H. N. DODGE.

Leather-Stretching Machine.

No. 207,508. Patented Aug. 27, 1878.

Fig. 1.

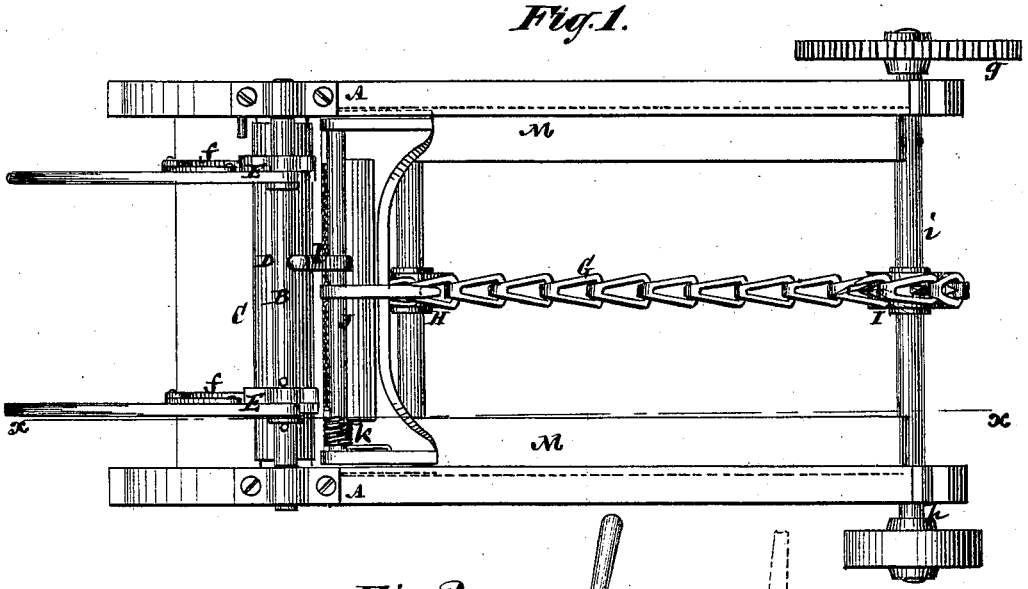


Fig. 2.

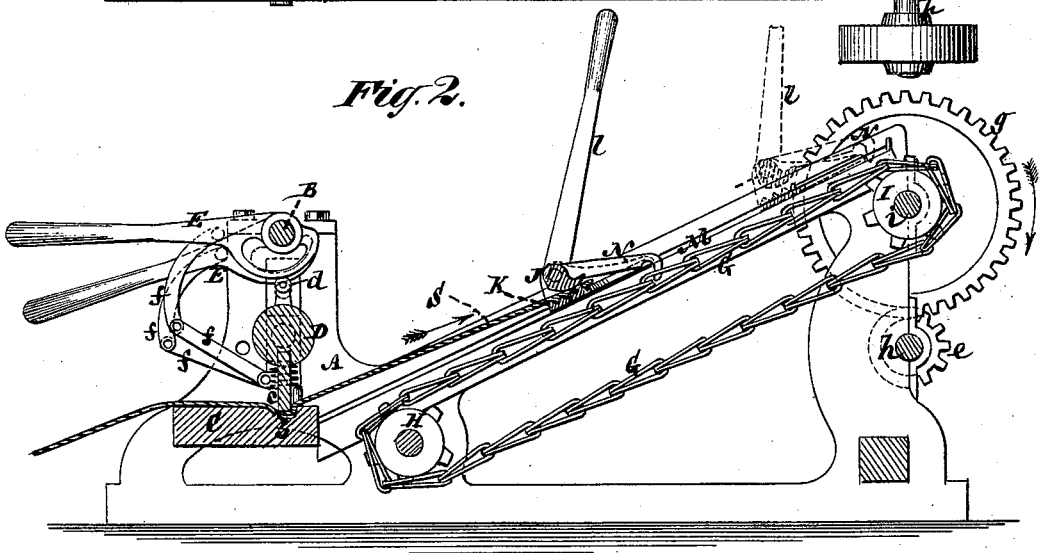
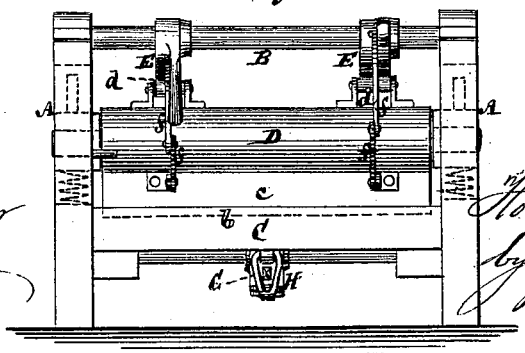


Fig. 3.



Witnesses

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HORACE N. DODGE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LEATHER-STRETCHING MACHINES.

Specification forming part of Letters Patent No. **207,508**, dated August 27, 1878; application filed May 22, 1878.

To all whom it may concern:

Be it known that I, HORACE N. DODGE, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Means of Applying Tension in Leather Stretching and Splitting Machines, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

This invention more especially relates to machines for stretching leather for belts and other purposes; and consists in novel means for applying the necessary tension to the leather during the operation of working it, whereby a uniform and continuous tension is or may be obtained throughout the whole length of the piece of leather by a single operation, a better opportunity is afforded to the operator of observing the run of the leather through the machine, and, in the case of a leather-stretching machine, of correcting any tendency of the material to crook, also whereby the leather is crowded out of the heavier end of the piece into the thinner end thereof, substantially as hereinaafter described.

