(No Model.)

2 Sheets—Sheet 1.

A. F. LITTLEFIELD.

SOLE CHANNELING MACHINE.

No. 261,862. Patented Aug. 1, 1882.

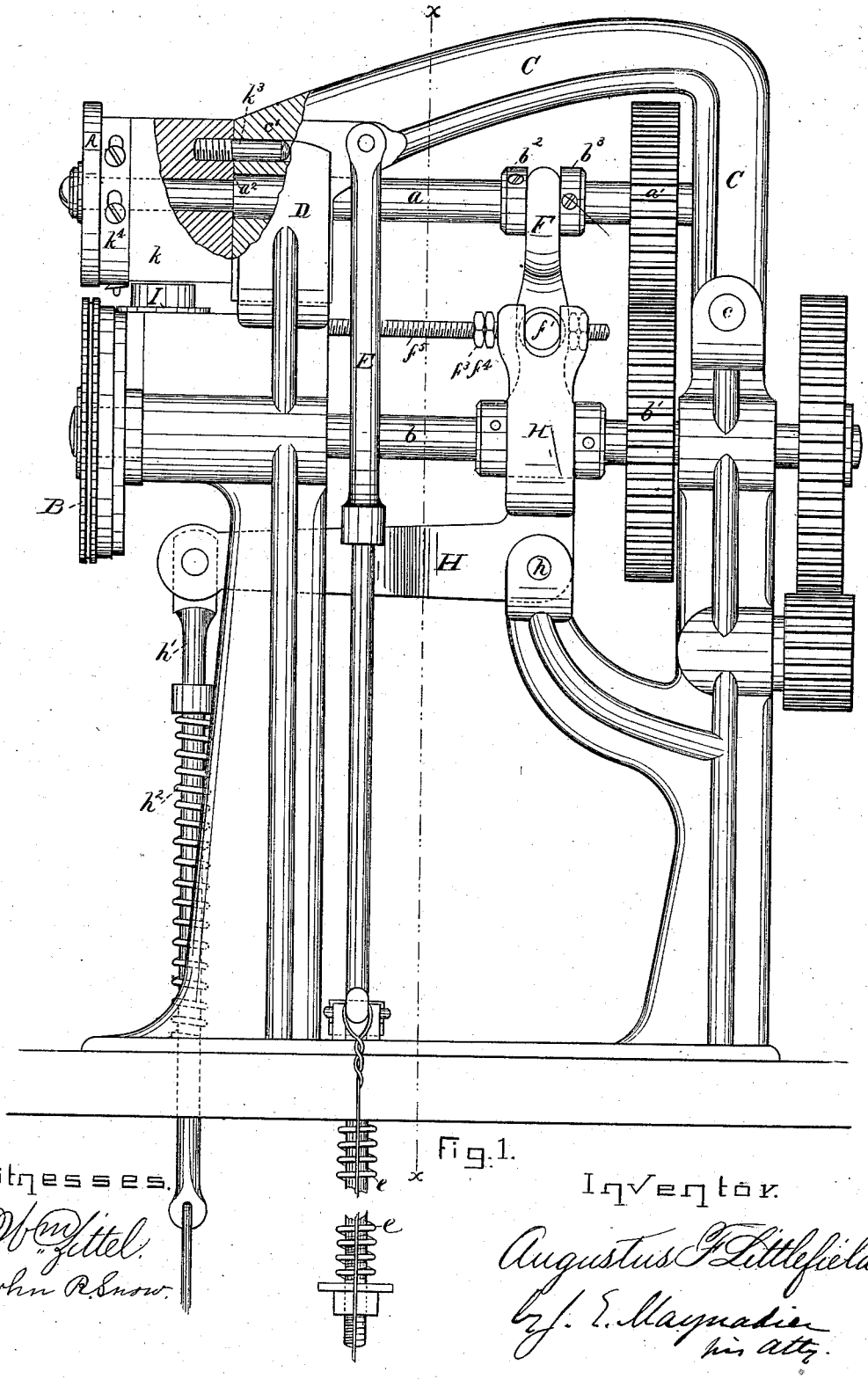

Fig. 1.

Witnesses.
Wm. Littel.
John R. Snow.

Inventor.
Augustus F. Littlefield
by E. Maynadier
his atty.

(No Model.) 2 Sheets—Sheet 2.

