(No Model.) 2 Sheets—Sheet 1.

G. F. DUNN.

WELT MAKING MACHINE.

No. 458,046. Patented Aug. 18, 1891.

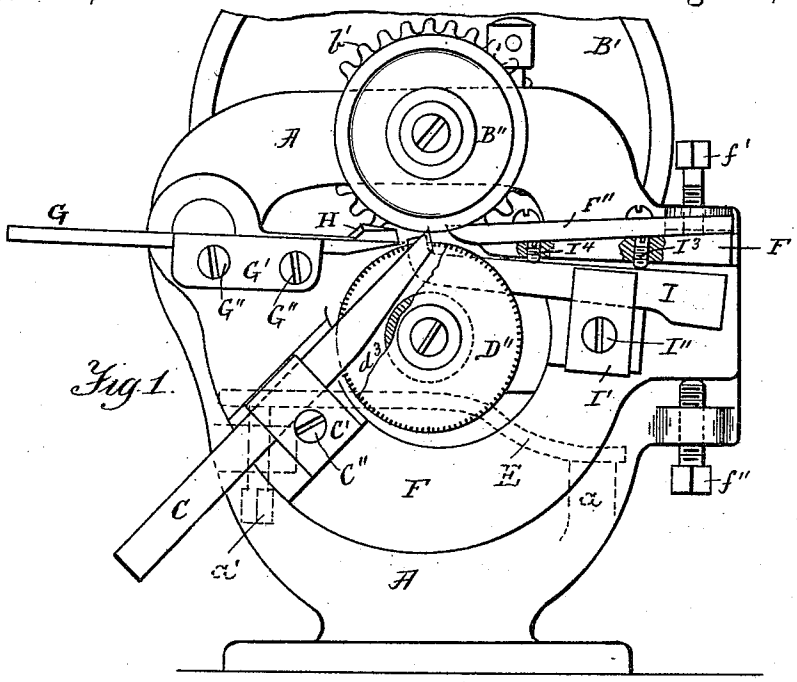


Fig. 1.

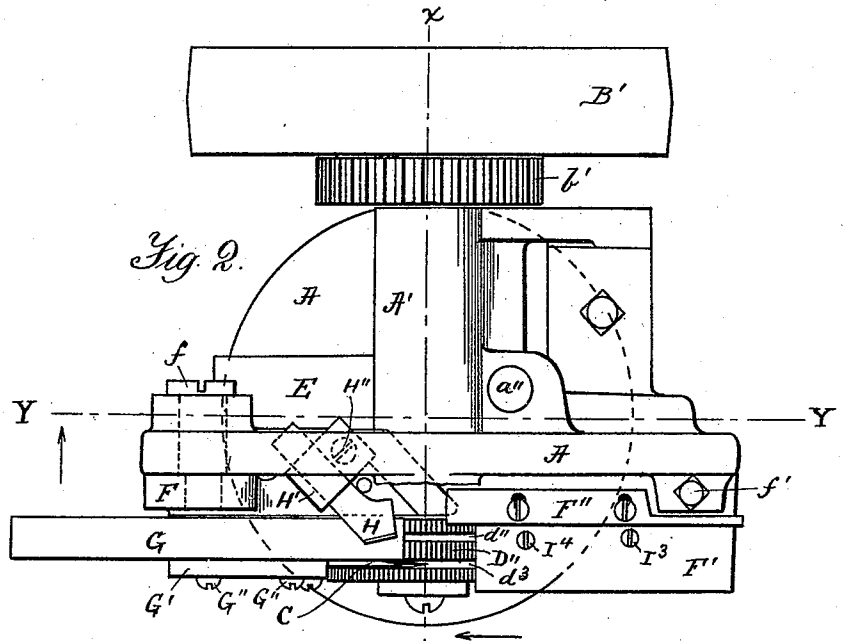


Fig. 2.

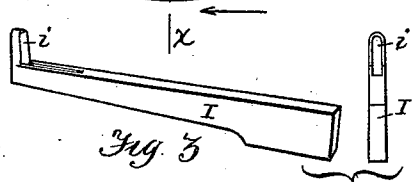


Fig. 3.

