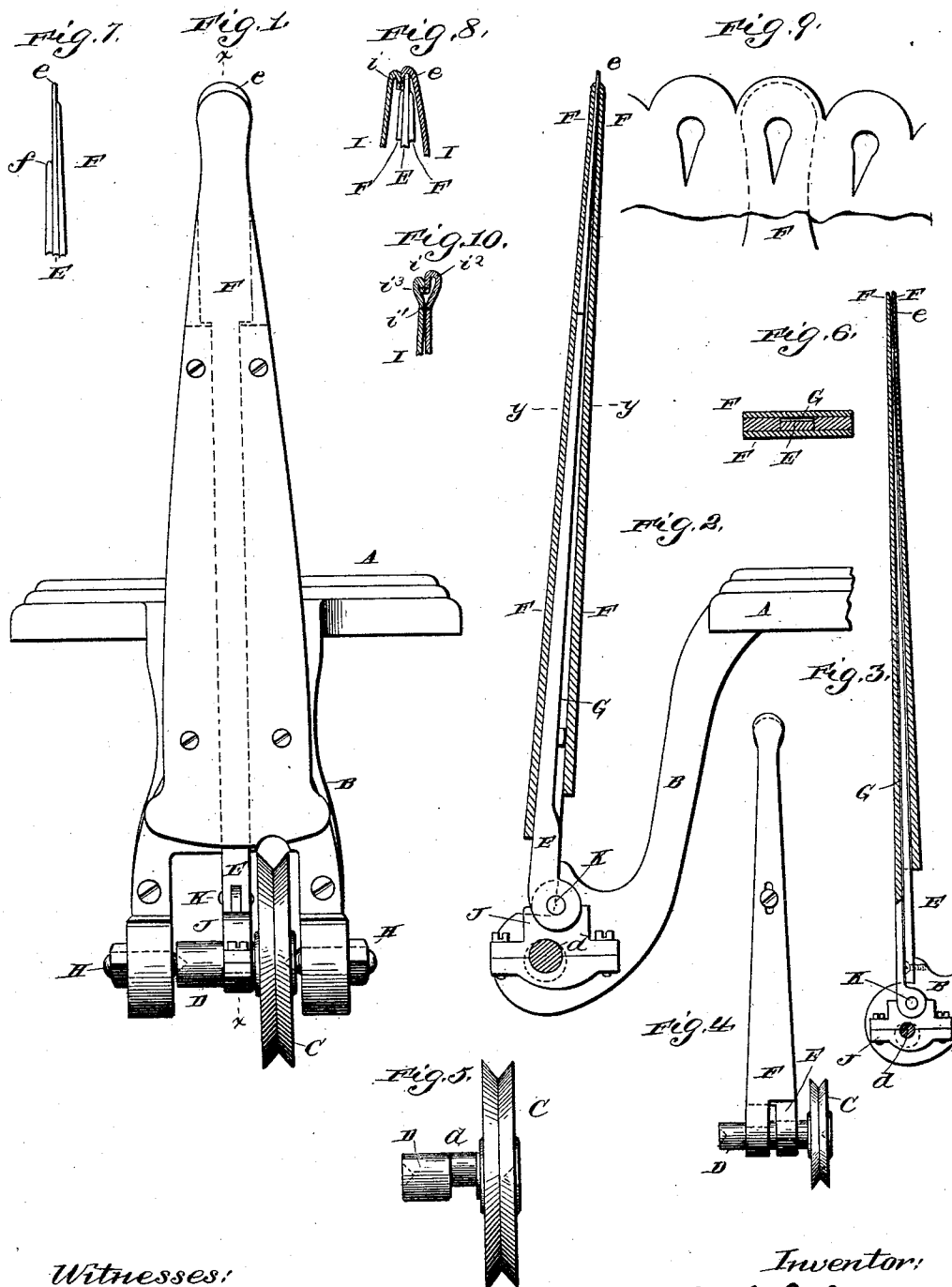


(No Model.)

A. J. SCHMIEDL.
LEATHER BEADING MACHINE.

No. 472,609.

Patented Apr. 12, 1892.



Witnesses:

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ANTON J. SCHMIEDL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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LEATHER-BEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 472,609, dated April 12, 1892.

Application filed April 12, 1888. Serial No. 270,441. (No model.)

