

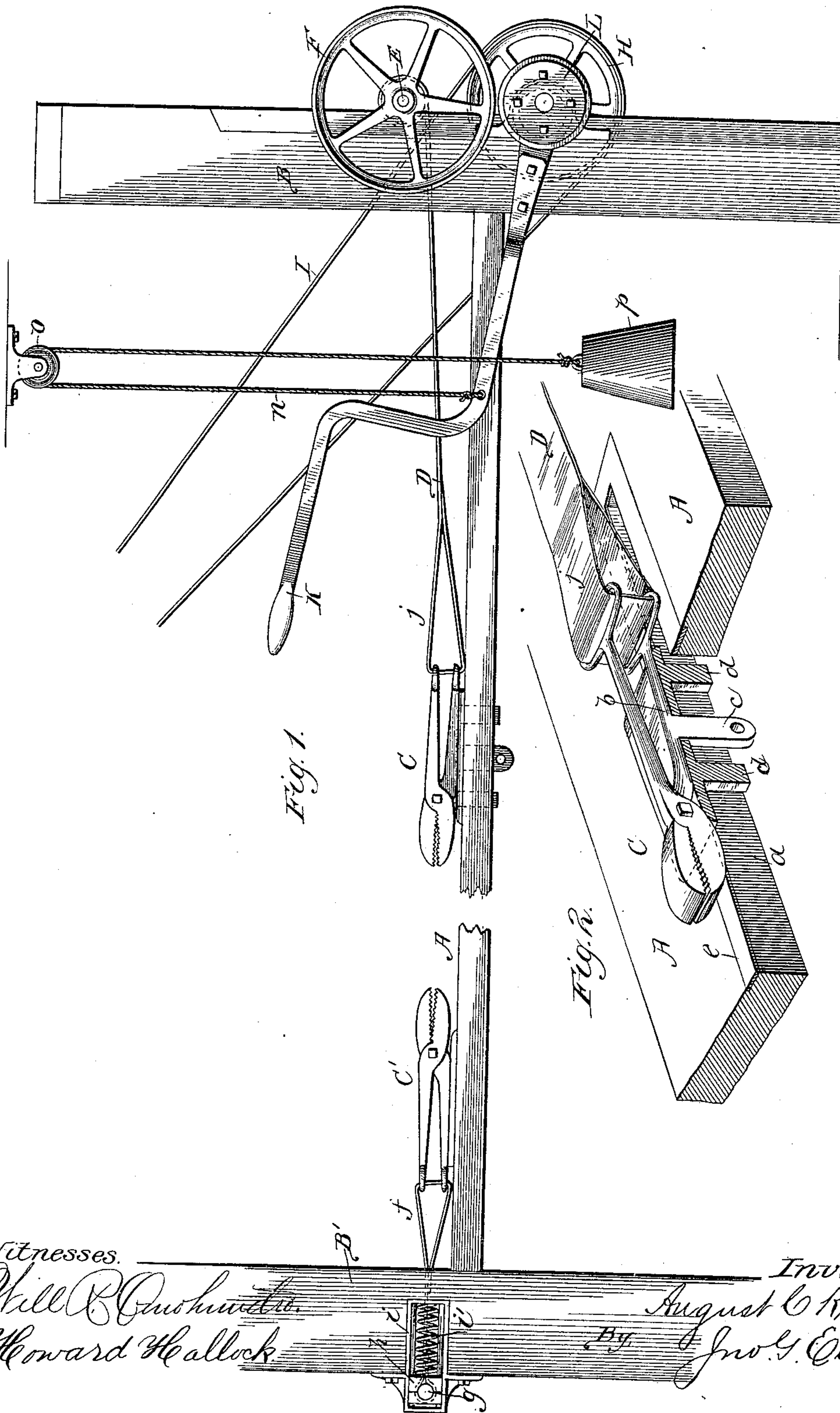
(No Model.)

2 Sheets—Sheet 1.

A. C. KRUEGER.
LEATHER STRETCHING MACHINE.

No. 335,595.

Patented Feb. 9, 1886.



Witnesses.

Will B. Quinlan.
Howard Hallock.

Inventor.

August C. Krueger
By Jno. G. Elliott
Atty.

