No. 687,421. Patented Nov. 26, 1901.

J. CALDWELL.

LEATHER STRETCHING DEVICE.

(Application filed June 26, 1900. Renewed Oct. 26, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1

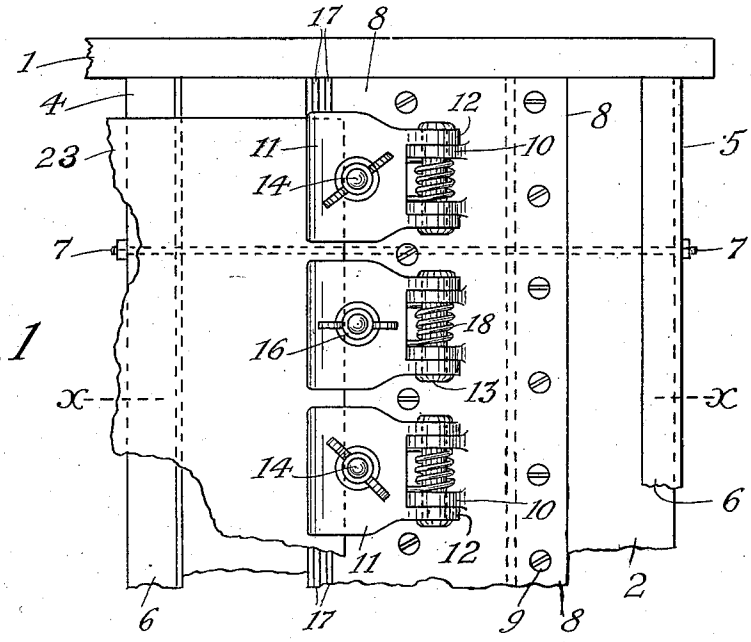
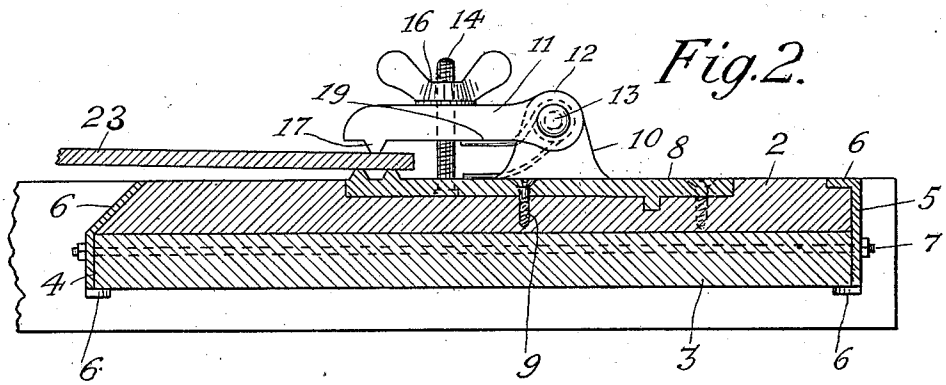


Fig. 2.



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Fig 3

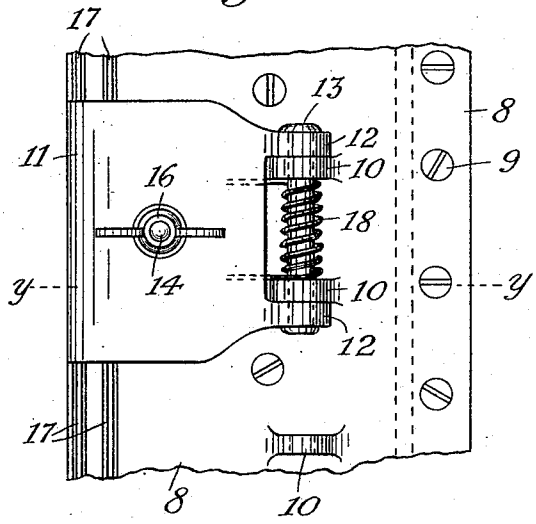
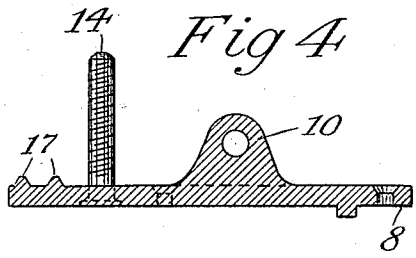


