

S. MOORE.

Crimping the Uppers of Boots and Shoes.  
No. 215,534. Patented May 20, 1879.

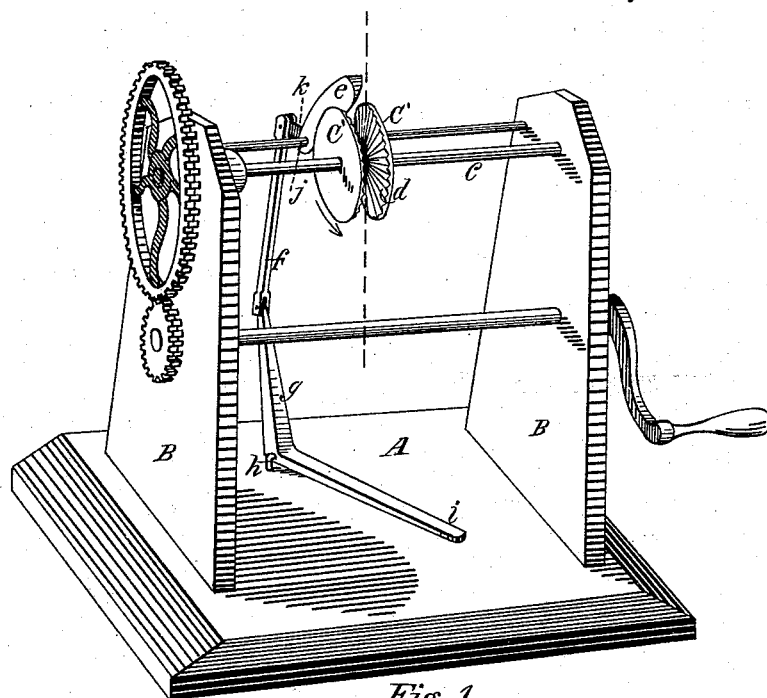


Fig. 1.

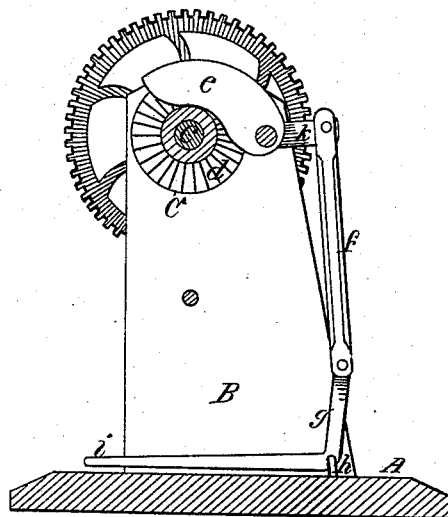


Fig. 2.

Witnesses:  
J. E. Horn  
J. F. Fuller

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# UNITED STATES PATENT OFFICE.

STEPHEN MOORE, OF SUDBURY, MASSACHUSETTS.

## IMPROVEMENT IN CRIMPING THE UPPERS OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **215,534**, dated May 20, 1879; application filed February 17, 1879.

### *To all whom it may concern:*

Be it known that I, STEPHEN MOORE, of Sudbury, county of Middlesex and State of Massachusetts, have invented a new and useful Process of Crimping the Uppers of Boots and Shoes, and improved mechanism for carrying out such process, all of which is fully and plainly set forth in the following specifications and the drawings accompanying the same.

In the manufacture of boots and shoes it is desirable that the vamp or front portion of the upper should be so stretched in certain parts or shortened in others that it will conform to the last. If this operation (technically termed "crimping") is not performed before the boot or shoe is lasted it requires much extra labor in lasting, and the shoe is not usually well fitted to the last.

Hitherto the mechanism and processes employed for crimping have been either so complicated or so slow of operation as to preclude their use on the cheaper grades of shoes.

My process is rapidly performed, and the mechanism is so simple that it is adapted both to the cheaper and the better grades of shoes.

My process consists in compelling the blank to form the arc of a circle along a line through its central part, while the other parts of the blank along lines parallel to said central line are compelled to form arcs of circles of radii gradually increasing as their distance from said central line increases, the action of the mechanism on the blank passing along said lines in the direction of their length.

In the accompanying drawings, in which like letters refer to like parts, Figure 1 is a perspective and Fig. 2 a cross-section, of a device by which I carry out my said process.

In any suitable frame (represented in the drawings by the base A and upright B B) is hung a shaft, C, carrying the grooved wheels or disks C' C'. *e* is a V-shaped block, curved so as to conform substantially to the surface of the groove between the disks C' C'. This block is pivoted at *j*, as shown, and has a rigid arm, *k*, projecting from near its pivotal point at such an angle that by the elevation of the end of such arm the block is depressed into the groove between the disks C' C'.

To the end of arm *k* is connected one end

of a rod, *f*, which is connected at its other end with the bell-crank lever *g*, which is pivoted to the base A at *h*, and of which the arm *i* forms a treadle, the upright part *g* of said bell-crank lever and the connecting-rod *f* being of such length and so disposed that when brought into a straight line by the depression of the treadle *i*, the end of arm *k* on block *e* is raised, and the block *e* depressed into the groove between disks C' C' with great force, the parts *g* and *f* forming what is known as a "knuckle-joint."

The inner surface of the disks C' C' may be corrugated, as shown at *d*, to prevent the slipping of the material when pressed against such surface.

The operation of the machine is as follows: Power being applied to the shaft C through the gears and crank shown, so as to revolve it and the disks C' C' in the direction indicated by the arrows, and the block *e* being in the position shown in Fig. 1, one end of the blank to be crimped is placed beneath the block *e*, and, the treadle *i* being depressed, the block *e* is forced downward, pressing the blank into the groove between the disks, which, by their revolution, carry it with them beneath the block *e*, which forces it to assume a curved form corresponding to the shape of the groove. The pressure may be varied at pleasure by means of the treadle *i*, or entirely removed during the passage of a portion of the blank, as is desirable in the case of boot-fronts, which require to be crimped only a portion of their length.

It will be observed that the blank is rubbed and stretched in the direction of its length, or in the direction of the circumference of the circles of which when crimped it is a section. This I consider an important improvement, as a blank so crimped will retain its form much more permanently than when done by any former process.

This process may be performed by other mechanism than that herein described—as, for instance, the disks C' C' may be stationary, and the block *e* revolve around them; or there may be two blocks movable in opposite directions partially around the disks, beginning to operate on the blank near its center, and passing simultaneously over it toward its ends; but

all these involve substantially the same process.

What I claim is—

1. The process of crimping the uppers of boots and shoes and similar articles, as herein set forth, the same consisting in forcing the blank between two surfaces under pressure to gradually assume the arc of a circle along a line through its central part, the action taking place on a slight portion at first, and gradually passing along said line in the direction of its length, while at the same time the other parts of the blank along lines parallel to said central line and on either side of it are similarly

operated upon, and they are forced to form arcs of circles of radii gradually increasing as their distances from said central line increases.

2. The combination of the revolving disks  $C'$   $C'$  and the curved block  $e$ , as shown and described.

3. In combination, the revolving disks  $C'$   $C'$ , the curved block  $e$ , arm  $k$ , rod  $f$ , and lever  $g$ , and suitable actuating-mechanism, substantially as shown and described.

STEPHEN MOORE.

Witnesses:

HOMER ROGERS,  
J. E. HERR.