

(No Model.)

2 Sheets—Sheet 1.

G. POLLOCK.
LEATHER FOLDING MACHINE.

No. 557,341.

Patented Mar. 31, 1896.

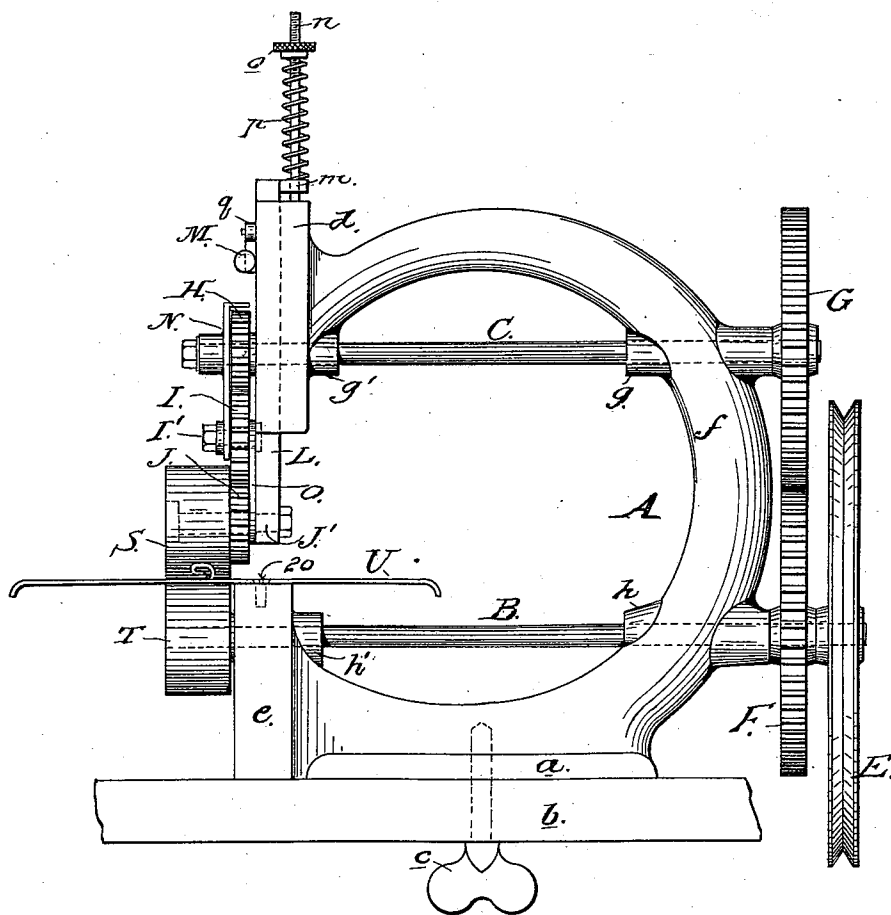


Fig. 1.

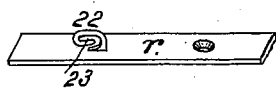


Fig. 3.

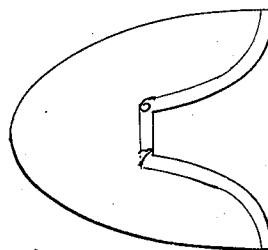


Fig. 4.

