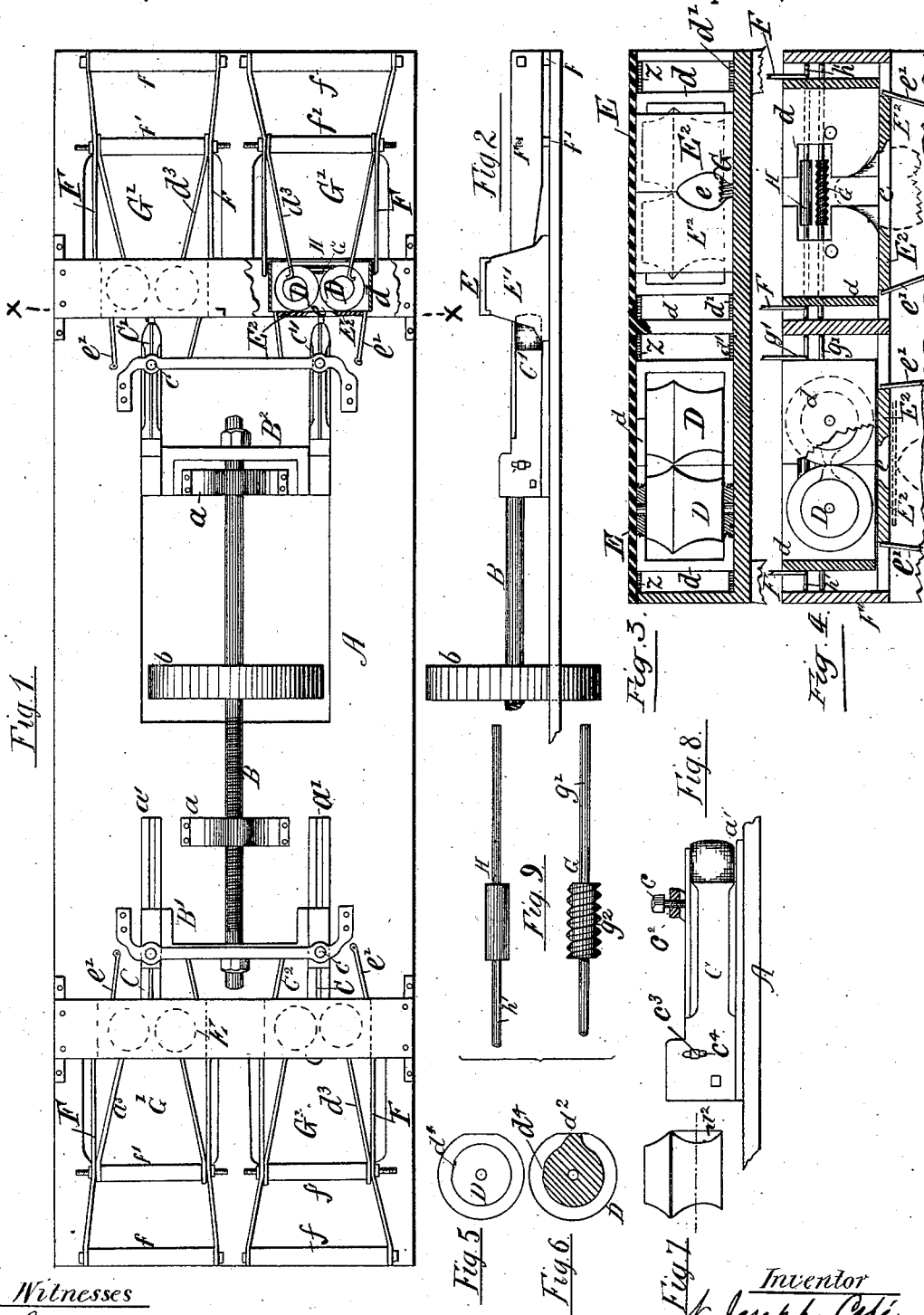


(No Model.)

N. J. COTÉ. HEEL STIFFENER MACHINE.

No. 304,912.

