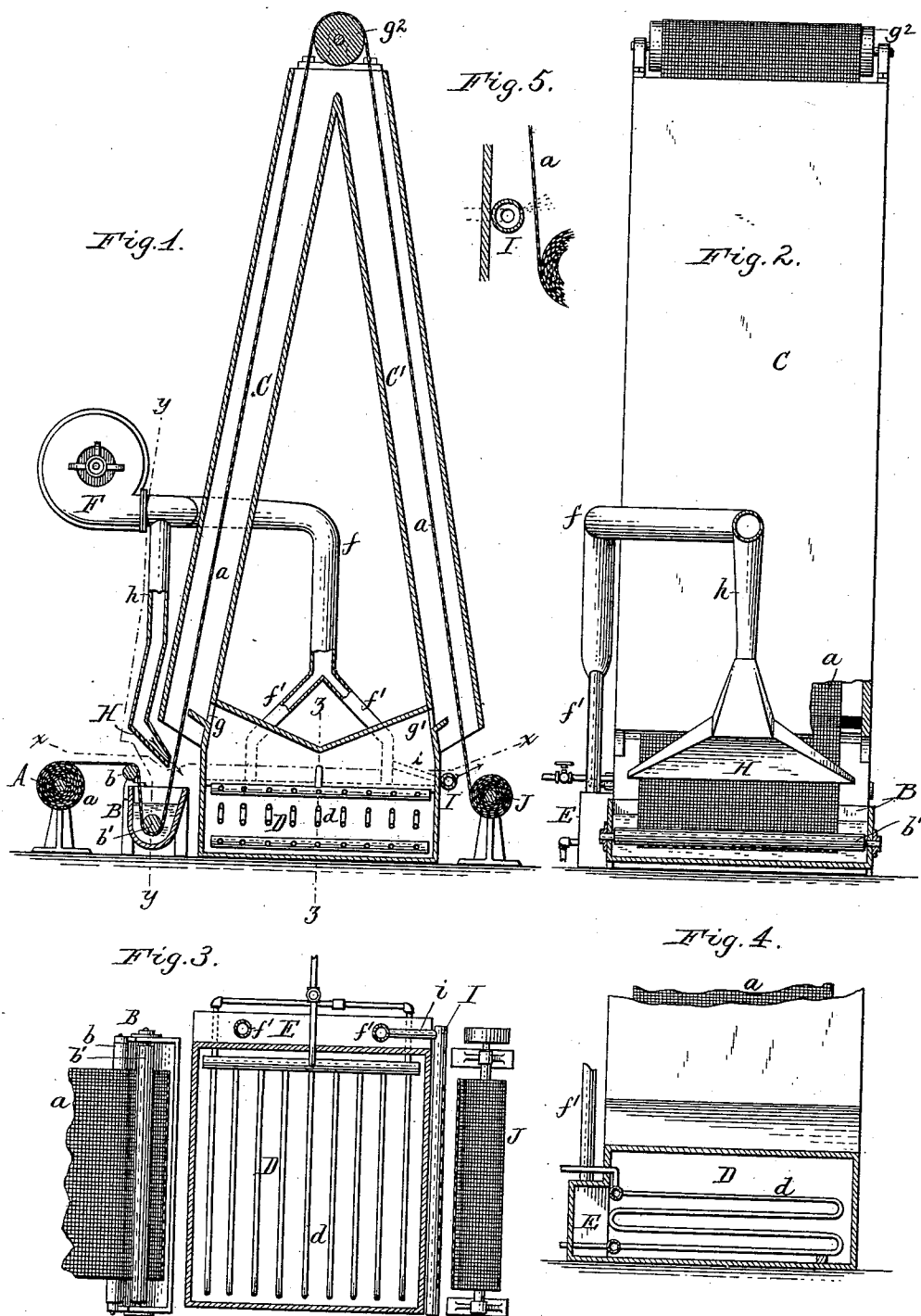


(No Model.)

P. L. SALMON.
APPARATUS FOR DRYING WIRE CLOTH.

No. 448,888.

Patented Mar. 24, 1891.



Chas. J. Buchheit.
Theodore L. Popp } Witnesses.

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UNITED STATES PATENT OFFICE.

POMEROY L. SALMON, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE
STEAM GAUGE AND LANTERN COMPANY.

APPARATUS FOR DRYING WIRE-CLOTH.

SPECIFICATION forming part of Letters Patent No. 448,888, dated March 24, 1891.

Application filed August 20, 1886. Serial No. 211,381. (No model.)

To all whom it may concern:

Be it known that I, POMEROY L. SALMON, of the city of Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Apparatus for Drying Wire-Cloth, of which the following is a specification.

This invention relates to an apparatus for drying painted wire-cloth, and has for its object to cool and harden the paint after it has been dried by the application of heat and to expedite and facilitate the drying operation.

My invention consists to these ends of the improvements which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of my improved drying apparatus. Fig. 2 is an end elevation of the same, partly in a section, taken in line *y y*, Fig. 1. Fig. 3 is a horizontal section in line *x x*, Fig. 1. Fig. 4 is a cross-section of the lower part of the apparatus in line *z z*, Fig. 1. Fig. 5 is a cross-section, on an enlarged scale, of the air-pipe by which cold air is directed upon the dried cloth.

Like letters of reference refer to like parts in the several figures.

