J. W. HATCH.

Machine for Pressing Leather Seams.

No. 160,770. Patented March 16, 1875.

Fig. 1.

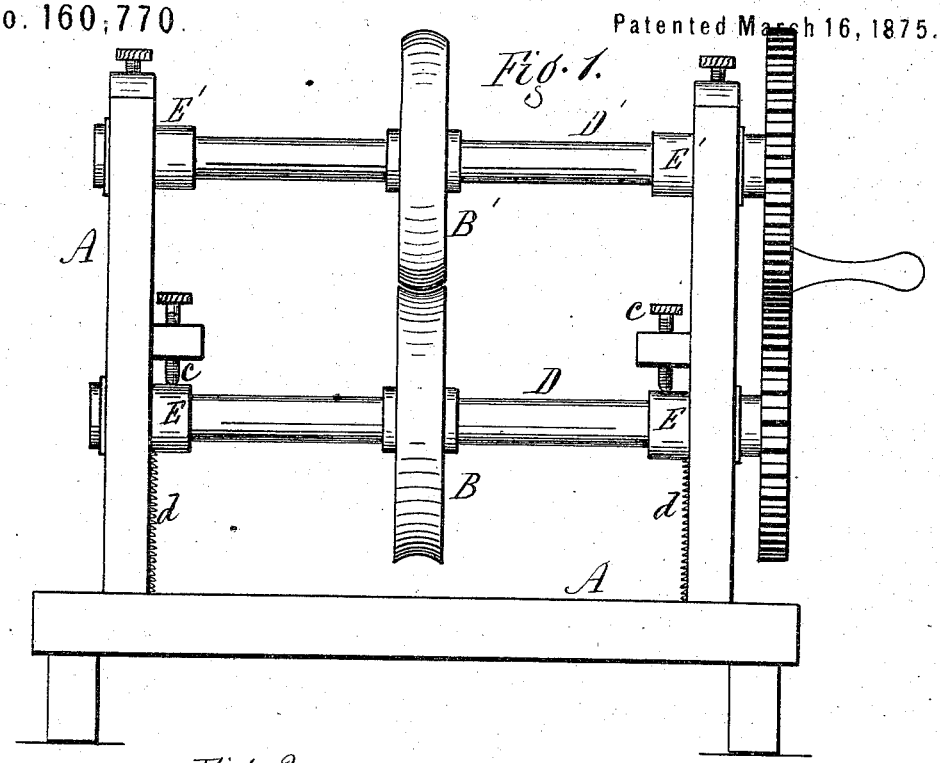

Fig. 2.

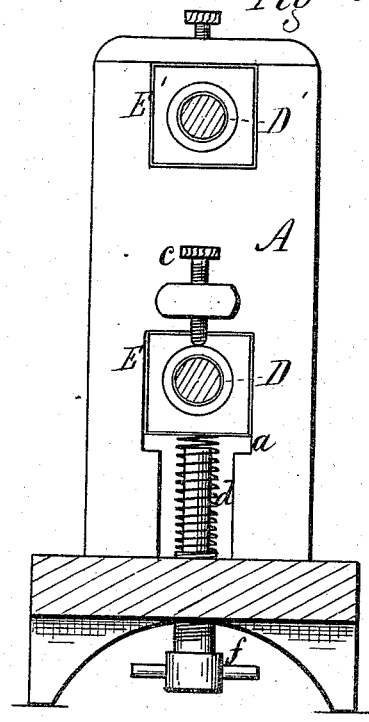

Fig. 3.

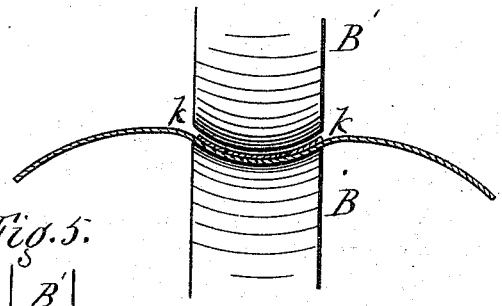

Fig. 5.

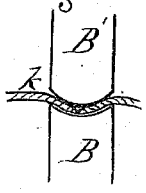

Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

JESSE W. HATCH, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN MACHINES FOR PRESSING LEATHER SEAMS.

Specification forming part of Letters Patent No. **160,770**, dated March 16, 1875; application filed December 22, 1874.

To all whom it may concern:

Be it known that I, JESSE W. HATCH, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Machines for Pressing Leather Seams; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is a cross-section. Fig. 3 is a diagram, showing the seam passing between the rollers. Fig. 4 is a cross-section of the seam. Fig. 5, a view similar to Fig. 3, but showing a different form of seam.