Patented Sept. 9, 1884.



Witnesses

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NAPOLEON JOSEPH COTÉ, OF MONTREAL, QUEBEC, CANADA.

HEEL-STIFFENER MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,912, dated September 9, 1884.

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To all whom it may concern:

Be it known that I, NAPOLEON JOSEPH COTÉ, of the city of Montreal, in the District of Montreal and Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Apparatus for Forming Heel Counters or Stiffeners; and I do hereby declare that the following is a full, clear, and exact description of the same.

10 The present invention relates to improvements in heel-counter machines, and, in part, more especially to that class where shaped rollers are used in place of block-dies as the matrices.

15 The improvements have for their object economy in construction and to attain efficiency with certainty and rapidity in operation. I propel the punches by the revolution of a screwed shaft working in threaded bearings and having cross-heads, to which the punches or formers are attached; but the invention embodies certain other novel features of particular value in the formation of a perfect heel-counter or stiffener, which are hereinafter described and specifically claimed.

25 For full comprehension of the improvements, reference must be had to the accompanying drawings, forming part of this specification.

30 Figure 1 represents a plan view of my machine constructed with four sets of formers. Fig. 2 is a side elevation of part of same. Fig. 3 is a transverse sectional elevation (enlarged) taken on line *xx*, Fig. 1. Fig. 4 is a sectional plan of Fig. 3. Figs. 5, 6, and 7 are respectively detail plan, section, and elevation of one of the forming-rollers. Fig. 8 is a detail view of puncher or former. Fig. 9 is a detail view of rollers for forming upturn.

40 Similar letters of reference indicate like parts.

Letter A represents the bed or frame of the machine, of oblong or other desired shape, and of suitable strength. On its upper side are two or more bearings, *a a*, for a screw-shaft, B, upon which is mounted a pulley, *b*, around which a belt is passed for rotating said shaft. This shaft is represented in the drawings as threaded only at one end, as I have found that this answers the purpose; but 50 I may cut threads at both ends and mount

extra pulleys upon it, as will be readily understood, and thread the bearings *a a* accordingly. To this shaft, at both ends, are attached cross-heads B' B', to which are bolted the punches or formers C C' C'. Of these, four 55 are shown; but of course two or more may be used, as desired, according to the number of counters or stiffeners to be made at each stroke. These cross-heads and punches slide in grooves or ways *d' d'*, formed on the wood frame A, 60 and the punches are so attached to the cross-heads that their front ends may be elevated or depressed in order to provide for different thicknesses of leather in the upturn of the counter. This is accomplished by adjusting 65 a set-screw, *c*, working through a strap, *c'*, bolted to the frame and crossing the punches, as seen in Figs. 1 and 8, and also adjusting a set-screw, *c'*, working in an elongated slot, *c'*, in the rear end of the punch. 70

D D D represent rollers of the shape shown in detail in Figs. 3, 6, and 7. The spindles of these are securely but loosely let into three-sided frames or boxes *d*. (Shown more fully in Figs. 3 and 4.) As seen in Figs. 3, 4, 5, 6, and 75 7, each of the rollers D has a projection, *d'*, formed on it, concave on its front side, so that when the punch or former carries the blank forward the projections *d'* of two rollers are close together and present a curved recess of 80 the same contour as the front end of the punch, into which the blank is forced, and its front end pressed into the proper shape before the rollers D commence to rotate, suitable springs, *d'' d''*, (fastened at one end to any 85 convenient part of the frame,) pressing on a flattened surface, *d'*, on each roller and giving the required resistance while the front of the counter is being formed as above. The frames or boxes *d* are let into grooves *d'* in the bed 90 A, so as to move therein, as shown in Fig. 3. To keep the frames *d* in proper position, a plate, E, is placed over same and supported at the ends by the standards E' E', which in turn are securely fastened to or cast in one 95 with the bed-plate A. The lower surfaces of the plates E are recessed, as well as the bed-plate A, (shown more particularly in Fig. 3 at *z*.)

