J. H. NANGLE.

BEADING MACHINE.

APPLICATION FILED SEPT. 30, 1911.

1,024,219.

Patented Apr. 23, 1912.

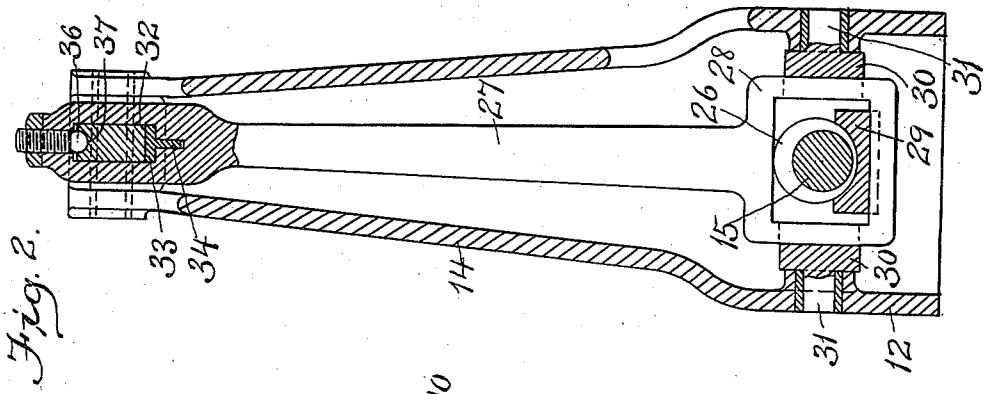

Fig. 2.

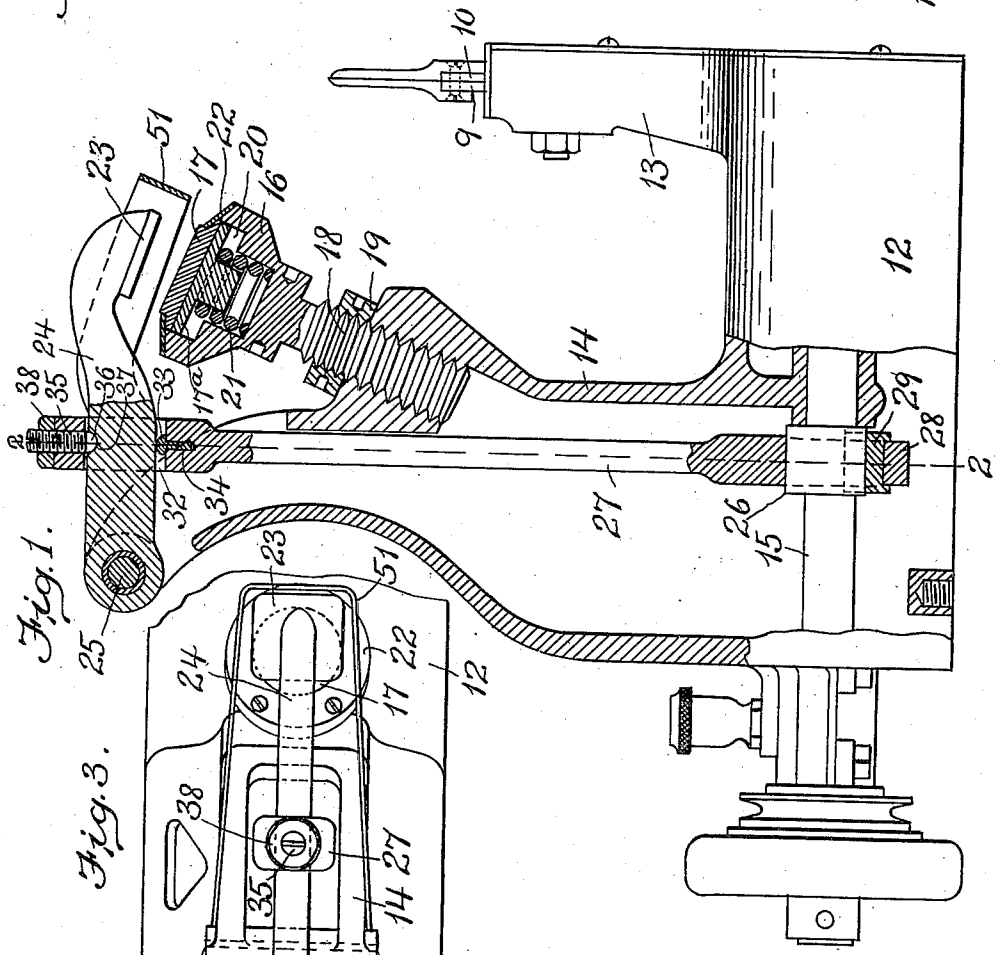

Fig. 1.

Fig. 3.

Witnesses:
G. R. Ronkstine
Harry L. Allen.

Inventor:
James H. Nangle
by Wright Brown Quinby & May
Attys.

UNITED STATES PATENT OFFICE.

JAMES H. NANGLE, OF LYNN, MASSACHUSETTS.

BEADING-MACHINE.

1,024,219. Specification of Letters Patent. Patented Apr. 23, 1912.

Application filed September 30, 1911. Serial No. 652,041.

To all whom it may concern:

Be it known that I, JAMES H. NANGLE, a citizen of the United States, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Beading-Machines, of which the following is a specification.