Witnesses
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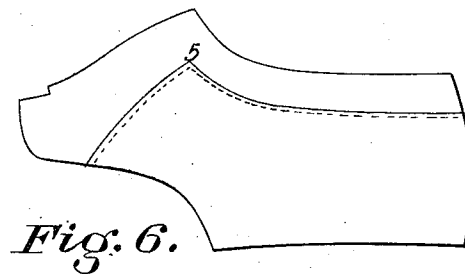
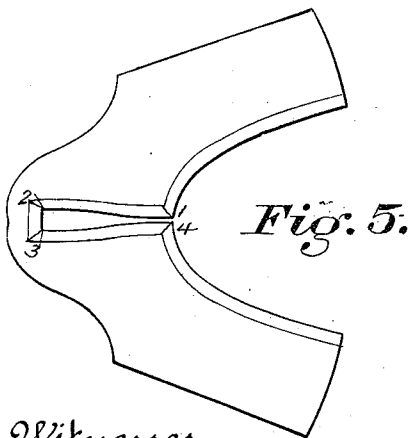
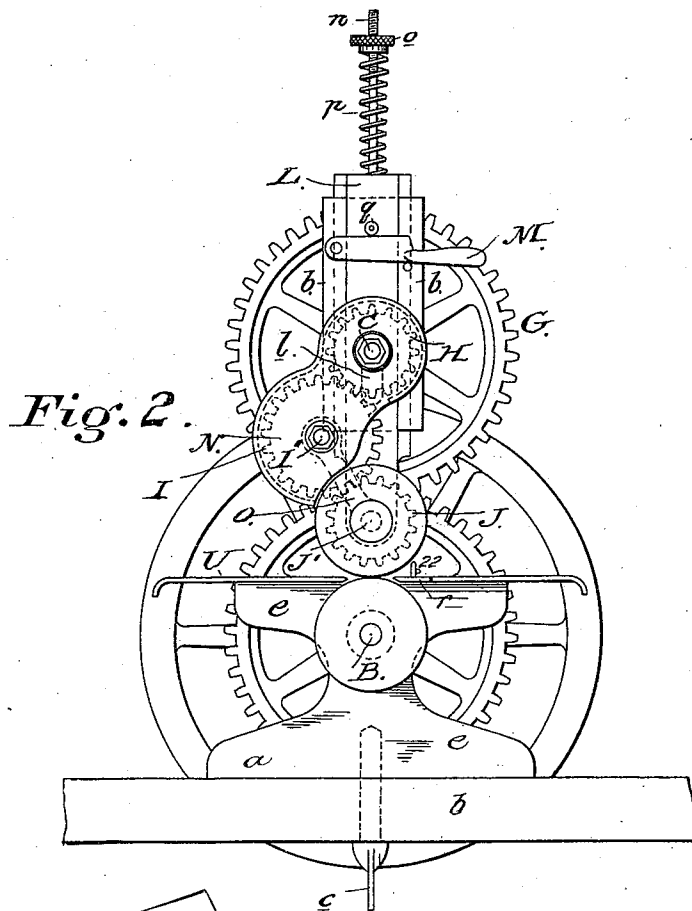
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2 Sheets—Sheet 2.

G. POLLOCK.
LEATHER FOLDING MACHINE.

No. 557,341.

Patented Mar. 31, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE POLLOCK, OF BALTIMORE, MARYLAND.

LEATHER-FOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 557,341, dated March 31, 1896.

Application filed January 9, 1896. Serial No. 574,872. (No model.)

To all whom it may concern:

Be it known that I, GEORGE POLLOCK, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Leather-Folding Machines, of which the following is a specification.

My invention relates to machines for folding leather more particularly, although, as will be apparent from the following description, the invention is adapted to folding other materials.

The primary object of the invention is to construct a machine, for the use of shoe-manufacturers for folding the edges of shoe vamps, quarters, and other components of a shoe or other foot-gear so that the edges of such parts or blanks may be folded with great nicety and precision and leaving sharp and accurate angles or corners to enhance the attractiveness of the completed article.

Another object is to construct a simple machine wherein the folding appliance or device is in plain view of the operator and wherein the feed of the article or piece being folded is accomplished by the drawing action of opposing pressure-rolls in contradistinction to machines of this type which employ devices which act upon the folded edges by reciprocating hammers, which injuriously mar the folded edges and thereby detract from the artistic finish of the completed article.

The invention consists of the parts and the constructions and combinations of parts which I shall hereinafter fully describe, and point out in the claims.

In the accompanying drawings, which illustrate the preferred form of my invention, and in which similar letters and figures of reference indicate corresponding parts in the several views, Figure 1 represents a side elevation of a leather-folding machine embodying my invention. Fig. 2 is a view of one end of the machine. Fig. 3 is a detail in perspective of the folding device or former. Fig. 4 is a view of a blank termed a "square-set vamp." Fig. 5 is a blank of an Oxford-tie quarter. Fig. 6 is a blank of an Oxford-tie with a patent-leather facing and the quarter set under the patent-leather.

