

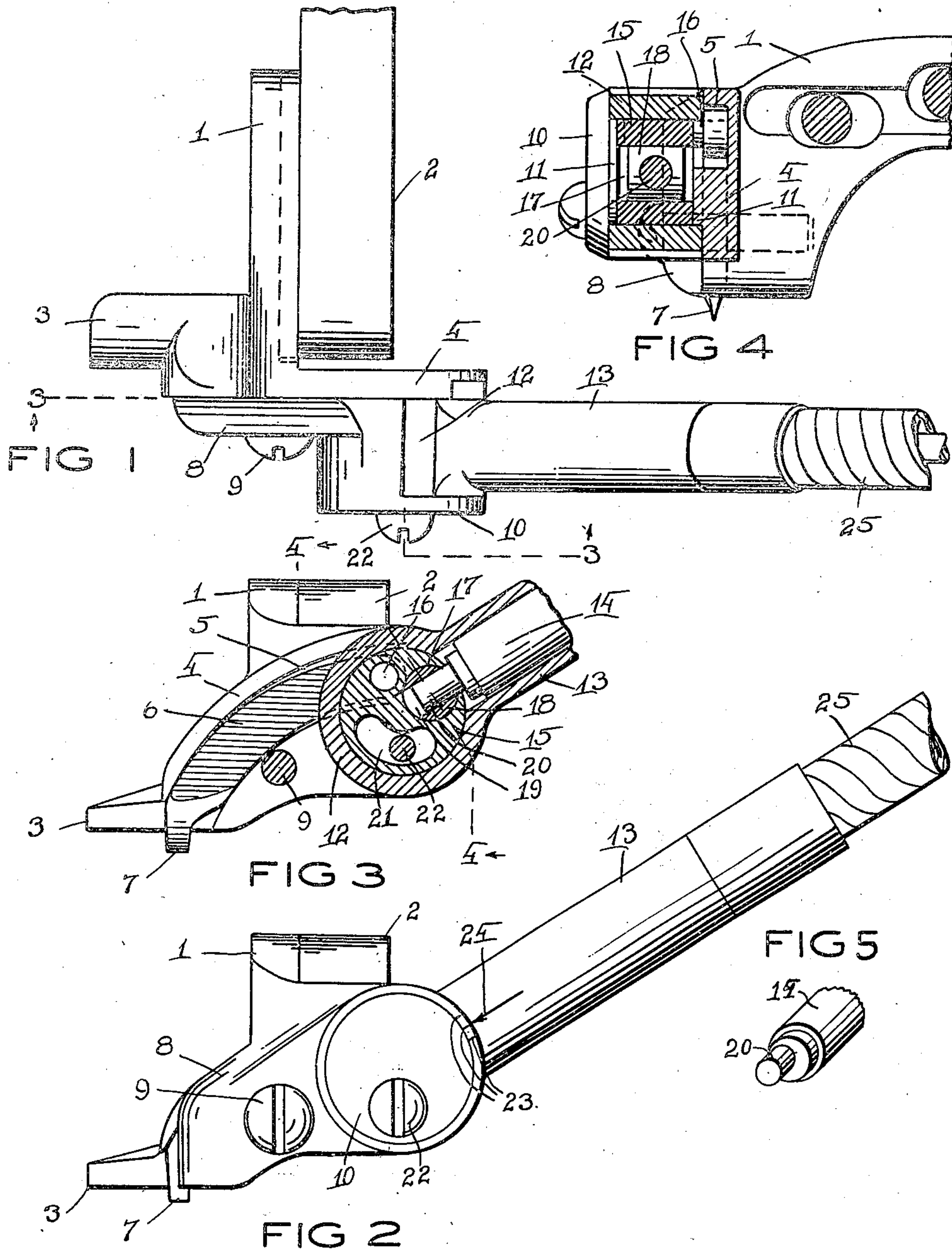
March 7, 1944.

J. FERRARA

2,343,501

CHANNEL CUTTER ATTACHMENT FOR STITCHING MACHINES

Filed Jan. 10, 1941



BY

INVENTOR
JOHN FERRARA
Eric Schinger
ATTORNEY

UNITED STATES PATENT OFFICE

2,343,501

CHANNEL CUTTER ATTACHMENT FOR STITCHING MACHINES

John Ferrara, Rochester, N. Y.

Application January 10, 1941, Serial No. 373,953

6 Claims. (Cl. 112-45)

This invention relates to channel cutter attachments for shoe repair stitching machines and has for its object to provide a novel operating mechanism for the channel cutter of the attachment.

This and other objects and attendant advantages of this invention will become more readily apparent from the detailed description thereof which follows, reference being had to the accompanying drawing in which

Figure 1 is a top plan view of the channel cutter attachment.

Figure 2 is a side elevation thereof.

Figure 3 is a vertical sectional view of the attachment taken on the line 3-3 in Figure 1.

Figure 4 is a vertical sectional view of the attachment taken on the line 4-4 in Figure 3.

Figure 5 is a detail end perspective view of the crank which operates the cutter of the attachment.

My present invention is an improvement over the channel cutter attachments illustrated in my prior Patents No. 2,148,546 and No. 2,197,796 and is adapted to provide a novel mechanism for the movement of the cutter and for the adjustment of the cutting depth thereof.

As illustrated in the figures of the drawing, the attachment comprises the bracket 1 which is adapted to be mounted for horizontal adjustment on the bracket 2 of a stitching machine. The bracket 1 carries at the bottom the presser foot 3 which projects forwardly thereof and is adapted to have the sole of a shoe held thereagainst for the channeling and stitching operation thereon.