Fig 4



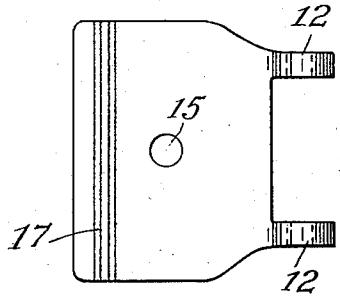


Fig 5

Fig 7

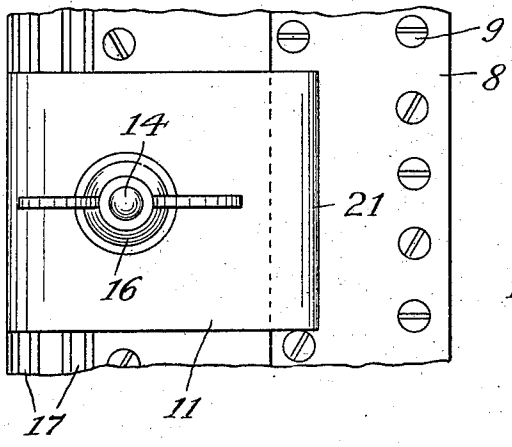
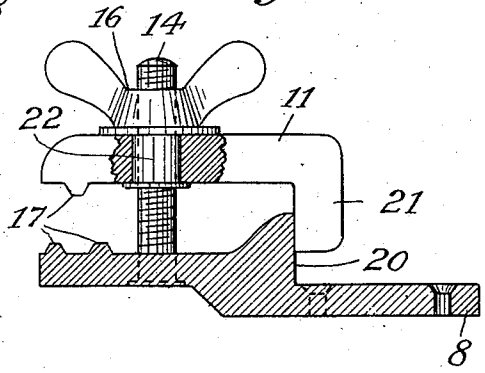


Fig 6



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UNITED STATES PATENT OFFICE.

JOHN CALDWELL, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO THE W. S. NOTT COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION.

LEATHER-STRETCHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 687,421, dated November 26, 1901.

Application filed June 26, 1900. Renewed October 26, 1901. Serial No. 80,065. (No model.)

To all whom it may concern:

Be it known that I, JOHN CALDWELL, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Leather-Stretching Devices, of which the following is a specification.

My invention relates to the means for holding the margins of leather while it is being subjected to tension to stretch it, and particularly in the preparation of sides, backs, and other divisions of leather for use in the manufacture of belting.

The purpose of the present invention is the improvement of the means for engaging and holding the straight end of the leather during the stretching operation. The common practice is to employ a clamp that extends entirely across the stretcher-frame and which, by reason of the length of its members and the degree of pressure required to hold the leather, is of considerable weight, usually upward of a hundred pounds, and such weight adds greatly to the labor of handling the frame to which the clamps are attached. Furthermore, as different portions of the engaged margins of leather vary in thickness and firmness it is necessary to give the clamp sufficient pressure to cause it to take a firm hold of the thinnest portion of leather engaged and in so doing the thicker portions are often injuriously compressed. These objections I propose to overcome by using a series of narrow independently-operated clamps carried by a common plate or body for engaging separate short sections of the leather, whereby the clamp devices as a whole can be made light and each clamp adapted to engage its portion of leather with no more pressure than is required to hold it.