Referring now to Figs. 1 and 2, A represents the frame of the machine, which may be

of any desired form, but is herein shown as having an essentially G form, and comprises a base-plate *a*, by which the machine is secured to a support *b* by means of a suitable fastening medium, a screw *c* being herein shown as answering this purpose. The frame A also comprises a head *d* and a standard or foot *e*, and in the arm *f* of the frame is formed or placed suitable bearings *g h* for the horizontal parallel shafts B and C. One of these shafts, B, is provided with a band-wheel E, to which power from any desirable source is applied to rotate the shaft and the feeding devices to be hereinafter described. The shaft B also carries a gear-wheel F, which meshes with a similar gear G on the other shaft, C, whereby this latter shaft is driven.

The shafts B and C extend across the open center of the frame and have their forward portions journaled in bearings *g' h'* in the head *d* and foot *e*, respectively, and on the shaft C, outside of the head *d*, is fixed a pinion H, which meshes with a pinion I, which in turn meshes with and drives a pinion J on a bolt or stub-shaft J'. This latter shaft J' is fixed in the lower portion of a bar or plate L, which is adapted to slide vertically in guides formed in the face of the head *d*, as shown in Fig. 2, the said plate or bar L being slotted, as at *l*, to permit the plate to be moved up and down without interference from the shaft C. In order that this plate or bar may be raised, when desired, as when a seam passes between the feed-rolls, hereinafter mentioned, and returned to its normal position again, I construct or provide its upper portion with a lug or arm *m*, having an opening which receives a rod or bolt *n*, rising vertically from the head of the machine and threaded at its upper end to receive a nut *o*. Between this nut and the lug or arm *m* and surrounding the rod or bolt *n* is a spring *p*, the tension of which is regulated by the nut. This spring and the weight of the parts is to return the bar or plate L and its adjuncts after the same have been elevated, which latter position is accomplished by the use of a lever M, pivoted at one end to the head, having its outer end terminating in a handle portion and having its intermediate portion to engage a lug or antifriction-roller *q*, projecting from the face of the sliding plate or bar,

so that when the lever is raised it also raises the plate or bar L and its adjuncts.

Upon the end of the shaft C is an arm or lever N, herein shown in the form of a housing for the gears H and I, but which may represent a single link or lever. It is fulcrumed on the shaft C, and in its lower end is the bolt or shaft I', on which the gear I is secured to freely turn. The bolt or shaft I' connects with the shaft or stud J' by means of a link or connection O, whereby when the plate L is raised it carries with it the pinion J, which, through its link connection and the arm or lever N, causes the said arm or lever N to be forced laterally, swinging about the shaft C as an axis, so that these parts may not interfere with the vertical upward movement of the plate. These parts are moved in a reverse direction and resume their normal condition when the plate or bar is lowered.

The feeding mechanism includes a pair of opposing rollers S T, one of which, S, is carried by the shaft or stud J' and is held under a yielding pressure by the spring p. The other roller, T, is on the end of the shaft B, and the disposition and arrangement of the gearing is such that these rollers rotate in opposite directions to engage and draw the material received from an edge-folding device between them and feed it with regularity. The foot or standard of the frame has a table U, and to this is fitted, as by a set-screw 20, the device or attachment which forms the fold on the leather. This attachment consists of a plate r, having a raised lug or pin 22, bent downwardly and returned upon itself to form a slot or guide 23 open at one end to receive the edge of the leather to be folded. This plate is secured just in front of the rollers and in plain view of the operator and is readily removable for the substitution of like plates or attachments having forming lugs or folders of other sizes.

In the operation of my invention the desired and previously-cut blank, which may be a quarter or other component of a shoe or other foot-gear or other article, has that edge or edges to be folded provided with paste or other adhesive substance. This edge is then placed in the open slot of the folder, which immediately folds and forms it with great nicety and precision. As it emerges from the opposite side of the folder it is caught by the pressure-rolls, either one or both of which may be serrated, corrugated, or roughened, if desired, to increase the frictional contact, and the folded edge is pressed tightly down upon the body portion. There is also no marring of the leather at the folded edge, which is a source of objection to many machines designed for folding leather employing devices for tapping or hammering the folded edge.