A represents the horizontal beam or shaft upon which the web *a* of wire-cloth to be painted is wound and from which the web passes over a roller *b* into the paint trough or receptacle B, which latter is provided near its bottom with a roller *b'*, under which the web is passed and from which the web passes upwardly and out of the paint-receptacle.

C represents the primary drying-chamber, into which the web passes from the paint-receptacle and through which the web passes in an upward direction.

C' represents the secondary drying-chamber, into which the web passes after it leaves the primary chamber C and through which the web passes in a downward direction. The two chambers C C' are arranged in an inclined position, diverging downwardly, and have their upper ends joined together or arranged near each other, as represented in Fig. 1. Each chamber is open at both ends to afford a free passage for the wire-cloth and air through the same.

D represents an air-heating chamber ar-

ranged between the lower diverging ends of the chambers C C' and provided with steam-coils *d* or any other suitable heating appliance, whereby the air is heated in said chamber.

E represents an air-supply chamber arranged on one side of the heating-chamber and connecting with the latter near its bottom, so as to supply cold air thereto underneath the steam-coils *d*. The chamber E is supplied with air by a fan F, whose discharge-pipe *f* is connected with the chamber E by branch pipes *f'*. The heated air passes from the chamber D into the lower portions of the chambers C C' through openings *g g'*, formed, respectively, in the inner walls of the chambers C C'. In passing from the chamber C to the chamber C' the cloth passes over a roller *g*². If preferred, the upper ends of the chambers C C' may be connected so as to inclose the pulley *g*², and form a communication between both chambers, in which case the air-inlet *g'* at the lower end of the chamber C' is dispensed with. In this construction the hot air enters at the lower end of the chamber C, flows upwardly through the chamber C and downwardly through the chamber C', and escapes at the lower end of the latter.

H represents a blast-nozzle arranged opposite the ascending web *a*, immediately above the paint-receptacle and extending across the web, as represented in Figs. 1 and 2, so as to deliver a thin sheet or current of air against the web, whereby the wire-cloth is relieved from any excessive quantity of paint which may adhere thereto, and whereby the meshes of the wire-cloth are opened. The nozzle H is supplied with air from the fan F by a branch pipe *h*.

I represents a horizontal air-delivering pipe, arranged opposite the web *a* below the secondary chamber C', so as to deliver a current of cold air against the wire-cloth after the latter has left the drying-chamber in which it has been subjected to the action of heat. The pipe I is provided with a longitudinal slot or a row of perforations, through which the air issues against the wire-cloth. The pipe I is supplied with cold air by a pipe *i*, which connects with one of the branch pipes *f'*, or in any other suitable manner.

J represents the horizontal beam or shaft,

upon which the wire-cloth is wound after it has been dried and hardened.

The web of wire-cloth passes from the shaft A to and through the paint-receptacle B, in which it becomes covered with paint. It is next subjected to the action of the air-current issuing from the nozzle II, whereby its meshes are opened and the surplus of paint is blown off. The painted cloth next passes upwardly through the chamber C and downwardly through the chamber C'. In its passage through these chambers it is subjected to the action of the heated air passing upwardly through these chambers, whereby the paint is dried and oxidized. Upon leaving the drying-chamber C' the paint is still comparatively soft and the wire-cloth itself has become heated by the action of the hot air, which tends to retard the hardening of the paint. It is desirable to have the paint hardened and set before the wire-cloth is wound upon the beam J, in order to prevent the paint from being removed from the wire by the abrading action of the wires against each other. This hardening of the paint and cooling of the wire-cloth is effected by the blast of cold air, which is delivered against the wire-cloth from the nozzle I. The finished wire-cloth is finally wound upon the shaft or beam J.

I do not wish to limit myself to the particular construction of the drying-chambers and blast devices, as they can be changed without departing from the spirit of my invention.

I claim as my invention—

1. In an apparatus for drying painted wire-cloth, the combination, with the primary and secondary drying-chambers both opening into the external atmosphere, of an air-heating chamber arranged between the lower portions of the drying-chambers and communicating therewith, a fan whereby air is delivered into the heating-chamber and caused to pass into

the lower portion of the drying-chambers and upwardly through the same, and rollers whereby the wire-cloth is guided upwardly through the primary drying-chamber and downwardly through the secondary drying-chamber, substantially as set forth.

2. In an apparatus for drying painted wire-cloth, the combination, with the primary and secondary drying-chambers both opening into the external atmosphere, of an air-heating chamber, a fan whereby air is delivered into said heating-chamber and caused to pass through the drying-chambers, rollers whereby the wire-cloth is guided upwardly through the primary drying-chamber and downwardly through the secondary drying-chamber, and a blast-nozzle arranged below the secondary drying-chamber, whereby a current of cold air is delivered against the cloth issuing from said drying-chamber, substantially as set forth.

3. In an apparatus for painting and drying wire-cloth, the combination, with the primary and secondary drying-chambers, of a paint-trough arranged below the primary drying-chamber, a blast-nozzle arranged between the paint-trough and the primary drying-chamber whereby a blast is directed through the freshly-painted cloth for removing the surplus paint, an air-heater whereby heated air is caused to flow through the drying-chambers, rollers which guide the cloth through the paint-trough and the drying-chambers, and a blast-nozzle arranged below the exit of the secondary drying-chamber, whereby a cold blast is delivered upon the cloth for cooling the same, substantially as set forth.

Witness my hand this 10th day of August, 1886.

POMEROY L. SALMON.

Witnesses:

EDWARD WILHELM,
CARL F. GEYER.