This invention relates to machines for forming a well defined fold or crease on parts of uppers of boots and shoes preparatory to stitching together the folded parts along a line close to and parallel with the fold. A beading machine used to form this fold is usually provided with two flat sided rubbing or beading tools which are located side by side and oscillate in parallel planes, these tools being inserted between the upper and lining and reciprocated in opposite directions to partially form the fold in the upper, the machine being also equipped with a bed or anvil and a reciprocating hammer which coöperate in flattening down the sharply defining the fold.

My invention has for its object to provide certain improvements in the hammering mechanism of a beading machine, and it consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings which form a part of this specification:—Figure 1 represents a partial side elevation and partial longitudinal section of a beading machine embodying my invention; Fig. 2 represents a section on line 2—2 of Fig. 1; Fig. 3 represents a top plan view of a portion of the machine.

Similar reference characters indicate the same or similar parts in all the figures.

The frame of the machine comprises a base portion 12, a post 13 through which the beading levers 9 and 10, extend, and a hollow arm or standard 14 which supports the hammer bed or anvil and the hammer. Journaled in bearings in the base portion of the frame is a horizontal driving shaft 15 provided with cams which actuate the beading levers and the hammer, as described hereinafter.

16 represents a casing or holder for a hammer bed or anvil 17, said holder being provided with a screw-threaded shank 18 engaged with a threaded orifice in the arm or standard 14 and locked at any desired adjustment by a jam nut 19. The holder 16 is provided with a socket 20 in which the bed 17 is movable, a spring 21 being provided which normally forces the bed outwardly against a stop flange 22 attached to the holder. The bed is preferably composed of an outer layer or facing of relatively compressible material such as vulcanized fiber, and an inner metallic body portion 17^a.

23 represents a hammer formed on a lever 24 which is pivoted at 25 to ears on the arm 14. The hammer is oscillated by means of a cam 26 affixed to the shaft 15 and a connecting rod 27 engaged as hereinafter described with the lever 24 and provided with a frame or strap 28 which surrounds the cam 26, a bearing block 29 of relatively antifrictional material such as vulcanized fiber being preferably interposed between the cam and one side of the frame, as shown by Figs. 1 and 2. The ends of the frame 28 are engaged with guides 30 having trunnions 31 fitted to turn in bearings in the frame of the machine, the guides being therefore adapted to rock or oscillate slightly as required by the slightly curvilinear movement of the upper end of the connecting rod.

The upper end portion of the connecting rod 27 has a slot 32 through which the hammer lever 24 passes. At the lower end of the slot is a hardened steel bearing 33 having a rounded upper surface in contact with the lower side of the lever 24, said bearing having a shank 34 inserted in a socket in the rod 27. 35 represents a screw engaged with a threaded socket in the upper end of the rod 27, said screw projecting into the slot 32, and having a convex terminal 36 which enters a socket 37 formed for its reception in the upper side of the lever 24. Provision is thus made for engaging the rod 27 with the lever 24 in such manner as to cause the rod to oscillate the lever, without weakening the lever by forming a hole through it for the reception of a pivot pin connecting it with the rod. It has been found in practice that the lever, if provided with a hole between its upper and lower sides to receive a pivot pin, is liable to break at the point where it is connected with the rod 27. Moreover, such pin is reduced in diameter by wear and enlarges the hole in the lever, so that eventually there is considerable lost motion and rattle. These objections are avoided by the above-described engagement of the rod with the top and bottom sides of the lever, the lever being solid and having no pivot hole, and the screw 35

being adjustable to compensate for wear and provided with a lock nut 38 to secure it at any adjustment.

By forming the hammer on a pivoted lever and connecting the lever with the driving mechanism at a point between the hammer and pivot or fulcrum of the lever, I am enabled to rapidly oscillate the lever, giving it a positive movement in both directions, with less jar, vibration and noise of operation, than would be the case if the lever were extended outwardly from the fulcrum 43 and connected with the driving mechanism at a point outside said fulcrum.

The adjustability of the hammer bed enables it to be adapted to the thickness of the material and the yielding support of the hammer bed, while the spring 21 prevents injury to material of maximum thickness.

The construction of the machine is such that it is adapted to operate very steadily, the noise and jar being reduced to a minimum.

51 represents a guard which is arranged to prevent injury to the fingers of the operator by the hammer.

The bearing 33 is hereinafter referred to as a lower bearing and the terminal 36 as an upper bearing.

I claim:—

1. In a machine of the character stated, a frame having a standard, a driving shaft journaled in the frame, a hammer bed mounted on the standard, a lever fulcrumed at one end on the standard and having a hammer at its opposite end, a cam on the driving shaft and a connecting rod engaged at one end with the cam and having a slot in its opposite end through which the lever passes, and opposed bearings for the lever located in said slot, one of said bearings being adjustable to compensate for wear, and provided with means for locking it to the lever.

2. In a machine of the character stated, a frame having a standard, a driving shaft journaled in the frame, a hammer bed mounted on the standard, a lever fulcrumed at one end on the standard and having a hammer at its opposite end, a cam on the driving shaft and a connecting rod engaged at one end with the cam and having a slot in its opposite end through which the lever passes, a lower bearing for the lever in the lower end of the slot, and a screw adjustably engaged with the lever and projecting into the upper end of the slot, said screw having a terminal constituting an upper bearing for the lever, and a lock nut whereby the screw may be secured in any position to which it may be adjusted.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JAMES H. NANGLE.

Witnesses:
ARTHUR H. BROWN,
J. H. CHURCHILL.