(No Model.)

L. F. CAUFFIELD.

LEATHER FRAME.

No. 484,137. Patented Oct. 11, 1892.

Fig. 1.

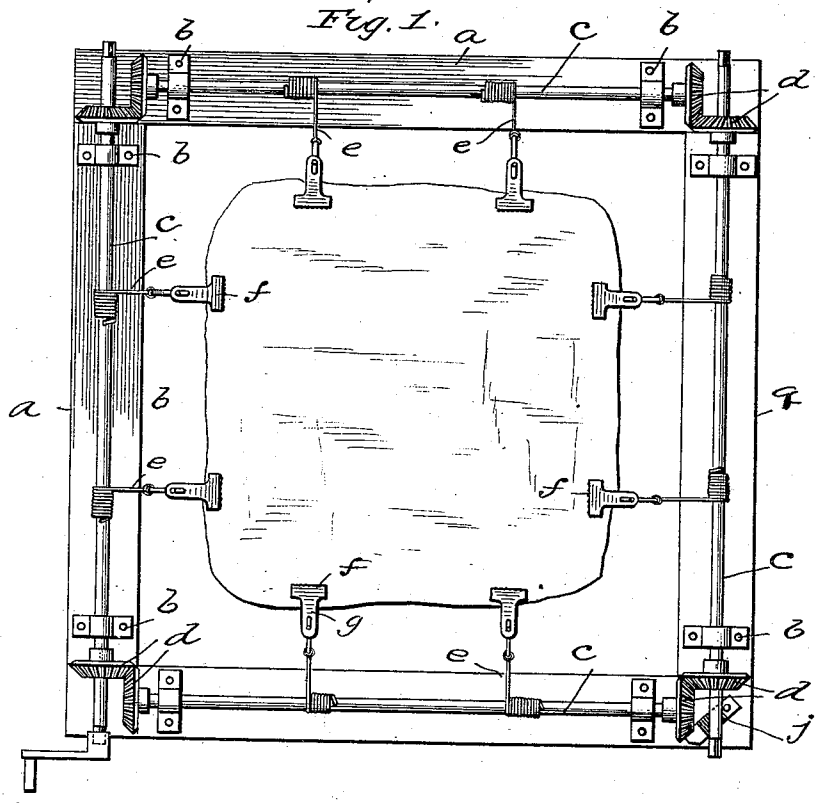


Fig. 2.

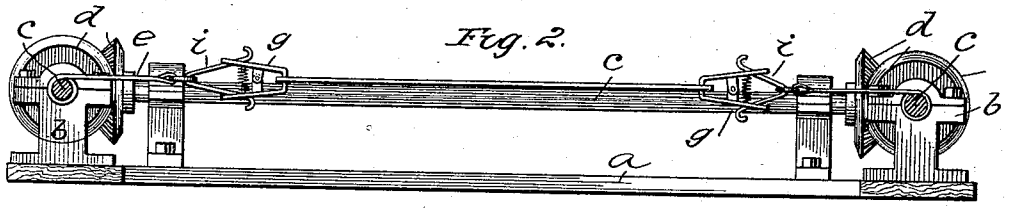


Fig. 3.

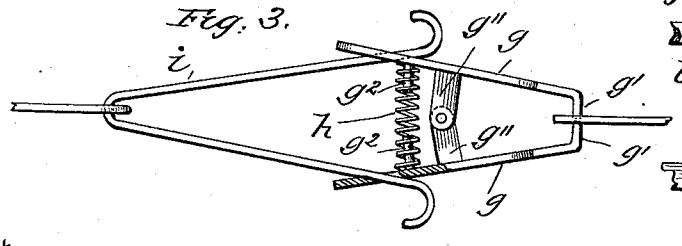
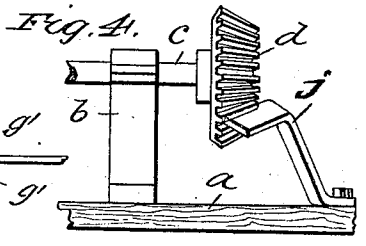


Fig. 4.



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LEATHER-FRAME.

SPECIFICATION forming part of Letters Patent No. 484,137, dated October 11, 1892.

Application filed June 18, 1892. Serial No. 437,172. (No model.)

To all whom it may concern:

Be it known that I, LUKE F. CAUFFIELD, a citizen of the United States, residing at Ashtabula, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Leather-Frames, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in devices for stretching leather; and it has for its object to produce a leather-stretching frame of simple construction, whereby the leather being treated may be stretched in all directions simultaneously.

The invention consists in the novel combination and arrangement of parts hereinafter described, and particularly pointed out in the claims appended.