A vertically arranged wall 4 is provided at the end of the bracket 1 transversely thereto and in this wall is formed the curved guide channel 5 which terminates adjacent the rear of the presser foot 3. A cutter 6 having a curved shank is adapted to reciprocate in the guide channel so as to give its cutting edge 7 a substantially vertical chopping movement in and out the end of the cutting channel adjacent the presser foot as illustrated in Figures 2, 3 and 4.

A cover plate 8 is clamped over the wall 4 by the clamping screw 9 to hold the cutter in the guide channel. This cover plate carries a semi-cylindrical wall member which extends at right angles to the cover plate away from the wall 4 so as to spacedly support a circular flange 10 also carried by said cover plate 8 from the wall 4 and form a cradle having a semi-cylindrical connecting wall between the flange 10 and the wall 4.

The flange 10 and the wall 4 are each provided

with a short boss 11 axially in line with each other so as to support the cylindrical housing 12 in the semi-cylindrical cradle for pivotal adjustment therein. The cylindrical housing has a radially extending sleeve 13 and in it is mounted to rotate the crank shaft 14.

Mounted to oscillate in the cylindrical housing 12 is the cylindrical rocker 15. This rocker carries at one end the crank pin 16 for engagement and movement of the cutter 6. Extending longitudinally of the rocker, adjacent the periphery thereof, is a cylindrical bore 17 and in it is mounted to reciprocate the cylindrical block 18. The latter is provided in the middle with a hole or pocket 19 which is adapted to have the crank pin 20 of the crank shaft 14 engage therein to reciprocate the cylindrical block 18 and thereby cause the cylindrical rocker 15 to oscillate in the housing 12. The oscillation of the cylindrical rocker reciprocates the cutter 6 so that its cutting edge 7 cuts into the sole held against the presser foot 3 with a rapid chopping motion.

The cylindrical rocker 15 is provided with a segmental slot 21 which extends longitudinally thereof to have the clamping bolt 22 pass there-thru. The latter extends from the flange 10 into threaded engagement with the wall 4 so as to clamp the cylindrical housing 12 between them and hold the housing and with it the rocker 15 in adjustable positions relative to the bracket 1 and its presser foot 3. The segmental slot in the rocker provides for a limited adjustment of the cylindrical housing without interfering with the oscillating movement of the rocker. Thus with the same movement of the cutter an adjustment of the cylindrical housing by means of its sleeve in a clockwise direction causes the cutter to be drawn back into its guide channel to decrease the travel of the cutting edge of the cutter out of the end of the guide channel, whereas an adjustment of the cylindrical housing by means of its sleeve in a counterclockwise direction moves the cutter to have its cutting edge move a greater distance out of the end of the guide channel and thus increase the depth of the channel cut thereby. In practice the clamping bolt 22 is tightened to permit an adjusting movement of the cylindrical housing by forcing the sleeve either up or down. The pressure exerted by the clamping screw is sufficient to hold the cylindrical housing in any of its adjusted positions. Suitable graduations 23 are provided on the periphery of the flange 10 to indicate the cutting depth of the cutter by the position of the pointer 24 relative to one of these graduations.

As illustrated in the figures of the drawing the crankshaft 14 is driven by a flexible shaft 25 and this shaft may be connected to any of the rotating members of the stitching machine or separate driving means to provide for the operation of the channel cutter attachment.

The cutter, as illustrated in the figures of the drawing, is arranged to cut a substantially vertical channel into the sole of a shoe, but it can readily be seen that an angular channel may be cut with the same mechanism by simply arranging the cutter for movement in the desired angular direction relative to the sole.

I claim:

1. In a channel cutting attachment for stitching machines the combination of a presser foot, a wall member adjacent said presser foot, a cylindrical housing rotatably adjustable on said wall member, a rocker mounted to oscillate in said housing, crank means engaging said rocker for oscillation in said housing, and a cutter operatively connected with said rocker for reciprocation thereby adjacent to said presser foot.

2. In a channel cutting attachment for stitching machines, the combination of a presser foot, a substantially vertical wall member adjacent said presser foot, a guide channel in said wall member, a cutter shank movable in said guide channel, a rocker mounted to oscillate adjacent said wall member and connected to said shank for reciprocation thereby, a movement transmitting block mounted for endwise movement in said oscillating member and transverse movement with said oscillating member and crank means engaging said block for movement thereby to cause oscillation of said oscillating member and said cutter shank.

3. In a channel cutter attachment for stitching machines having a presser foot, the com-

5 bination of a cylindrical housing rotatably adjustable relative to said presser foot, a rocker mounted to oscillate in said housing, a sleeve member radially projecting from said housing, crank means rotatable in said sleeve member for engagement with and oscillation of said rocker in said housing, and a cutter operatively connected with said rocker for reciprocation thereby on the oscillation by said crank means and for endwise adjustment of said cutter relative to said presser foot on the rotative adjustment of said housing.

4. In a channel cutter attachment for stitching machines the combination of a bracket, a presser foot on said bracket, a curved cutter shank movable endwise in said bracket relative to said presser foot, a cutting edge on said shank substantially at right angles to said presser foot adjacent thereto, a cylindrical housing rotatably mounted on said bracket, a sleeve member radially extending from said housing, a rocker mounted to oscillate in said housing, a crank mounted to rotate in said sleeve in engagement with said rocker, and crank means connecting said cutter shank with said rocker for operation thereby.

5. In a channel cutter attachment for stitching machines the combination as set forth in claim 4 including means for adjustably clamping said housing to said bracket for adjustment of the starting position of the cutting edge of said cutter shank relative to said presser foot.

6. In a channel cutting attachment for stitching machines as set forth in claim 4 in which said rocker is provided with a member axially movable adjacent the periphery thereof, and said crank operatively engages said member for the oscillating movement of the rocker by said crank.

JOHN FERRARA.