Immediately in front of each pair of boxes 100

d, and sliding in the same manner, but independently, are two flat gates, *E*² *E*², with an opening or orifice, *e*, at their joints to admit the punch. These gates are for the purpose of guiding the blank straight toward the forming-rollers *D D*, and the orifice *e* in same will offer the first resistance to the punch carrying the blank, and bends the latter in such a manner that it cannot slip to one side or the other before or while it is acted upon by the rollers *D*. These gates have pressure-springs *e' e'* at either side to give the necessary resistance as the punch passes between them, and to throw said gates back into place when the punch recedes.

To give pressure to the rollers *D D* when the punch *C* forces its way between each pair, the ends of strong steel springs *F F* press against the outside of the boxes *d*, and these springs are securely fastened near their outer extremities to the standards *f f*, and these in turn are secured to the bed-plate *A*, or may form part of the same. The standards *f* are furnished with screwed projections and nuts, so that the pressure of the springs may be regulated.

Between each set of springs, and immediately behind each pair of rollers *D*, an opening, *G'*, is made in the bed, through which the finished counters can fall.

To form the upturn of the heel counter or stiffener, two rollers, *G* and *H*, are carried in the lower part of the boxes or frames *d* in such manner that part of these rollers will project slightly above the inner face of the box. These upturn-rollers are of the construction shown in detail in Fig. 9—viz., that marked *G* (being the first which the counter-blank strikes as it passes between the rollers *D*) has a deep thread, *g'*, cut upon its central part, which will crease or indent that part of the blank which is turned up, and thus allow it to assume the proper curve, while the roller marked *H* is plain on its surface and serves to flatten the part so creased and curved, and thus complete the upturn. Both of these rollers have long spindles *g' h'*, which project through the sides of the boxes *d d* and abut against the standards of the bed-plate, so as to prevent any end motion, and keep the operating-surfaces of the upturn-rollers always in their proper place, Fig. 4. The boxes *d d* slide freely without disturbing these rollers.

The operation of my machine will be clearly understood from the foregoing and from the drawings; but I may say that when a belt (driven from a counter-shaft) is placed over

the pulley *b* the revolution of the screwed shaft will force one set of punches *C* between the rollers at that end of the machine, thus forming a counter with each punch.

By means of a twisted belt and fast and loose pulleys on the counter-shaft, or by any other convenient mechanism, the shaft *B* will be rotated in the opposite direction, and draw back the first set of punches, and force those, *C*, at the other end forward between their rollers and form another lot of counters, and so on.

The blanks are fed in front of the gates *E*² *E*² by hand or any suitable automatic device.

Reference is hereby made to my application for patent on heel-stiffener machine, filed March 16, 1883, No. 88,404, and I do not herein claim the matter shown in that application.

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

1. In a machine for forming heel counters and stiffeners, the combination, with the bed *A*, of the revolving screw-threaded driving-shaft *B*, having a belt-pulley, *b*, the cross-heads *B'* *B'*, connected to opposite ends of the shaft, and punches or formers connected to the cross-heads, substantially as described.

2. In a machine for forming heel counters and stiffeners, the combination, with a pair of rollers, *D D*, and their boxes *d d* and springs *F*, of the gates *E' E'*, having central orifice, *e*, and springs *e'*, arranged and operating substantially in the manner and for the purpose described.

3. In a machine for forming heel counters and stiffeners, the rollers *D D*, having projections *d'*, curved on their face, so as to form front of counters, in combination with springs for opposing the rotation of said rollers, and a punch or former, substantially as specified.

4. In a machine for forming heel counters and stiffeners, the combination, with a punch or lower roller, *D D*, and sliding boxes *d d*, of the threaded roller *G* and plain roller *H*, for forming the upturn, substantially as specified.

5. In a machine for forming heel counters and stiffeners, the punch or former having elongated slot *C'* and set-screw *c'*, in combination with its cross-head and the strap *c'*, having set-screw *c*, substantially as and for the purpose described.

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