In the drawings, Figure 1 is a plan view of my improved leather-frame. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a detail view of one of my clamping devices, and Fig. 4 is a detail hereinafter described.

Referring to the drawings, *a* designates a rectangular frame, upon the upper side of which are mounted bearings *b b* for the four horizontal shafts *c*. These shafts form a rectangle, and at their ends they are provided with beveled gears *d*, which mesh with similarly-beveled gears secured on the adjacent ends of the shafts which form the rectangle. Thus when one of these shafts is revolved its motion is transmitted simultaneously to all of the shafts by means of the beveled gears, as is evident. The ends of one of the shafts may be extended beyond its beveled gears and be provided with squared ends to receive a crank or other device for revolving said shaft, or any other other means may be provided for revolving the shafts. To these shafts are secured at one of their ends cords or chains *e*, and the other or free ends of these cords *e* are secured to automatic clasps or grippers *f*. These clasps grip the edges of the leather when it is being stretched, and they consist of two diverging plates *g g*, which are formed at their inner forward ends with inwardly-bent serrated gripping-jaws *g' g'*, and are provided on their inner faces with inwardly-projecting lugs *g'' g''*, by means of which they are pivoted together. The gripping-jaws *g' g'* are kept normally together by means of a coiled spring *h*, which fits over inwardly-projecting lugs $g^2 g^2$, which are formed on the inner sides of plates *g g* in the rear of the lugs *g'' g''*, the tension of the spring tending to force the rear ends of the plates outwardly. The gripping-jaws are enlarged laterally, as shown, for an obvious reason.

Through perforations in the rear ends of the plates *g g* of the clasps extend the forward diverging ends of the arms of yokes *i i*, and to the rear end of these yokes are secured the ends of the cords or chains *e*, whose other ends are secured to the shaft *c*. The forward ends of the diverging arms of the yokes *i* are turned up or enlarged in any suitable manner to prevent their entire withdrawal through the perforations in the plates *g g*.

At one corner of the frame *a* and in a position to engage the teeth of one of the beveled gears is pivoted a lock *j*. This lock is adapted to engage the teeth of one of the beveled gears and prevent it turning, thereby locking all the shafts forming the rectangle, as is evident.

The operation of my device is as follows: The leather to be operated upon is placed within the rectangle formed by the shafts and its edges gripped by the clasps, the coiled springs *h* having sufficient tension to cause the gripping-jaws of the clasps to hold the leather under a moderate strain. The shafts are now revolved by the crank (shown in Fig. 1) or by any suitable means, and the chains *e* are wound upon them, drawing all the clasps outwardly simultaneously and stretching the leather. As the strain is on the rear ends of the yokes *i*, the operation will be to draw the forward diverging ends of the yokes rearwardly through the perforations in the plates *g g*, thereby forcing the rear ends of said plates outwardly and causing the gripping-jaws to firmly bind against the leather, and the greater the tension the more firmly will the gripping-jaws be caused to bind against the leather.

When the desired tension of the leather has been reached, the lock *j* is caused to engage the teeth of one of the beveled gears and prevent its turning, thereby locking all the shafts and holding the leather at the desired tension.

Any other suitable locking device may be

employed. Any form of frame and a different number of shafts may be used, and other methods of causing the shafts to revolve simultaneously may be used without departing from the spirit of the invention.

The advantage in securing the clasps on the ends of cords or chains is that they are free to be moved independently in all directions, and are therefore capable of being attached to the parts of the irregular edges of the leather or hides that are most advantageous in properly stretching the same.

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

1. In a leather-stretching frame, the combination of a frame, a series of shafts journaled in bearings on the sides of said frame, means for locking said shafts against rotation, a series of cords having their ends secured to the shafts, and clasps secured to the free ends of the cords, whereby when the edges of the leather to be stretched are engaged by the clasps and the shafts revolved said leather will be drawn taut and suspended within the frame, substantially as described.

2. The combination of a frame, shafts thereon, and means for rotating them, cords connected to the shafts, a series of clasps for grasping the edges of the leather, and means, substantially as described, for connecting the clasps to the cords, whereby the tighter the cords are drawn the stronger will the clasps grip the leather, substantially as described.

3. A leather-stretching frame consisting of a supporting-frame, shafts mounted in bearings supported on said frame, means for simultaneously revolving said shafts, clasps or grippers connected to said shafts, said clasps consisting of the plates *g g*, provided with gripping-jaws and pivoted together, a spring for keeping the gripping-jaws normally closed, and the yoke *i*, its diverging arms passing through perforations in the rear ends of plates *g g*, and a cord connecting the rear end of said yoke with one of the shafts, substantially as described, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LUKE F. CAUFFIELD.

Witnesses:
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