Witnesses
Thomas McSweeny
Alice A. Perkins

Inventor.
George F. Dunn.
by Albert Andrew
his atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

G. F. DUNN.

WELT MAKING MACHINE.

No. 458,046. Patented Aug. 18, 1891.

Fig. 4.

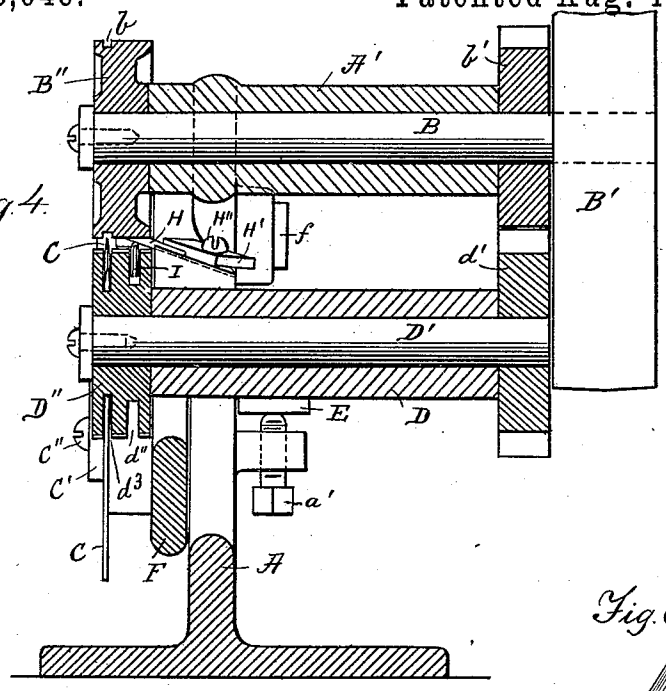
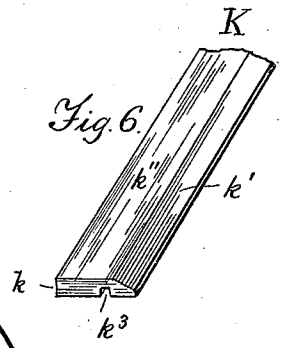


Fig. 6.



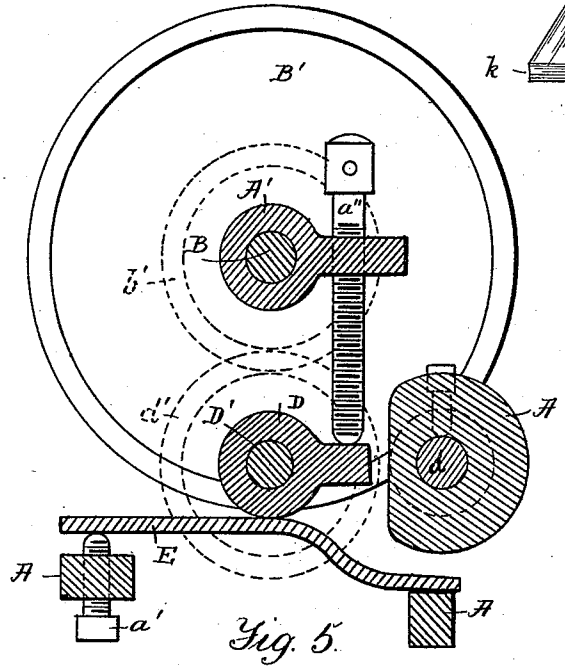


Fig. 5.

Witnesses
Thomas M. Hobbs
Alice A. Perkins

Inventor.
George F. Dunn.
by Alban Andrén
his atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE F. DUNN, OF BROCKTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO FLORENTINE L. STONE, OF SAME PLACE.

WELT-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 458,046, dated August 18, 1891.

