

(No Model.)

O. F. KNOX.

MACHINE FOR SHAPING SHOE SOLES.

No. 347,050.

Patented Aug. 10, 1886.

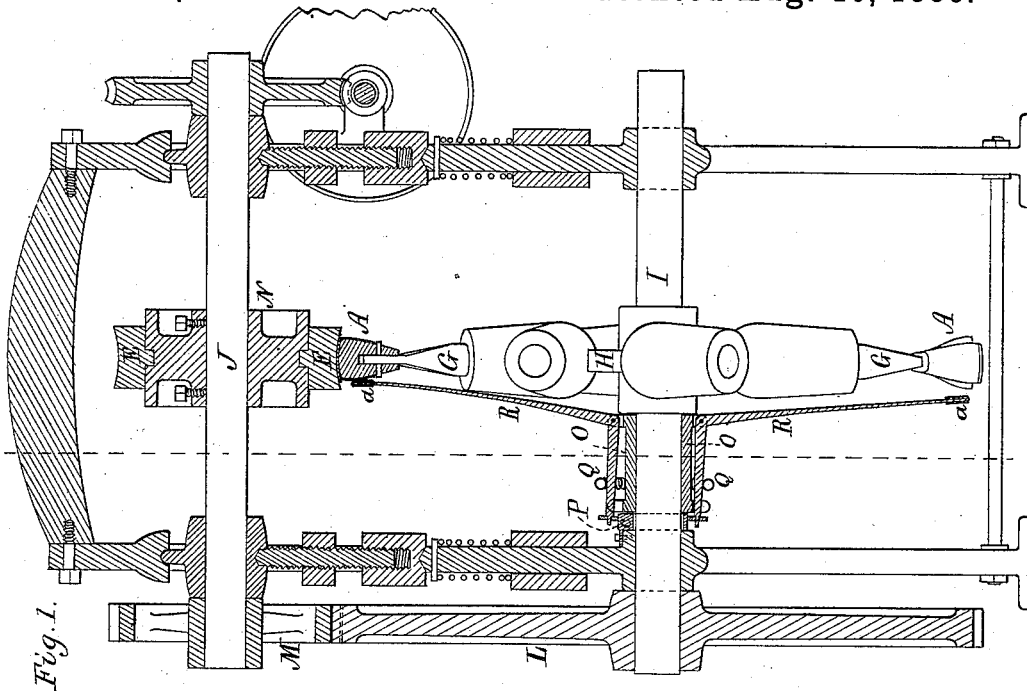


Fig. 1.

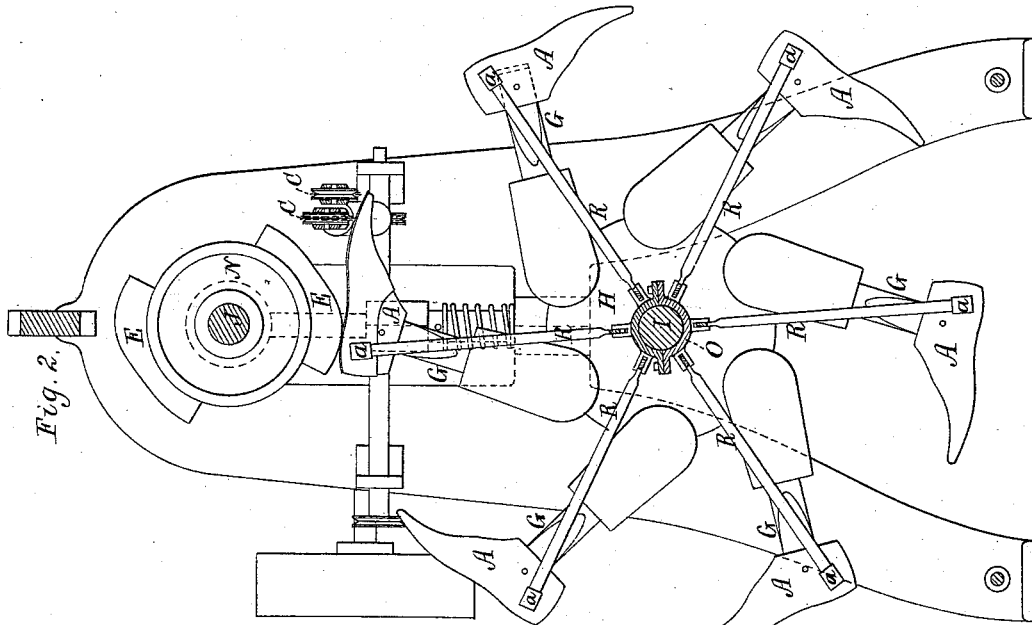


Fig. 2.