This invention relates to a machine for pressing or flattening leather seams in the manufacture of shoes, harness, &c.

Such work has usually been done by hand, by placing the seam over a form, clamping it in place, and then rubbing it by a tool held in both hands of the operator. Such work is very slow, and very imperfectly done, for the reason that it is difficult to apply the necessary pressure, and the tool is liable to run one side, and the leather is apt to slip and wrinkle. Attempts have been made to produce the rubbing action by machinery, but have not been successful, for the reason that if great pressure is applied the leather rolls up and wrinkles, and will not keep its place, particularly when light leather is used.

My invention consists in the combination with convex and concave rollers, situated one on a fixed and the other on a movable shaft, and both having a positive and equal rotation, of set-screws above the movable shaft, and adjusting screws, with springs, below it, for the purpose of giving elasticity to the rollers, and gaging them exactly to the thickness of the leather which passes through, as hereinafter described.

In the drawings, A is a frame of any convenient construction. B and B′ are the narrow convex and concave rollers, respectively, situated on shafts D D′, which rest in boxes E E′. The lower boxes E have a vertical movement in the slots *a*, Fig. 2, to allow the rollers to be separated more or less. 1 2 are two spur-gears on the ends of the shafts, which mesh together, and one of them is driven by a pulley, crank, or any other suitable device. On top of the lower boxes E E rest set-screws *c c*, and beneath them rest springs *d d*, which are adjusted higher or lower by adjusting-screws *f f*, or equivalent. These springs allow the lower roller to yield as the leather passes through, while the set-screws above form stops to gage the amount of opening between the rollers, to receive greater or less thicknesses of leather. These devices might be connected with the upper instead of the lower roller with the same effect. The seam *k* is inserted between the rollers, and run through longitudinally, as shown in Fig. 3, the seam proper, or ridge, coming centrally between the rollers, which are of sufficient width to bear and hold on the leather each side of the seam. The action upon the leather in passing through is two-fold: first, to press down and flatten the seam, which is done by the compression of the rollers; and second, to straighten or stretch the sides of the leather laterally away from the seam, which opens the seam, and produces the necessary tension upon the stitching, and thereby prevents wrinkling, producing also a much more effective flattening of the seam than could be produced by straight rollers. This action is produced by reason of the outer rim or edge of the concave roller being of greater diameter than the corresponding outer rim or edge of the convex roller, the said rim of the concave roller thereby moving the fastest, and working the leather outward laterally from the center each way, and pushing it forward while the seam rests centrally.

By this means no puckering or irregularity of the seam is produced; but the latter is left perfectly smooth and flat, and is in the best condition for making up into shoes. The side action removes all the contraction of the thread which occurs after stitching, and straightens the leather out much better than hand-rubbing. The compression removes all the lumps and projections which occur in the seam, and which cannot be removed by the ordinary hand rubbing.

Great saving of labor, at least nine-tenths, is also made in shoe manufactories over hand labor, since the work can be done much more rapidly, and with less care and exactness,

which is a matter of much consideration with shoe manufacturers.

The width of the rollers should only be such as to retain a narrow hold on each side of the seam, for the purpose of spreading the seam, and not take a wide hold, otherwise the spreading action would not be effective. This is apparent when it is considered that the two parts of the leather seamed together—for instance, uppers—are frequently of curved and irregular shapes, and the outer edges frequently of greater length than the seam, in which case, if very wide rollers were used, holding upon large surfaces of the leather, the seam would not be pressed evenly, but would be wrinkled and puckered. It is, therefore, desirable that the hold of the rollers should only be at the edges of the seam. Two narrow flat rollers, with the corners turned off, might be employed in the same manner as above described; but would not be so effective in operation as the rollers made convex and concave over their whole periphery.

I am aware that rollers have been used for the purpose of pressing and trimming welted seams. Such I do not claim; but

Having thus described my invention, what I claim as new is—

In a seam-pressing machine, the combination, with the convex and concave faced rollers B B′, situated one on a fixed and the other on movable shaft, and both having a positive and equal rotation, of the set-screws *c c* above the movable shaft, and the adjusting-screws *f f* with springs *d d* below the shaft, for the purpose of giving elasticity to the rollers and gaging them to different thicknesses of leather, all substantially as and for the purpose described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

J. W. HATCH.

Witnesses:
R. F. OSGOOD,
EDWIN B. SCOTT.