To all whom it may concern:

Be it known that I, ANTON J. SCHMIEDL, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Leather-Beading Machines, of which
5 the following is a specification.

My invention relates to machines for beading leather in general, and is particularly adapted to use in the manufacture of boots and shoes.

It consists of certain improvements, which are fully set forth in the following specification and illustrated in the accompanying drawings, which form a part thereof.

15 In the manufacture of boots and shoes and other articles in which two pieces of leather are sewed together it is customary to turn the pieces of leather inside out over the seam thus made to cover the rough edge, and the leather
20 is then pushed out at this seam to present an even edge and subsequently hammered and sewed. This is the operation known in the art as "beading;" and it is to accomplish this effectively and speedily that my invention is
25 designed. After the edges have thus been pushed out or beaded it is usual to flatten them down by hammering and ultimately sewing a line of stitches close to the edge; but my invention is concerned only with the
30 former operation.

The state of the art prior to my invention is illustrated in Letters Patent No. 251,789, of January 3, 1882, granted to James McGuigan, in which is shown a fixed arm having an
35 opening at its end of sufficient size to admit the seam of the leather which is to be turned. Within this fixed arm is a pusher connected to a lever, which is operated either by foot or hand to project forward the pusher, and thus
40 turn the leather. This machine would not accomplish the object of my invention, which is to push out the leather on one side of the seam to form the beaded appearance and not to push out the seam itself.

45 My improvement requires a rapid reciprocating movement from the pushing arm or blade, and the leather is worked over the stationary part by the movements of the hands in opposition to the action of the reciprocating
50 ing blade.

In the drawings, Figure 1 is a front elevation of my improved beading-machine. Fig. 2 is a side sectional view of the same through the line *xx* of Fig. 1. Fig. 3 is a similar view, on a smaller scale, showing a modification of
55 my invention. Fig. 4 is a front elevation, on a smaller scale, of another modification. Fig. 5 is a detailed view of the detached operating-wheel and cam or eccentric mechanism. Fig. 6 is a cross-sectional view of the beading
60 blades or arms upon the line *yy* of Fig. 2. Fig. 7 is a detailed view of a modification of the beading blades or arms at their ends. Fig. 8 is a cross-sectional view of a piece of leather, showing the operation of my machine in beading.
65 Fig. 9 is a plan view of the same, and Fig. 10 is a cross-sectional view of the same after it has been beaded and sewed.

A is the frame or support of the machine by which it may be secured to a table and is
70 provided with an arm or bracket B.

C is the operating-wheel and may be provided with a band connecting with a suitable power-wheel, or any other means may be employed to operate it or its shaft. This wheel
75 is secured upon a shaft D, which is loosely journaled in the bracket B of the frame. I prefer to journal it, in the manner shown in the drawings, upon pin-bolts H, as this method greatly reduces the frictional resistance and
80 allows for adjustment to prevent lost motion; but of course this is a mere detail of construction and not a limitation of my invention. A portion of this shaft D near the wheel C is
85 formed into an eccentric or cam part *d*, upon which is bolted or otherwise secured eccentric-strap J, to which is hinged at K the central reciprocating arm or beading-blade E, the extremity of which I prefer to make into a
90 flattened part *e*, and in the working of seals—such as are shown in Fig. 9—this extremity should preferably be made rounded, as it is shown in the drawings.

F is an upright arm consisting, preferably, of two parts secured together and having a
95 central slot or guideway G extending through or between them for the passage of the arm E in its reciprocations up and down. This arm F is rigidly secured to the bracket B, so that it remains motionless during the oper-
100

ation of the machine; but in the modifications of my invention the arrangement may be different, as is hereinafter explained.

The pieces of leather I, being sewed together and turned over on the seam *i*, are placed over the end of the arm F, which is preferably rounded to correspond to the blade end *e*. The machine is put into operation and the extremity *e* of the arm E, which is normally just below or even with the ends of the arm F, reciprocates rapidly up and down into the bend formed by the leather and pushes it out, as shown in Figs. 8 and 9, forming the parts *i*² and *i*³. When this operation is performed in only one bend of the leather, as the edges of boots and shoes, it is made into the form illustrated in Fig. 10, with part *i*² projecting beyond part *i*³. The seam of the leather is now ready for the hammer, and after being hammered by hand or machine the seam is sewed with a line of stitches *i*⁴ near the edge, making the bead *i*³ more prominent.

