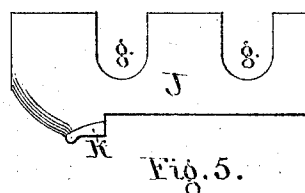
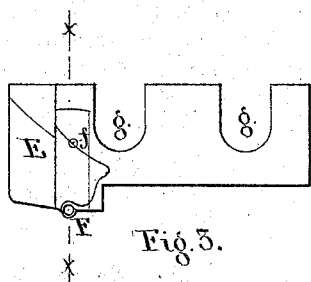
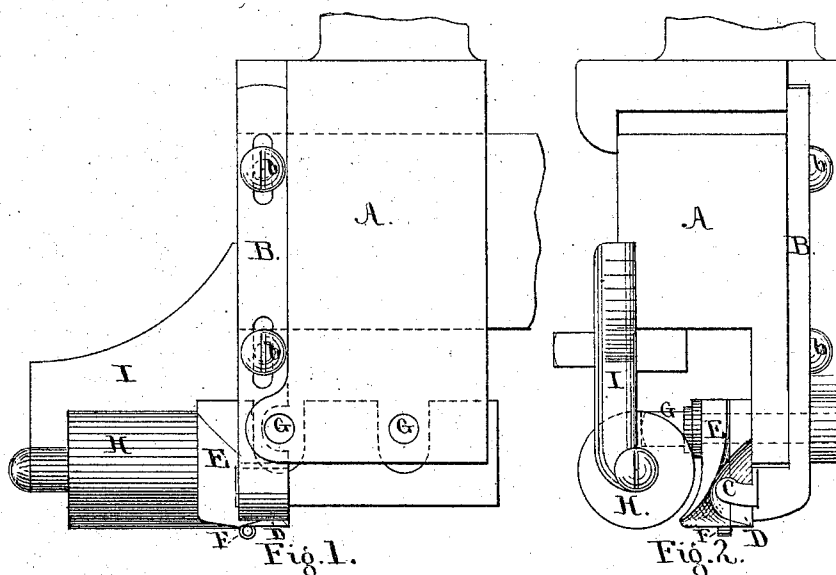


C. C. BALLOU.
Sole Channeling Machines.

No. 141,025.

Patented July 22, 1873.



Witnesses.

Wm. H. Loom

Inventor.

Cyrus C. Ballou

UNITED STATES PATENT OFFICE.

CYRUS C. BALLOU, OF ALBANY, NEW YORK, ASSIGNOR TO "THE EAST NEW YORK BOOT, SHOE, AND LEATHER MANUFACTURING COMPANY," OF NEW YORK CITY.

IMPROVEMENT IN SOLE-CHANNELING MACHINES.

Specification forming part of Letters Patent No. **141,025**, dated July 22, 1873; application filed February 15, 1873.

To all whom it may concern:

Be it known that I, CYRUS C. BALLOU, of the city and county of Albany and State of New York, have invented certain Improvements upon the Channeling-Machine of Joseph B. Johnson, patented July 28, 1863, of which the following is a full and exact description, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a side elevation of the head of the machine; Fig. 2, an end view of the same; Fig. 3, a detached view of the combined groove cutter and plow; Fig. 4, a transverse section of the same at the line *xx*; and Fig. 5, a front view of a plow to be used for turning back the flap upon soles that have been previously channeled in the old and usual way.

The nature of my invention consists in combining, with the tubular and angular cutters of the machine, certain devices for automatically laying back and pressing down the flap of the channel at the same time that the channel and groove are cut, thereby completing, at one operation, the channeling and preparing the soles ready for the sewing-machine. It also consists in constructing the plows as herein described.

As shown in the drawings, A is the head of the machine. B is a guide, attached to the head by means of screws *b b*, which pass through slotted holes in the guide, and allow of its adjustment. Projecting backward from the lower part of the guide a guard, C, is constructed, in the form shown, which enters into the space formed in the angular knife and plow, and serves to give direction to the fold of the flap as it is passed backward from the knives. D is the angular knife, which requires to be adjusted at the proper distance below the foot of the guide B, for producing the required thickness of the flap. E is the plow, having a peculiarly-curved surface, as shown, by means of which the turning back of the flap is completed. It has a recess formed in its face, into which is inserted the tubular knife or groover F, for cutting the grooves for containing the stitches that secure the sole to the shoe. The groover upon its face is made to

conform to the curved form of the face of the plow, and is retained in its position by the pin *f*. G G are bolts for securing to the head A the knife D and plow E, in both of which provision is made for their proper adjustment by means of the slotted holes *g g*. H is a roller, attached to the head of the machine by means of the bracket I. It stands directly behind the plow, and presses down the flap, after it has been turned back by the plow, in such a thorough manner as to prevent its being caught by the needle of the sewing-machine while attaching the sole to the shoe. This roller also serves as an upper feed-roller, thereby enabling me to dispense with the roller usually placed upon the machine for that special purpose. The plow J, shown in Fig. 5, is made without a grooving-knife. It is substituted in the machine for the knife D and plow E, and is intended to be used upon soles that have been channeled and grooved in the old and usual way, for turning back the flaps so as to pass under the roller H. It is provided with the projecting point K, which enters the groove for the purpose of removing the core left by the groover when previously channeled, as above stated, and at the same time it guides the sole in its proper direction.

By constructing the plow E with a detachable groover, F, as hereinbefore described, I am enabled to make them more perfectly than if made together; and it also has the further advantage of permitting the groover to be renewed at pleasure when it becomes defective from use, or any other cause, without involving the expense of renewing the plow.

The work accomplished by my improvement has heretofore been performed by hand after the soles have been channeled by the channeling-machine, and for this work alone from four to five operatives were required to open and lay back the work done by each channeling-machine. In this way the work was very imperfectly done, the soles being frequently injured by being indented by the hammer used for this purpose.

By the use of my improvement, it will be

readily seen that the same number of soles that could only be channeled and grooved by the machine heretofore, can now be completed ready for the sewing-machine in a more perfect manner, in the same time, and, by dispensing with the services of the extra operatives, at a reduced cost.

I do not broadly claim the use of the angular and tubular knives for the purpose of channeling the soles of shoes, as I am aware that they have heretofore been known and used for this purpose; but

What I claim as my invention is—

1. The combination of the guide B, knife D, and groover F, with the plow E and roller H, when arranged to operate as and for the purpose specified.

2. The plow E having a detachable groover, F, constructed substantially in the manner and for the purpose specified.

3. The plow J having a projecting point, K, as and for the purpose herein set forth.

CYRUS C. BALLOU.

Witnesses:

S. J. HAIGHT,

WILLIAM H. LOW.