Application filed March 12, 1891. Serial No. 384,777. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. DUNN, a citizen of the United States, and a resident of Brockton, in the county of Plymouth and State of Massachusetts, have invented new and useful Improvements in Welt-Making Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in welt-making machines for the purpose of cutting and making boot or shoe welts, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a front elevation, parts being shown in section. Fig. 2 represents a plan view showing the upper feed-roller as removed. Fig. 3 represents a detail perspective and end view of the grooving-knife. Fig. 4 represents a longitudinal section on the line X X shown in Fig. 2. Fig. 5 represents a cross-section on the line Y Y shown in Fig. 2; and Fig. 6 represents a perspective view of the welt made by my improved machine.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

The machine consists of a suitable frame A, having an upper bearing A′, in which is journaled the driving-shaft B, to which is secured a belt-pulley B′, by means of which and suitable belt-power the said driving-shaft is set in rotation. To the forward end of said driving-shaft is secured a feed-roller B″, having an annular groove *b*, adapted to receive the upper end of the separator-knife C, hereinafter to be described, by means of which the welt is cut off the desired width.

To the frame A is pivoted at *d* a bearing D, in which is journaled the lower feed-roll D′, to the forward end of which is secured the grooved feed-roller D″. The shafts B and D′ are geared together by the respective equal gear-wheels *b′* and *d′*, as shown in Figs. 1, 2, 4, and 5. The lower pivoted feed-roller D″ is held upward against the welt that is being fed between the upper and lower feed-rolls by means of an adjustable spring E, one end of which is preferably supported on a stationary projection *a* on the frame A, the other end of said spring being preferably supported on an adjustable set-screw *a′*, screwed through a projection on the said frame A, as shown in Figs. 1, 4, and 5. The lower feed-roller D″ is thus held upward with a yielding pressure against the leather that is being fed between the feed-roller, so as to allow said lower roller to yield downward according to irregularities in the thickness of the stock that is being cut up and made into welts. The upward motion of the lower feed-roll and its bearing is limited by means of an adjustable set-screw *a″* passing through a screw-threaded perforation in a projection on the frame A. Against the lower end of such set-screw *a″* the pivoted bearing D is held by the influence of the spring E, as fully shown in Fig. 5.

At *f* on the frame A is pivoted one end of the knife carrier or holder F, the position of which is adjusted by means of upper and lower set-screws *f′* and *f″* going through screw-threaded projections on the frame A and bearing against the upper and lower parts of said carrier F, as shown in Figs. 1 and 2. To the carrier F is adjustably secured the separator-knife C, the skiving-knife G, the chamfering-knife H, and the grooving-knife I, as shown in Figs. 1, 2, and 4.

K in Fig. 6 represents what is termed in the trade as a "Goodyear welt," having a plain edge *k* on one side and a chamfered edge *k′* on the opposite, a top surface *k″* and a groove k^3 on its under side, as is usual in welts of this kind.

The separator-knife C serves the purpose of cutting the edge *k* on the welt and making the latter of the desired width as the leather stock is being fed between the rolls B″ and D″. The skiving-knife G serves the purpose of skiving off the top surface *k″* of the stock, and thus making the welt of equal thickness throughout its length; the chamfering-knife H serves the purpose of cutting the chamfer *k′* on the welt, and the grooving-knife I serves to cut the groove k^3 on the under side of the welt, as shown.

The separator-knife C is adjustably secured to the holder F, preferably by means of a clamp-plate C′ and clamping-screw C″, as shown in Figs. 1 and 4. The skiving-knife G is simi-

