C. W. COLLYER & E. C. SYMONDS.

Machinery for the Manufacture of Turned Shoes.

No. 146,654. Patented Jan. 20, 1874.

Fig. 1.

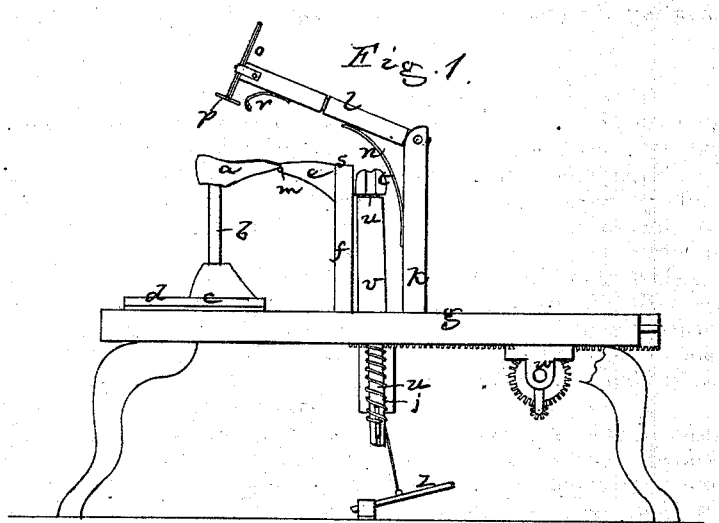


Fig. 2.

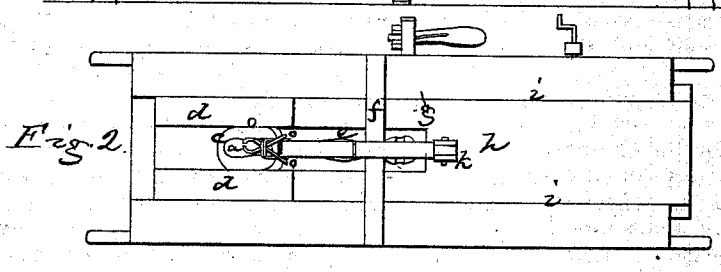
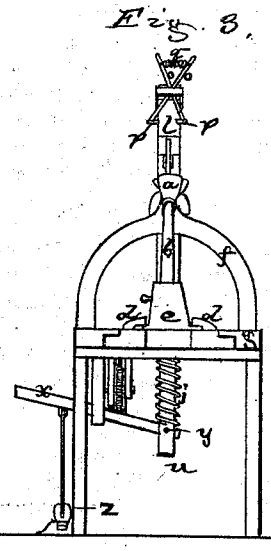


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES W. COLLYER AND EDWARD C. SYMONDS, OF MARBLEHEAD, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR THE MANUFACTURE OF TURNED SHOES.

Specification forming part of Letters Patent No. **146,654**, dated January 20, 1874; application filed December 17, 1873.

To all whom it may concern:

Be it known that we, CHARLES W. COLLYER and EDWARD C. SYMONDS, both of Marblehead, in the county of Essex and State of Massachusetts, have invented an Improvement in the Manufacture of Turned Shoes; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

In the manufacture, in boot and shoe making, of what are known as "turns," the sole and upper are united wrong side out, and are then reversed or turned, and the process of turning is by far the most laborious hand labor connected with boot and shoe manufacture.

The hand process it is unnecessary to describe, but workmen who perform the turning are injured in body by the operation, and are unable to work many days in succession.

The object of our invention is to accomplish the turning by a machine operation; and our invention consists primarily in an organization for effecting this result. The nature of the invention will be best understood from the description of the machine without an attempt at a general description thereof.

The drawing shows a machine embodying our invention.

Figure 1 shows the machine in side elevation. Fig. 2 is a plan of the same. Fig. 3 is an end elevation.

a denotes a last, upon which the sole and upper of the boot are lasted and connected. This last is mounted upon a pin, *b*, extending up from a slide, *c*, the slide moving between guides *d*, so that the last can be carried up to a stationary last, *e*, or back therefrom, the slide being drawn back when a last with a shoe to be turned is to be placed upon the pin, and the last *a* being then moved up to the last *e* for the turning operation. The stationary last is mounted upon the top of a bow, *f*, extending up from the main frame or table *g*, and upon this table is a carriage, *h*, moving between guides *i*, and from this carriage extends a vertical post, *k*, to the top of which is jointed an arm, *l*, that projects over the last. The two lasts stand toe to toe, and when the last *a* is moved up to the last *e*, the toe of the leather may extend into a groove, *m*, of said last *e*. The arm *l* is held up normally by a prop-spring, *n*, and to its outer end are jointed two crossing bars, *o*, having, at their bottom ends, a pair of jaws, *p*, which, when the arm *l* is depressed, will gripe the boot at the opposite sides of the counter, the bars being drawn together to tighten the gripe by a suitable spring, *q*. Just back of the jaws is a spring, *r*, that bears upon the sole in the shank, and, as the arm *l* is raised, the jaws draw up the back or heel end of the boot from the last, the spring holding the shank down to the last. The carriage *h* is then drawn back, and the jaws holding the quarters peel off the fore part of the boot from the last and draw it over the stationary last *e*. The last *e* is made short, ending at the shank *s*, or being without a heel, and when the jaws *p* have laid down the fore part of the shoe over the last *e*, the heel part is left projecting beyond the shank *s*. At the end of the last *e* is a head, *t*, upon a piston, *u*, passing through a stationary tube, *v*, extending up from the table *g*. When the fore part of the shoe has been turned the heel part is left over the head *t*, the bottom edge of the counter being over a groove, made upon the head. The operator then seizes the edge of the upper at the heel and raises the head, the counter and heel being turned over the head by the upward motion of the head, in connection with the action of the operator, to drawn down the upper. The carriage *h* may be actuated by a gear mechanism, consisting of a winch-shaft, *w*, having a pinion meshing into a gear that works into a rack on the under side of the carriage, and the piston *u* may be raised by a lever, *x*, (pivoted at *y*, and connected at its outer end to a pedal, *z*,) and thrown down by a spring, *j*.

We claim—

1. The combination, with the boot-holding

last *a*, of the stationary last *e*, jaws *p*, arm *l*, post *k*, and carriage *h*, operating to strip and turn the shoe, substantially as described.

2. In combination with the jaws *p*, the spring *r*, for holding down the shank, substantially as described.

3. In combination with the stripping mechanism, the heel-turning head *t* and piston *u*, substantially as described.

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Witnesses:
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