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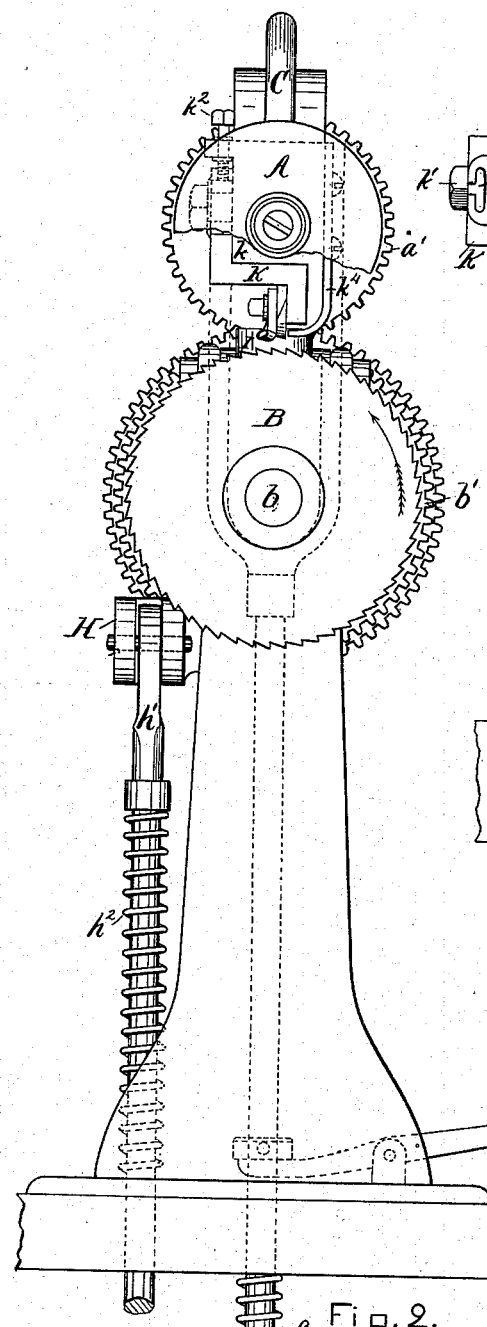

Fig. 2.

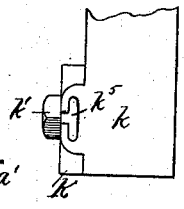

Fig. 4.

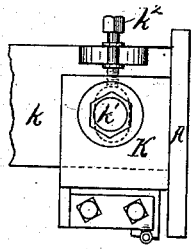

Fig. 5.

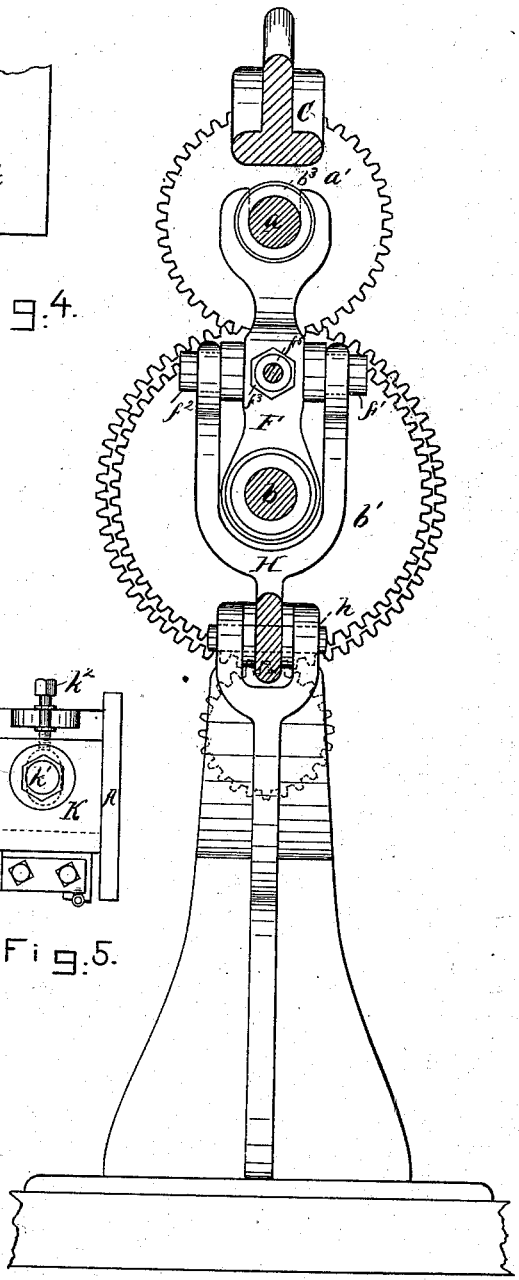

Fig. 3.

Witnesses.

W. Littell

John R. Snow

Inventor.

Augustus F. Littlefield

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his atty.

UNITED STATES PATENT OFFICE.

AUGUSTUS F. LITTLEFIELD, OF LYNN, ASSIGNOR TO THE IMPROVED SOLE SEWING MACHINE COMPANY, OF BOSTON, MASSACHUSETTS.

SOLE-CHANNELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 261,862, dated August 1, 1882.

Application filed February 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS F. LITTLEFIELD, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Sole-Channeling Machines, of which the following is a specification.

My invention relates to improvements in sole-channeling machines in which the sole is guided by its edge and is fed to the knife by being inserted between two revolving feed-wheels; and the object of my invention is to afford facilities for varying the distance of the channel from the edge of the sole without moving the guide or altering the position of the knife in relation to the feed-wheels.

