

(No Model.)

C. LAVAL.  
CLOTH STRETCHING MACHINE.

No. 469,256.

Patented Feb. 23, 1892.

FIG-1-

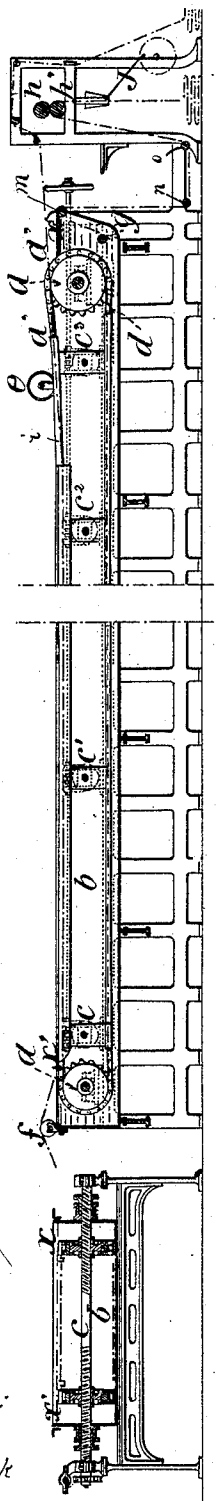
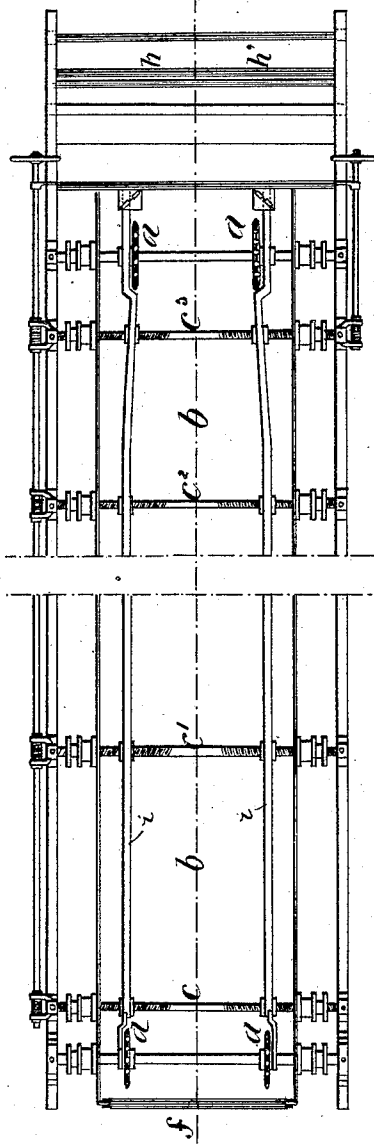


FIG-3

Witnesses:  
E. R. Bolton  
Geo. F. Herrick

FIG-2-



Inventor:  
Charles Laval  
By *Richardson*  
his Attorneys.

# UNITED STATES PATENT OFFICE.

CHARLES LAVAL, OF RHEIMS, FRANCE.

## CLOTH-STRETCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 469,256, dated February 23, 1892.

Application filed November 26, 1889. Serial No. 331,683. (No model.) Patented in France July 1, 1889, No. 199,254.

*To all whom it may concern:*

Be it known that I, CHARLES LAVAL, a citizen of the Republic of France, residing at Rheims, France, have invented certain new and useful Improvements in Cloth-Stretching Machines, (patented in France July 1, 1889, No. 199,254,) of which the following is a specification.

This invention relates to an improved machine for stretching fabrics in which the widening or stretching of such fabrics is fixed or rendered permanent; and the said improved machine consists of any ordinary stretching apparatus combined with and placed in a bath of hot water, so that the fabric is subjected to the action of the hot water while held stretched by such stretching apparatus, whereby a much greater widening is effected and maintained than can be done by any ordinary stretching-machine without the bath of hot water or by the use of a hydro-fixer without a stretching-machine.

In the drawings hereto annexed, Figure 1 is a sectional elevation, Fig. 2 a general plan, and Fig. 3 a vertical transverse section, of one example of a stretching-machine constructed in accordance with my invention.

A stretching-machine having chains passing over chain-wheels *a a*, operated by the usual means, is mounted inside a tank *b*, containing hot water to a height *x x'* sufficient to submerge the said stretching-machine except at the part *a' a'*, where the fabric to be treated is hooked onto the chains. This fabric passes from the folded heap or pile over and under various rollers and bars, as usual, before reaching the pins on the stretching-chains, onto which it is pressed by the aid of circular brushes *e*, for example. The water in the tank is heated by tubes, worms, or otherwise.

The chains are held at the requisite distances apart by means of chain-guides *i*, which

are caused to diverge by screws *c c' c<sup>2</sup> c<sup>3</sup>*, operated in the usual way and placed either in one plane or in several rows, as may be preferred.

The fabric after having passed the entire length of the apparatus to the point *x'* is either drawn off at *f* after a single passage from *a'* to *x'* through the machine or at *d* after a second passage through the machine. By suitable arrangements the fabric may be caused to pass backward and forward in the machine any required number of times. In the first case, the fabric disengaged from the stretching-machine at *x'* by the roller *f* is removed from the machine by drawing-off rollers and any suitable folding apparatus. In the second case, the fabric is disengaged from the stretching-machine by the roller *g*, from which it passes over and under other rollers *m n o* to the drawing-off rollers *h h'*; driven in the usual way, from which it is delivered to the folder *j*, as shown in dotted lines.

I claim—

1. The combination of a water-tank *b* with a stretching-machine located therein, consisting of chain-wheels *a a*, the chains and chain-guides, and screws *c c' c<sup>2</sup> c<sup>3</sup>* for holding the guides the proper distance apart, substantially as set forth.

2. The combination, with a hot-water tank, of a stretching-machine located therein, consisting of chain-wheels *a a*, the chains and chain-guides, screws *c c' c<sup>2</sup> c<sup>3</sup>* for holding the guides the proper distance apart, roller *g* for disengaging the fabric from the chains, rollers *m n o*, drawing-off rollers *h h'*, and folder *j*, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHARLES LAVAL.

Witnesses:

R. J. PRESTON,  
ALPHONSE BLÉTRY.