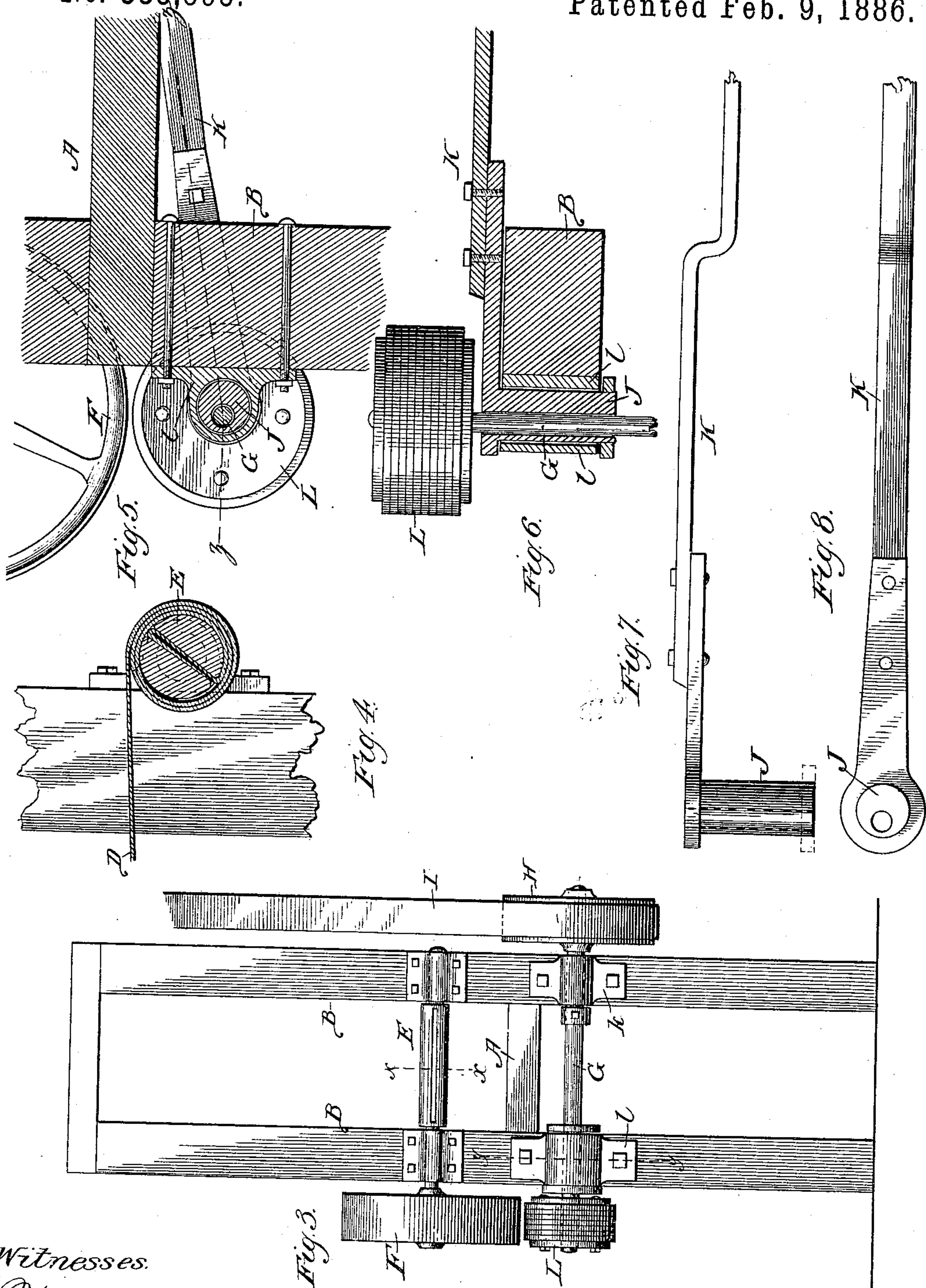
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UNITED STATES PATENT OFFICE.

AUGUST C. KRUEGER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CHICAGO
RAW-HIDE MANUFACTURING COMPANY, OF SAME PLACE.

LEATHER-STRETCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 335,595, dated February 9, 1886.

Application filed June 23, 1885. Serial No. 169,491. (No model.)

To all whom it may concern:

Be it known that I, AUGUST C. KRUEGER, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Leather-Stretching Machines, of which the following is a specification.

This invention relates to improvements in leather-stretching machines in which one of a pair of opposing tongs for gripping the leather has been connected by a belt or strap with a windlass actuated by hand to stretch the leather.

The essential object of this invention is to dispense with hand-labor for stretching leathers and utilize steam or other mechanical power for that purpose.

A further object is to provide a power-machine of the simplest possible construction for stretching leather, which machine shall be fully under the control of the operator in determining the desired degree of stretching, whereby an over amount of stretching sufficient to unduly strain or tear the leather is avoided.

A further object is to have one of the tongs automatically actuated, so that it will normally assume its original position for gripping the leather immediately it is relieved of the strain required during the stretching operation. I attain these objects by devices illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a stretching-machine embodying my invention; Fig. 2, an enlarged detail perspective showing the construction of the bed-plate for the tongs and the track and guide-slot for the same; Fig. 3, an end elevation of the machine; Fig. 4, an enlarged detail section on the line *xx* of Fig. 3; Fig. 5, a similar section on the line *yy*, Fig. 3; Fig. 6, a detail section on the line *zz* of Fig. 5; Fig. 7, a view of the eccentric bearing and lever for actuating the same, detached; Fig. 8, a similar view with the eccentric bearing in end elevation.

Similar letters of reference indicate the same parts in the several figures of the drawings.