In the old way of beading leather it was hard work on the girl's hands pulling it over the fixed blade or beading-iron, and the operation was also slow. In my case, however, I cause the rapidly-reciprocating blade end *e* to push up the bead and the girl has simply to hold the leather in position over the arm F, so as to be acted on by the part *e*. If she holds steadily on to the leather, the reciprocations of the part *e* will be so rapid that the leather must give, assuming the desired form, rather than that the hands shall be drawn up and down. The work is far easier for the operator and the finish produced is more uniform.

In the modification in Fig. 3 the arm E is rigidly secured to the bracket B by a screw or otherwise, if desired, and the arm F hinged at K to the eccentric-strap J or the eccentric *l* of the shaft D, so that this arm reciprocates, while the arm E remains motionless, producing substantially the same effect as in the former case.

In the modification of the invention in Fig. 4 the shaft D is provided with two cam parts *d*, to which the arms E and F are respectively journaled, and in this case both of the arms will reciprocate, and the cam portions *d* are arranged diametrically opposite to produce an opposite reciprocation. If desired, one of the sides of the arms F may be cut away, as at *f* in Fig. 7, to make the end over which the leather is placed less thick, and the rear part of arm F gives a support for the operator's hands in holding the leather.

It is evident that in all of these modifications the same general principle is carried out—to wit, a relative reciprocation between the parts E and F, so that the part *e* is reciprocated beyond the part F, or vice versa. It is immaterial whether the reciprocations are imparted by the eccentric device shown or by any other suitable mechanical device, of which a large number could be readily adapted to

the invention, and it is also immaterial to my invention, when more broadly considered, whether the part *e* recedes below the end of the arm F or not, though I claim this specific species as a part of my invention. The main feature is to provide a suitable pushing-out device adjacent to act upon the leather without particular action of the operator's hand—that is to say, a device which acts upon the leather in contradistinction to a device which is acted on by the leather. It is self-evident that the important parts of the arms E and F are the free or outer ends or blade parts, or those parts which act upon the leather.

I do not limit myself to the mere details of construction hereshown, as they may be manifestly varied in many ways without departing from the principles of my invention.

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

1. In a leather-beading machine, the combination of a fixed or stationary arm adapted to support the leather, a flat movable blade fitting closely against and guided on said fixed arm, and power mechanism, substantially as shown, to positively, uniformly, and rapidly reciprocate said movable blade longitudinally above the extreme end of the fixed or stationary arm.

2. In a leather-beading machine, the combination of a fixed or stationary arm adapted to support the leather, a flat movable blade fitting closely against and guided on said fixed arm and normally even with the end of said fixed arm, and power mechanism, substantially as shown, to positively, uniformly, and rapidly reciprocate said movable blade longitudinally a short distance beyond the extreme end of the fixed arm, but never below it.

3. In a leather-beading machine, the combination of a fixed or stationary arm to support the leather, a flat movable blade fitting closely against said fixed arm, normally having its end even with the end of the fixed arm, and guided in its movements upon said fixed arm, a rotary shaft, and an eccentric operated by said shaft to impart to the movable blade a positive, uniform, and rapid longitudinal reciprocation a short distance beyond the extreme end of the fixed arm, but never below it.

4. In a leather-beading machine, the combination of a flat stationary blade for supporting the leather, a flat rapidly-reciprocating blade having a short reciprocation and arranged parallel to and against the stationary blade, a rotary shaft, and an eccentric operated by said shaft to impart to the reciprocating blade very rapid, short, and uniform longitudinal reciprocations above the extreme end of the stationary blade.

5. In a leather-beading machine, the combination of the blade F, the reciprocating blade E, having the flat end *e*, the shaft D,

having the eccentric *d* and power-wheel C, and a connection between the eccentric and blade E.

6. In a machine for beading leather, the
5 combination of a fixed arm to support the leather, a shaft journaled below said fixed arm, having an eccentric or cam portion, a movable arm fitting closely against said fixed arm at its free end and carried by the ec-
10 centric portion of the shaft, and means to ro-

tate said shaft to rapidly, positively, and uniformly reciprocate said movable arm longitudinally a short distance beyond the extreme end of the fixed arm.

In testimony of which invention I hereunto 15
set my hand.

ANTON J. SCHMIEDL.

Witnesses:

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ERNEST HOWARD HUNTER.