J. SHARP.

MACHINERY FOR STRETCHING LEATHER.

No. 190,693. Patented May 15, 1877.

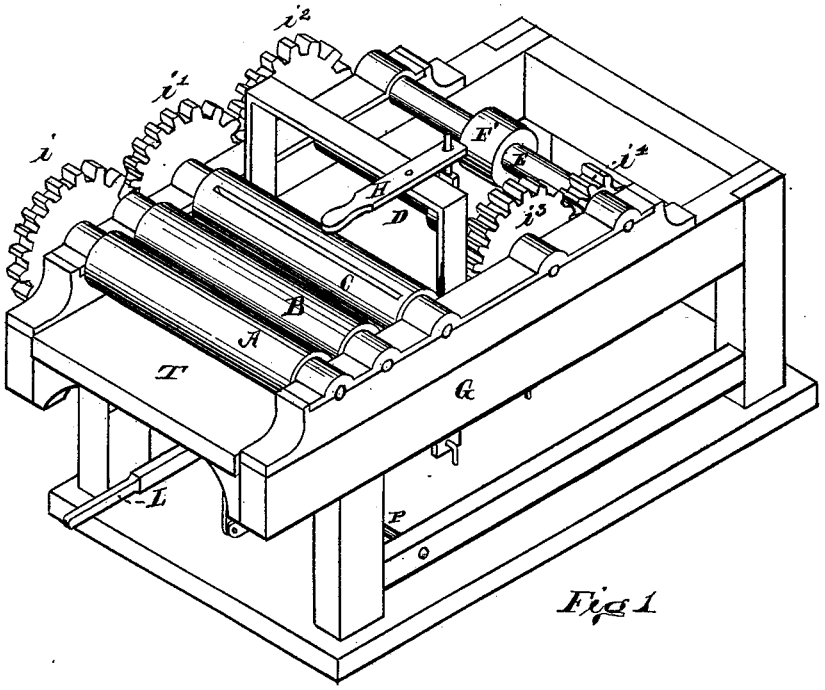

Fig 1

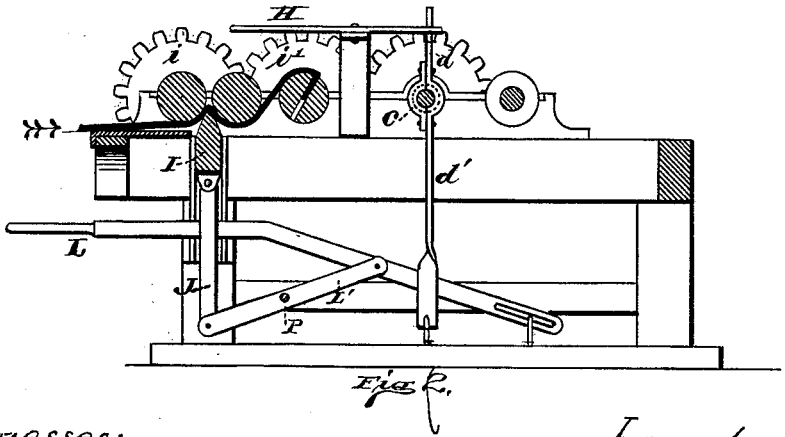

Fig 2.

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UNITED STATES PATENT OFFICE.

JOSEPH SHARP, OF CINCINNATI, OHIO.

IMPROVEMENT IN MACHINERY FOR STRETCHING LEATHER.

Specification forming part of Letters Patent No. **190,693**, dated May 15, 1877; application filed February 14, 1877.

To all whom it may concern:

Be it known that I, JOSEPH SHARP, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Leather-Stretching Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 represents a perspective view of my machine. Fig. 2 represents a vertical longitudinal section of the same.

The object of my invention is to prepare leather for belting by subjecting it to sufficient tension to elongate its fibers to such a degree that, when compressed, it becomes retentive of the additional length given it by the stretching operation; and consists in the combination of a series of parallel rolls with a pressure-bar, or its equivalent, and controlling mechanism in a machine for accomplishing the result, as hereinafter more fully described.