The table A is supported by parallel stand-

ards or posts B at one end, and similar posts, B', at the other end, and is centrally slotted longitudinally at *a*, to form a guide for the tongs C, which are alike, and oppose each other and have one of their arms secured to a bed-plate, *b*, by means of a lug, *c*, projecting through and beyond the slot *a*, and perforated to receive a bolt extending at a right angle to the slot, for preventing the tongs from being accidentally disengaged therefrom, the bed-plate having formed therewith lugs *d d*, projecting down into the slot, to form guides for the reciprocating movement of the bed-plate.

To prevent wearing the table and to decrease friction, a track, *e*, consisting of a metal plate countersunk in the table, may be employed for the bed-plate to slide upon. The rear extremities of the tong-levers are provided with eyes to receive a looped strap, one of which straps, *f*, has its end secured to a short cross-shaft, *g*, seated upon a head-block, *h*, guided in a box, *i*, and seated upon the spring *j'*, so that when the tong is under strain the spring will be compressed, and when released from strain the spring will return the tong to its normal position, as shown in Fig. 1. The prime object, however, in spring-seating the tong is to have it yield when first under strain, so as to avoid jerking the leather, and at the same time provide for taking up the stretch of the leather during the stretching operation, and I therefore do not limit myself to the special devices shown for spring-seating the tongs, for it is obvious that any other well-known form of spring-seating devices would answer the same purpose. The other tong is secured to a similar loop, *j*, formed in a strap, D, of suitable length, wound around a shaft, E, which is slotted, as shown in Fig. 4, to receive and lock the end of the strap thereto in the usual manner for securing straps to slotted shafts or drums, one end of said shaft having secured thereon a friction-pulley, F, which is upon the front side of the machine.

Below and parallel with the shaft E is a shaft, G, the rear end of which is journaled in a box, *k*, and carries a pulley, H, which is connected by a belt, I, with some suitable

power-shaft. (Not necessary to be shown.) The other end of the shaft G has its bearing in an eccentric bearing or hub, J, supported in a box, I, and actuated by a bent hand-lever, K, which is maintained in an elevated position by means of a cord, n, elevated pulley o, and a weight, p, but may be spring-seated, if preferred. On the outer end of the shaft G is a friction-pulley, L, which may be of paper, leather, or any of the other materials usually employed for such wheels.

When the hand-lever is in an elevated position, as shown in Fig. 1, it will be seen by reference to Fig. 5 that the friction-pulleys are not in contact, and it is while in this position that a piece of leather is placed upon the table and its opposite edges grasped by the tongs. After the tongs have the leather in their grasp, the hand-lever is depressed by the operator, and by this means the eccentric hub is turned in its bearing, so as to elevate the shaft G, as shown in dotted lines, Fig. 5, and bring the friction-pulley thereof in contact with the pulley F, causing the same to rotate, so as to wind the strap on its shaft and draw the tong thereof away from the opposing tong. The hand-lever is in such position that the operator may stand in a position convenient both for handling the leather and manipulating the lever, and the normal position of the eccentric hub is such that the desired degree of friction between the two wheels is always under full control of the operator, and may be increased or diminished at will during the stretching operation, thereby enabling him to increase or diminish the rapidity of the operation, and also the degree of force applied at any time during the act of stretching the leather, while at the same time the leather is continually under his inspection.

Gears, instead of friction-wheels, may be employed; but in practice the latter are preferred, for the reason that the strain upon the leather by the employment of friction-wheels is more than is possible by the use of gears, which necessarily would actuate the stretching devices with a jerk at the start, liable not only to strip the teeth, but to overstretch or tear the leather during the operation; and in this connection it may be observed that when friction-wheels

are employed the resistance of the lever during the stretching operation quite accurately indicates to the operator the strain being exerted upon the leather, which, if too great, can be decreased to any degree by more or less decreasing the hand-pressure on the lever.

Other advantages common to my machine are, that with a less number of attendants more leather can be better stretched in the same time, and with infinitely less labor than is possible in any of the hand stretching-machines, as I have practically demonstrated by a full-size machine which has been in daily operation for several months. Furthermore, I have demonstrated satisfactorily that leather stretched upon my machine is of better quality than when hand-stretched, as before described.

In conclusion, it may be observed that the eccentric hub may be upon and constitute a bearing for the winding shaft or drum, instead of the drive-shaft, without a substantial departure from my invention, for in either case the operation of the eccentric would be the same; but the construction shown is preferred, because the hand-lever is in a more convenient position for the operator.

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

1. In a leather-stretching machine, the winding shaft or drum, a friction or gear wheel thereon, a drive-shaft, and a friction or gear wheel thereon, in combination with a shifting mechanism for connecting and disconnecting the winding and drive shafts, all arranged substantially as set forth.

2. The winding-drum, the friction-pulley thereon, the drive-shaft, and the friction-pulley thereof, in combination with an eccentric hub, constituting a bearing for the drive-shaft, and a lever for actuating said eccentric, all arranged as and for the purpose described.

3. In a leather-stretching machine, a pair of opposing tongs, in combination with a spring-seating device, substantially as described, for one of said tongs.

AUGUST C. KRUEGER.

Witnesses:

WILL R. OMOHUNDRO,
W. W. ELLIOTT.