Figure 1 represents a plan of a leather-stretching machine having my invention applied; Fig. 2 is a longitudinal vertical section of the same on the line *x x*, and Fig. 3 an end view thereof.

A A are the side frames of the machine, connected at their upper ends by a bar, B. C is the beam over which the leather is drawn when being stretched, and which is secured at its ends to the side frames A A. Said beam has a groove, *b*, in its upper face, into which the leather, while being drawn through the machine, is pressed by a presser-blade or creaser, *c*, attached to a bar, D, made capable of adjustment up or down, and having arranged above it a pressure mechanism for forcing the blade *c* into the groove *b*.

Such combination of devices is similar to that employed in other leather-stretching machines, and the pressure mechanism which acts upon the presser-bar D may also be the same, and consist of duplicate or opposite side cam-levers E, fitted loosely on the bar B and arranged to bear down upon rollers *d d* on the upper side of the presser-bar D, said levers being either jointly or independently operated, accordingly as it is required to depress the presser-bar, with its attached blade or creaser, uniformly throughout its length or at one of its ends more than the other, to provide for stretching a strip of leather which is thicker at one of its sides or edges than at the other. Provision is also made by means of rods *f f* for turning the presser-bar D out of the way when required. About such devices, of themselves, nothing here is claimed as new.

The means employed to draw the leather through the machine and to produce the necessary tension on it at or by one operation, and whereby I am enabled to avoid any necessity for beginning the stretching operation at or near the middle of the piece of leather, and stretching toward each end, respectively, by two distinct operations, as is done in other machines for similar purpose, consist substantially of one or more conveyers or carriers, having a longitudinal travel away from the presser-bar or its blade, and a sliding clamp, constructed to engage and disengage with said carrier or carriers, and biting or holding on the leather to draw it through the machine away from the presser-bar. Thus arranged at the back of the grooved beam C, and extending in a rearward direction relatively thereto, is an endless-chain carrier, G, supported by and gearing at its ends with toothed wheels or pulleys H I, the latter one of which is here represented as the driver of the chain, by or through gearing *e g* on the shafts *h i*, respectively, any suitable power being employed to operate said chain, the upper course of the travel of which is in a direction away from the presser-bar or its blade and grooved beam. J K is a sliding clamp or jaw frame, arranged to travel on and along ways M M, on opposite sides of the chain G. Said clamp may be variously constructed to give it the necessary opening and closing action, but is here represented as having a pivoted and turning upper jaw, J, of cam-like construction, and a plain or serrated lower jaw, K, forming a fixed portion of the frame of the clamp. A spring, *k*, applied to the upper jaw J, exerts an opening tendency on the clamp, and a hand-lever, *l*, operates to close it, and to cause a hook or anchor, N, on the movable jaw J to engage with the chain G.

It is preferred, for a reason that will be hereinafter specified, to arrange the ways M M on an inclination to the horizon, ascending in a rearward direction from the grooved beam C, the chain or carrier G having a similar inclination.

To stretch a piece of leather, S—such, for instance, as is used to make a belt—the butt or heavy end of the leather is first introduced between the grooved beam C and the blade *c*, and entered within the clamp J K when the latter is close up to said beam. The presser-bar, with its attached blade *c*, is then brought down to flex the leather in the groove *b*, and the lever *l* operated to close the clamp and make its anchor N engage with the traveling endless chain or carrier G, which, by means of the clamp, draws the leather through the machine, subject to tension dependent on the hold of it by the presser-bar. This crowds the leather out of the butt and into the shoulder or thinner end of it, thereby avoiding bagging consequent on crowding leather into the butt from the shoulder. By pulling the leather through the machine, as described, the operator is enabled to observe, by glancing along the strip of leather, whether it is moving straight, and if not traveling straight he is able to avoid crooks being formed in it by applying increased pressure, as required, to either of the levers E. Furthermore, the whole length of the piece of leather is or may be subjected to tension at one operation, and so soon as it has been thus stretched the clamp J K is opened by the disengagement of the anchor N with the chain or carrier G, as shown by dotted lines in Fig. 2. This may be done either by operating the lever *l* of the clamp, or by the anchor N releasing itself as it is brought over the pulley I by the chain G.

The clamp, having thus released its hold on the leather, is free to slide or be worked back to its normal position to provide for a succeeding stretching operation. It may be drawn back by a weight attached to a rope or chain passing over a pulley, or it may slide back of its own weight, with or without the assistance of an additional weight, when the ways M and carrier G are set inclined, as shown in the drawing, and which facilitates or expedites the operation.

By this invention I am enabled to stretch leather very perfectly and with much greater rapidity than heretofore.

By substituting a cutting-knife, table, and pressure-roller, as ordinarily used in splitting leather, for the presser-bar, with its attached blade and grooved beam, the same means of applying the necessary tension to and drawing or pulling on the leather as have been described for stretching the latter may be used for splitting it.

I claim—

1. The combination, with the presser-bar or its attached blade, of one more conveyers or carriers, arranged to have a longitudinal motion away from said bar or its blade in rear of the latter when drawing the leather through the machine, and a traveling clamp, constructed to engage with and to be disengaged from said carrier, substantially as and for the purpose or purposes herein set forth.

2. The combination, with an endless traveling chain or flexible carrier, of a sliding or traveling clamp, J K, provided with an engaging and disengaging hook or anchor, N, and the ways M M, on which said clamp is fitted to travel, essentially as and for the purpose or purposes described.

3. The ways M M, arranged to incline upwardly in a rear direction relatively to the devices against, through, or over which the leather is drawn, in combination with the similarly-inclined conveyer or carrier and the traveling clamp J K, constructed to admit of its ready engagement with or disengagement from the carrier, substantially as specified.

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