In the accompanying drawings, which illustrate a sole-channeling machine with my improvements applied thereto, Figure 1 is a side elevation. Fig. 2 is a front elevation. Fig. 3 is a sectional view on line *x x* of Fig. 1. Fig. 4 is a plan view of the head. Fig. 5 is a view of the same on the side opposite that shown in Fig. 1.

An upper feed-wheel, A, and a lower feed-wheel, B, are mounted on the ends of the shafts *a* and *b*, which are caused to revolve together by the gears *a' b'*, motion being imparted to the lower shaft, *b*, by any suitable mechanism. The upper shaft, *a*, is mounted in boxes on the arm C and capable of being moved endwise therein. The arm C is pivoted to the frame at *c*, its other end, *c'*, when down, resting in part D of the frame. It is adapted to be raised, when a sole is to be inserted, by raising the rod E, which is attached to a pedal or other suitable device. The spring *e* serves to hold the arm C down in its place when the rod E is released. The lower shaft, *b*, is mounted in boxes on the frame, and has secured to it an arm, F, forked at its top to receive the upper shaft, *a*, and prevented from lateral motion thereon by the two collars b^2 b^3. The arm F has two trunnions, $f' f^2$, which enter slots in the forked lever H, which is pivoted to the frame at *h*, with its horizontal arm extending out to a rod, *h'*, connected to a treadle, by which it is operated. A spiral spring, h^2, surrounding the rod *h'*, keeps the horizontal arm elevated when the pedal is not pressed upon.

The lateral movement of the bar F is regulated by the nuts $f^3 f^4$, working on the screw-threaded rod f^5, which is attached at one end to the frame, its other end passing through a hole in the bar F. By placing these nuts $f^3 f^4$ nearer to or farther from the bar F the extent of its lateral movement is regulated.

An edge-guide, I, is attached to the frame, its distance from the knife determining the distance of the channel from the edge of the sole. The upper wheel, A, is smooth, the lower wheel, B, being provided with teeth. The knife-carrier K consists of a metal plate secured to the head *k* by the screw *k'* passing through a slot in the carrier K.

The knives are fastened to the carrier K, which is vertically adjustable by the screw k^2, and is secured in position by tightening the screw *k'*. A slight horizontal adjustment is provided for by the slot k^5, in which the screw k^2 moves when the carrier *k* is pushed forward or back.

Heretofore it has been necessary to remove the carrier from the head when the knives required adjustment. This is obviated by my improved device, in which the adjustment can be easily and readily effected by the screws and slots. The head *k* is mounted on the end of the shaft *a*, and is moved sidewise when shaft *a* moves endwise by the shoulder a^2. Pins k^3, fast to the head *k*, enter a socket in the end *c'* of the arm C, and serve as guides for the head and prevent it from rotating with the shaft A.

The usual device, k^4, for turning up the flap of the channel, is attached to the head *k* by screws passing through slots to allow a vertical adjustment.

The operation is as follows: The knives and edge-guide I being properly adjusted, the arm C is raised by means of the rod E, thereby elevating the knife and feed-wheel A. The sole is then placed on the feed-wheel B, with its edge against the guide I. The arm C is lowered, the spring on the rod E causing the top feed-wheel, A, to press down on the sole. The shaft *b* is rotated, causing the shaft *a* and both feed-wheels to rotate and feed the sole along under the knives, which cut the channel parallel with the edge of the sole, which is held

in contact with the edge-guide by the operator. When the shank of the sole is reached the operator places his foot on the treadle connected with the rod h' and depresses the horizontal arm of the lever H, thereby causing the upright arm to move sidewise and carry with it arm F, the shafts a b, and the knives and feed-wheels connected to them as far as the nuts f^3 f^4 on the rod f^5 will allow. The edge of the sole being kept against the guide I, and the knives being moved away therefrom, it is evident that the channel will be cut at a correspondingly greater distance from the sole-edge.

I do not claim a stationary guide and a movable knife, as such are shown in Patent No. 173,614, February 15, 1876, to S. T. Gates. I also disclaim an upper feed-wheel made adjustable relatively to the edge-guide, as such is shown in Patent No. 89,818, May 4, 1869, to Henry S. Vrooman.

The main feature of my invention consists in having both the feed-wheels and knife movable, so that when they are moved away from the stationary guide their positions in relation to each other are not changed, and the sole is always held at a point closer to the knife than it can be in any sole-channeling machine heretofore constructed, so far as I am aware.

I claim as my invention—

In a sole-channeling machine, the combination, substantially as hereinbefore set forth, of the shaft a, carrying the feed-wheel A, the knife-carrier K, mounted on the shaft a, as described, the shaft b, carrying the feed-wheel B, the arm F, connecting the two shafts, the stationary guide I, and mechanism, substantially as described, for giving a simultaneous endwise movement to both shafts, as and for the purposes set forth.

A. F. LITTLEFIELD.

Witnesses:
G. B. MAYNADIER,
JOHN R. SNOW.