In the accompanying drawings, the parallel rolls A B C and shafts D E are journaled at their extremities in suitable bearings upon the frame G. Power is communicated to the shafts D E and rolls A C through belt-pulley E′, secured to the shaft E, and gear-wheels i i^1 i^2 i^3 i^4, connected with the shafts and rolls, respectively, as shown in Fig. 1. Shaft D is provided with a gear-wheel at each end, and has also a shipping-lever, H, so connected with it by means of the arm d, collar c, and extension d' (the latter being loosely hinged to the bed-plate of the machine, so that it may slide laterally) that the shaft may be moved longitudinally in its bearings, into and out of gear with the pulley-shaft E and the adjacent roll C. The roll C is a lead or take-up roll, having a slot extending through its diameter, and longitudinally between its journals, of sufficient dimensions to admit the end of the side of leather operated upon, as hereinafter described. An adjustable pressure-bar, I, extends across the frame under the rolls A B, guided at its lateral extremities in grooved ways secured to the inner parallel sides of the frame G, within which guides the pressure-bar moves vertically when actuated by the attendant by pressure of the foot upon the lever L, transmitting motion to the pressure-bar through the connecting-lever L′ and standard J. The pressure-bar I is sufficiently free in its lateral guides to permit it to have a limited pivotal or rocking motion, by which it may adjust itself to the irregularities of the leather. To provide for this adjustability the lever L′ is loosely pivoted upon its fulcrum-pin p, which allows it, with the standard J, to which it is hinged, to oscillate or slide laterally as they are actuated by the inequalities of the leather in passing between the pressure-bar and the rollers A B. The roll B is free in its journal-bearings to act as the fixed jaw of a clamp, and to revolve only with the forward movement of the leather, which is held in contact with it by the pressure-bar.

It has been the general practice, in preparing sides of leather to be stretched for belting by machinery, to trim them upon both of their principal edges. That edge which is denominated the "back" of a side of leather is uniformly of curvilinear form when finished by the tanner, and in order to straighten that edge a strip, widest in the middle and tapering at each end, was cut away, and the flank edge of the side was afterward trimmed by cutting it off on a line parallel with the straightened back edge. By this mode of preparing the side of leather a portion of the best part of it, along the back, was wasted or of little value; besides, the scrap taken from the flank edge was also of comparatively little value. Moreover, the side of leather thus trimmed, when subjected to the tension of a stretching-machine, could not be uniformly stretched throughout its entire body, because there was left upon the flank edge a small portion of thin and spongy leather.

In preparing a side of leather for the operation in my machine, I do not trim its back edge, but only trim off the flank upon a line parallel with the curvilineal back edge, and thus I utilize a larger portion of the leather best suited for belting, and make but one scrap, which is of more value for other purposes than the two scraps made by the former mode of trimming.

The side of leather, after being trimmed as above specified, and prepared, in the usual manner, by soaking and stuffing, is ready to be subjected to the action of the machine. The

leather is fed into the machine end foremost, passing over table T, and under rolls A B, to the slotted roll C, into the slot of which its end is inserted, as represented in sectional Fig. 2. The transmitting-shaft D and its gear-wheels being thrown into connection with their fellows by means of shipping-lever, the movement of the lead-roll C draws the leather through in the direction indicated, winding it around the roll C, and at the same time the attendant forces down lever L with his foot, which causes the pressure-bar I to rise in contact with the leather, clamping it between bar I and the rolls A B, as shown in Fig. 2, thus acting as a brake upon the leather, and subjecting it to a high degree of tension and compression. The leather is then removed from roll C, and again passed through the machine with its other end foremost.

The side of leather, which, when prepared for the machine, is curvilinear upon both its principal edges, and yields most upon its blank edge when subjected to longitudinal strain, will, by the action of the machine, become permanently straightened, and acquire equal texture and solidity throughout its entire body.

The roll A, like the roll B, may be left free to revolve only as acted upon by the passing leather, or, by the use of an idler-pinion, may be caused to revolve in a contrary direction. It is also obvious that the machine would be operative if the rolls A B were simply fixed cylindrical bars, presenting smooth surfaces to the leather in its passage.

Having fully described my invention, I claim—

1. The combination, in a leather-stretching machine, of the horizontal series of parallel rolls with a centrally-pivoted self-adjusting pressure-bar, arranged for operation substantially as described.

2. In a leather-stretching machine provided with a series of parallel rolls, substantially as described, the combination of a centrally-pivoted self-adjusting pressure-bar with a system of levers for operating the same, substantially as and for the purpose specified.

3. In a leather-stretching machine, the self-adjusting pressure-bar, centrally pivoted below a pair of rolls, in combination with its operating-levers and treadle, for straightening and equalizing the texture of the side or piece of leather being stretched, substantially as described.

Witness my hand this 23d day of January, 1877.

JOSEPH SHARP.

Witnesses:

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H. P. K. PECK.