Witnesses  
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Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR SHAPING SHOE-SOLES.

SPECIFICATION forming part of Letters Patent No. 347,050, dated August 10, 1886.

Application filed June 1, 1886. Serial No. 203,708. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR FITZALAN KNOX, of Watertown, in the county of Middlesex, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Machinery for Shaping the Soles of Shoes or Boots; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, in which—

Figure 1 is a longitudinal section, and Fig. 2 a transverse section in part, of a machine embodying my invention, the nature of which is defined in the claim hereinafter presented. Fig. 3 is a section of the cam P that operates the shoe-heel holders or levers to be explained.

My invention has reference to mechanism essentially as represented and described in the United States Patent No. 164,235, it being, as therein stated, for "beating out" the soles of boots or shoes.

The aforesaid drawings show the special portions of such machine, to which is applied the mechanism, hereinafter described, for preventing a shoe from slipping on its last while such shoe may be acted on by one of the pressing-formers.

In the operation of such machine the shoe is very apt to rise or slip at its heel upward on the last while the shoe may be in the act of passing the channel laying chains or one of the formers, it being very desirable to keep the shoe close down upon the last while the sole of such shoe may be in the act of being shaped, otherwise the sole will not have its true form lengthwise of it, and the instep of the upper is liable to become stretched.

In carrying out my invention I combine with the mechanism for beating out the soles mechanism for holding the shoe from slipping upward on the last at the heel thereof, while the shoe may be under the action of one of the formers.

In the drawings, A A A, &c., represent the series of lasts on which the boots or shoes are to be held in order to have their soles smoothed and shaped by the rubbing belts or chains C and the pressing-formers E. The lasts are mounted on radial arms G, projecting from a disk or hub, H, carried by a revoluble shaft,

I. This shaft, by gears L and M, is connected with another shaft, J, on which is a wheel, N, to whose periphery the two pressing-formers E are fixed and from which they extend, as represented.

To a sleeve, O, encompassing and fixed on the shaft I, there are fulcrumed a set of angular levers, R, corresponding in number to that of the last. The longer arms of these levers radiate from the sleeve at equal angular distances apart, each of such arms being elastic, or a spring provided at its outer end with a proper-cushioned head, *a*, to bear upon the shoe on one side of the heel portion of its upper, as represented. The shorter arm of each of the said levers extends lengthwise of the sleeve and over a cam, P, that is stationary at the outer end of the sleeve and supported by the machine-frame. This cam is shown in longitudinal section in Fig. 3. A spiral spring, Q, encircles the several shorter arms of the levers R and draws them in contact with the periphery of said cam, and while any of such shorter arms may bear against the circular part of such periphery the longer arms connected with them will be borne out of contact with the shoes on the lasts. While, however, any one of the shoes may be in process of being acted on by one of the formers E, the protruding part *c* of the cam will be in action on the lever or holder of the said shoe, and will force it up to the shoe, so as to prevent such shoe from slipping upward upon the last.

While an attendant may be either removing a shoe from one of the lasts or applying another thereto the holder next adjacent to such last will be back or away from the last sufficiently to be out of the way of the shoe.

I do not claim in combination with a last and presser, arranged and provided with mechanism for simultaneously reciprocating them, as represented and described in the United States Patent No. 296,486, a rod and a spring applied to the last-carrier, and being to hold a boot or shoe on the last, so as to prevent such boot or shoe from rising thereon while pressure is by the presser being applied to the sole at the toe portion thereof, my invention having reference to a machine having a revoluble series of lasts that all rotate simultaneously in

one direction under and operate in connection with a revoluble presser or pressers.

I claim—

5 The combination, with the revoluble series of lasts and one or more revoluble pressing former or formers having mechanism for revolving them, as explained, for beating out the soles of shoes or boots applied to such  
10 lasts, of mechanism, substantially as described, for preventing each shoe while subjected to

the action of a pressing-former from slipping or rising upon the last, such mechanism being the series of angular levers, and their actuating-spring and cam, arranged and to operate essentially as set forth.

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Witnesses:

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