The proximate relation of the folder and rolls and the construction of these parts are such that I am enabled to do with this machine what has not been accomplished, as far as I am aware, with machines usually used

for this purpose—namely, to make an accurate and sharp-finished turn at such angles, as shown at 1 2 3 4 in the blank shown in Fig. 5, or at 5 in Fig. 6, or 6 and 7 in Fig. 3. Heretofore at such places the angle was not sharp and the folded portions were left more or less bunched or irregular, thereby detracting from the finished appearance of the shoe.

I do not wish to be understood as limiting the invention to shoes and foot-gear, as it is equally applicable in the manufacture of pocket-books, purses, wallets, satchels, and any and all classes of leather goods or goods of a foldable nature requiring a folded edge.

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

1. In a folding-machine, the combination, with a frame having a vertically grooved or channeled head, of a vertical plate or bar slidably mounted in said head, a feed-roller carried by said plate, a second feed-roller opposing the first-named one, means for rotating the rollers and an edge-former proximate to the rollers and adapted to fold the edge of the article delivered to the rollers.

2. In a folding-machine, the combination, of a frame having a vertically grooved or channeled head and a foot or standard, a table secured to said foot or standard, a shaft passing across the frame and through said standard, having a feed-roller on one end, a second shaft, a yielding plate or bar slidably mounted in said channeled head, and slotted to freely receive said second shaft, and carrying a feed-roller opposing the first-named roller, means for rotating the rollers, and means for folding the edge of the article as it is delivered to the rollers.

3. In a folding-machine, the combination, with a frame having a lower feed-roller, an upper feed-roller mounted in a vertically-slidable bearing, independent drive-shafts mounted in stationary bearings, one of said shafts carrying the first-named roller and the other carrying a fixed pinion, gearing movable with said slidable bearing and interposed between the pinion and the upper roller for rotating the latter, and an edge-former in advance of the rolls for delivering the material thereto.

4. In a leather-folding machine, the combination, of a frame having a foot or standard and a grooved or channeled head, a plate or bar slidably mounted in said head, a feed-roller carried by said plate or bar, a shaft mounted in the frame and passing through a slot in the plate or bar, means for driving said shaft and transmitting its motion to the feed-roller, a second shaft journaled in the frame and provided with a feed-roller opposing the first-named roller, means for driving this second shaft and an edge-forming device in advance of the rollers for folding the edge of the material and delivering it between the rollers.

5. In a leather-folding machine, the combi-

nation, of a frame having a foot or standard provided with a table, and a grooved or channeled head, parallel drive-shafts mounted in the frame and provided with means whereby
 5 they are rotated, a plate or bar slidably mounted in the head, and carrying a pinion at its lower end, a roll on the shaft or axis of the pinion, a pinion on one of the drive-shafts, a roll on the other drive-shaft opposing the
 10 first-named roll, a pinion intermediate of the pinions on the upper shaft and the pinion on the slidable bar or plate and a toggle-lever connection between the train of pinions to enable the intermediate pinion to be moved
 15 to one side as the slidable bar is raised and to resume its normal position when the bar is lowered, means for raising the bar or plate and means for folding the edge of the material.

6. In a leather-folding machine, the combination, of a frame having parallel drive-shafts, a feed-roller on one of said shafts, a bar or plate slidably mounted in the frame and slotted to receive one of said shafts, a spring acting on the bar or plate to hold it under a
 20 yielding pressure, means for elevating the bar, a feed-roll carried by the plate or bar and op-

posing the first-named roll, gearing carried by the slidable plate and located between this second roll and one of the power-shafts, for driving the said roll, a table on the frame and
 30 an edge-forming device on the table proximate to the rolls for folding the edge of the material and delivering the material to the rolls.

7. In leather-folding machines, a frame
 35 having a foot or standard, a table secured to said foot, opposing feed-rollers mounted in said frame and means for operating them, and an edge-folding device just in front of the
 40 rollers and consisting of a plate to be secured to the table, having a raised pin located between the side edges of the plate and extending longitudinally of said plate, and bent
 45 downward and returned upon itself to form an elongated slot or guide open at one end to receive the edge of the goods to be folded.

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

GEORGE POLLOCK.

Witnesses:

MURRAY HANSON,
 WILLIAM H. BERRY.