within the vessel, as shown, and to which the fabric or articles of clothing are suspended, the frame or slats being, by preference, detachable. A supply of hydrocarbon is introduced into the bottom of the vessel and is heated by a steam-coil, H, or otherwise, and the vapors rising permeate the folds of fabric and pass upward through a pipe, I, to a worm in a condenser, from which worm the condensed vapor is returned, through a pipe, J, to the bottom of the vessel A, to be again vaporized and used as before; or the condensed vapor may be returned to the vessel through an opening, *w*, Fig. 2, near the top of the vessel, and, falling onto a perforated diaphragm, *y*, shown by dotted lines, may fall in showers onto the fabric until it reaches a point where it is again vaporized. The residue or extract may be removed from the vessel, from time to time, through a discharge-cock, E, and more or less pressure may be imparted to the vapor by a loaded valve, K, in the vapor-pipe I, the safety-valve M being loaded slightly in excess of the valve K. After being subjected to the hydrocarbon vapor for a proper length of time, the cover B' is withdrawn and the slatted frame F, with its fabric, removed to make way for another frame and another supply of fabric.

My invention may be applied to many different kinds of fabrics with great advantage. Ordinary unbleached muslin, for instance, may be deprived of its resinous and gummy matters preparatory to washing and bleaching—in fact, all fabrics which have to be bleached may, with the best results, be subjected to my process as a preparatory step; and unfurled woolen fabrics may be treated in the same manner with good results. Carpets, too, can be advantageously treated with my process, for the vapor will effectually destroy moths and other vermin which infest these fabrics. The carpets, after the treatment and evaporation of the hydrocarbon, may be shaken or beaten, or may be washed in an alkaline solution,

as circumstances may suggest. Woolen, cotton, or other fabrics may be treated according to my invention and washed, preparatory to dyeing, with the best results, as all traces of greasy or oily matter are more effectually removed than by the usual alkaline washings. Articles of clothing may also be effectually renovated by the treatment and subsequent washings.

Without confining myself to the specific form of apparatus described, I claim—

1. The process, substantially as described, of subjecting textile fabrics to hydrocarbon vapors, for the purpose specified.

2. The combination of a vessel to which hydrocarbon vapors are admitted, or in which they are

generated, with a system of rollers or their equivalents, by which fabrics can be caused to traverse through the vessel, substantially as described.

3. The combination of a vessel to which hydrocarbon vapors are admitted, or in which they are generated, with slats or their equivalents for holding the fabrics, as herein set forth.

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

CHS. F. A. SIMONIN.

Witnesses:

JNO. B. HARDING,
W. J. R. DELANY.

(81.)