larly adjustably secured to said holder F preferably by means of a clamp-plate G′ and clamping-screws G″ G″, as shown in Figs. 1 and 2. The chamfering-knife H is adjustably secured in an inclined position to said holder, preferably by means of a clamp-plate H′ and clamping-screw H″, as shown in Figs. 2 and 4. In one piece with the right-hand portion of the knife-holder F is made the laterally-projecting work-supporting table F′, on top of which is secured a laterally-adjustable gage F″, as shown in Figs. 1 and 2. The grooving-knife I has in its inner end an upwardly-projecting ∩-shaped cutter *i*, inserted in an annular groove *d*″ on the lower feed-roller D″, the upper edge of said cutter being made to project slightly above the periphery of said feed-roller, as shown in Figs. 1, 2, and 4. d^3 is a similar annular groove on the lower feed-roller D″, adapted to receive the separator-knife C, the upper edge of which extends above the periphery of said feed-roller D″ and projects into the groove *b* on the upper feed-roller B″, as shown in Figs. 1, 2, and 4. The grooving-knife I is adjustably secured to the holder F, preferably by means of a clamping-plate I′ and clamping-screw I″. The cutting-edge *i* of said grooving-knife is adjusted up and down, according to depth of groove desired on the welt, preferably by means of pressure-screws I^3 and I^4, screwed through the work-support F′ and bearing against the upper edge of the said grooving-knife on opposite sides of its lower support, as shown in Figs. 1 and 2.

The operation of the improved machine is as follows: A strip, belt, or sheet of leather of proper thickness is placed upon the work-plate F′, its edge guided against the gage F″, and pushed between the feed-rollers B″ D″, which take hold of the stock and feed it forward. During such feed the separator-knife C cuts the welt of the desired width, the skiving-knife G skives it to a proper uniform thickness, the inclined chamfering-knife H produces the chamfer *k*′, and the hooked grooving-knife I cuts away a portion of the under side of the stock and forms the groove *k*″, leaving the welt in a finished state (shown in Fig. 6) as it is delivered from the machine. If a non-grooved welt is desired, it is only necessary to lower the upper cutting-edge of said knife below the periphery of the lower feed-roller D″, or remove it from the machine, as may be required.

By adjusting the position of the feed-roller D″ relative to the upper feed-roller B″ and adjusting the position of the knife-carrier F and its work-support F′ welts may be cut of any desired thickness. The depth of the groove k^3 on the under side of the welt is regulated by adjusting the position of the grooving-knife relative to the feed-roller D″, which is done by means of the adjusting-screws I^3 I^4, by which the cutting-edge of the said grooving-knife is raised or lowered, causing a more or less deep groove to be made on the under side of the welt.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. A welt-machine consisting of a pair of uniformly-rotating feed-rollers B″ D″, between which the welt is fed by the rotation of the rollers, and a knife-carrier F, provided with clamping-plates C′, G′, H′, and I′, and separator, skiving, chamfering, and grooving knives C, G, H, and I, secured, respectively, by the clamping-plates and arranged, substantially as shown and described, to simultaneously separate, skive, chamfer, and groove the welt.

2. A welt-machine consisting of a pair of uniformly-rotating feed-rollers B″ D″, between which the welt is fed by the rotation of the rollers, a pivoted knife-carrier F, provided with clamping-plates C′, G′, H′, and I′, separator, skiving, chamfering, and grooving knives C, G, H, and I, respectively clamped by the clamping-plates to the pivoted knife-carrier, and means for vertically adjusting the knife-carrier toward and from the axes of the rollers, substantially as described.

3. A welt-machine consisting of the upper feed-roller B″, the lower feed-roller D″, having an annular groove b^2 in its periphery, a knife-carrier F, provided with separator, skiving, and chamfering knives C, G, and H, and a grooving-knife I, also mounted on the knife-carrier and provided with an upwardly-projecting grooving-cutter *i*, arranged in the annular groove of the lower feed-roller, substantially as described.

4. The combination of the frame A, the upper feed-roller B″, having the annular groove *b* in its periphery, the lower feed-roller D″, having the parallel annular grooves *d*″ and d^3 in its periphery, the knife-carrier F, pivoted to the frame between the latter and the inner sides of the feed-roller, the separator and grooving knives C and I, mounted on the knife-carrier and extending, respectively, into the annular grooves of the lower feed-roller, and the separator-knife projecting into the groove of the upper feed-roller, and the skiving and chamfering knives G and H, mounted on the pivoted knife-carrier, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 9th day of March, A. D. 1891.

GEORGE F. DUNN.

Witnesses:
HERBERT N. CHASE,
ALFRED E. WOODWARD.