My improvements are illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of an end portion of a stretcher-frame provided with my improvements. Fig. 2 is a vertical section of the same, enlarged, on the line *x x* of Fig. 1. Fig. 3 is a plan view of one of the clamps together with a portion of its supporting-plate. Fig. 4 is a sectional view of such plate on the line *y y* of Fig. 3. Fig. 5 is a view of the under side of the pivoted jaw detached, and Figs. 6 and 7 are respectively sectional and plan views of a modification.

In such drawings, 1 designates one of the side rails of an ordinary rectangular stretcher-frame, which is provided with a fixed and movable head in the usual manner. The head shown in the drawings is a fixed head; but obviously the improvements may be applied to a movable head as well as to the fixed head. The head illustrated consists of upper and lower boards 2 and 3, respectively, held in place between front and rear angle-plates 4 and 5, which have suitable lateral flanges 6 for retaining the boards. Bolts 7 through the lower board and the plates 4 and 5 hold the parts firmly together, and the head may be fastened to the side rails in any convenient way.

On the stretcher-head is secured a plate or bar 8, which may extend entirely across it and which may be secured by means of screws 9 or in any other convenient way. At suitable intervals on the surface of the plate or bar 8 are standards 10 for pivoting the movable members of the series of clamps. These pivoted clamp-jaws 11 are preferably only from two to three inches in width, and at their rear edges are provided with ears 12 for hinging them to the standards 10 by means of pintles 13. At points approximately central to each clamp-jaw there is provided an upright screw 14, that is rigidly attached to the lower jaw or plate 8 and which passes loosely through a hole 15 in the hinged jaw-plate 11. Above the latter is a nut 16, having wings or other suitable means for turning it to press the upper jaw downward toward the lower plate or jaw. Both of these clamp members are preferably provided on their engaging surfaces with ridges 17 or other suitable projections and depressions or other means for causing them to take a firm hold of the leather.

For lifting the hinged jaw 11 a coil-spring 18 may be provided on the pintle of the hinge and having an end portion 19 bearing against the under surface of the jaw, or the nut 16 may be swiveled to the hinged jaw to lift it,

and thereby open the clamp for the insertion or removal of the leather.

In the modified construction shown in Figs. 6 and 7 the plate 8 is provided with an upright abutment 20, and the jaw-plate 11 has a downward projection 21 along its rear edge, which bears against the abutment 20 and may slide upward and downward against it. The jaw 11 is carried by the nut 16 by means of a swiveled connection, which may be at the top or at the bottom, as shown, by the flange of a sleeve 22, that extends through the hole in the jaw and loosely surrounds the screw 14. The jaw can thus be raised or lowered bodily by the nut 16 and when clamped on the leather and subjected to tension will be held by the engagement of its downward projection 21 with the abutment 20.

In use, the series of clamps being open, a straight end of a piece of leather 23 can be inserted, as indicated in Fig. 2, and each clamp compressed by turning its nut until it grasps the leather as firmly as required; and if in the course of the stretching operation some of the clamps require further tightening it can be readily done by the operator by further turning the nuts. After the stretching is completed and the leather dried and ready for removal the nuts can be unscrewed, whereupon the clamps will be lifted by their springs or their nuts and the leather freed for removal.

Having described my invention, what I claim is—

1. The combination with one of the heads of a stretcher-frame, of a holder for a straight end of leather, comprising a plate fixed to said head and adapted to serve as the lower clamp-jaw for each of a series of movable upper jaws, a series of upper jaws independently hinged above said plate, and means for turning them separately on their hinges toward or away from said fixed plate, substantially as set forth.

2. The combination with one of the heads of a stretcher-frame, of a holder for a straight end of leather, comprising a plate fixed to said head and adapted to serve as the lower clamp-jaw in coöperation with a series of movable upper jaws, standards on said plate, a series of upper jaws independently hinged to said standards, and screws and nuts for operating them, substantially as set forth.

In testimony whereof I have hereunto set my hand this 20th day of June, 1900.

JOHN CALDWELL.

In presence of—
F. H. GEORGE,
P. H. GUNCKEL.