(No Model.)

F. E. FRANCIS.

JACK FOR SHOE MACHINES.

No. 573,144. Patented Dec. 15, 1896.

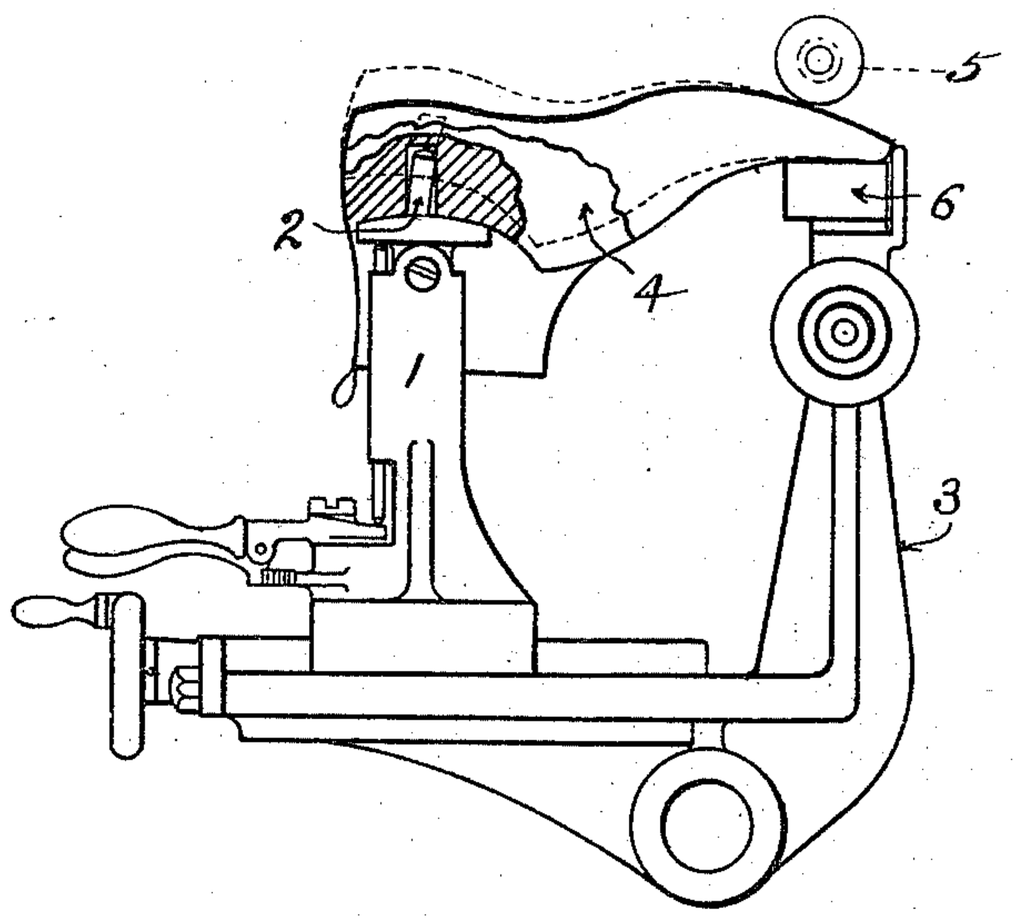

FIG. 1.

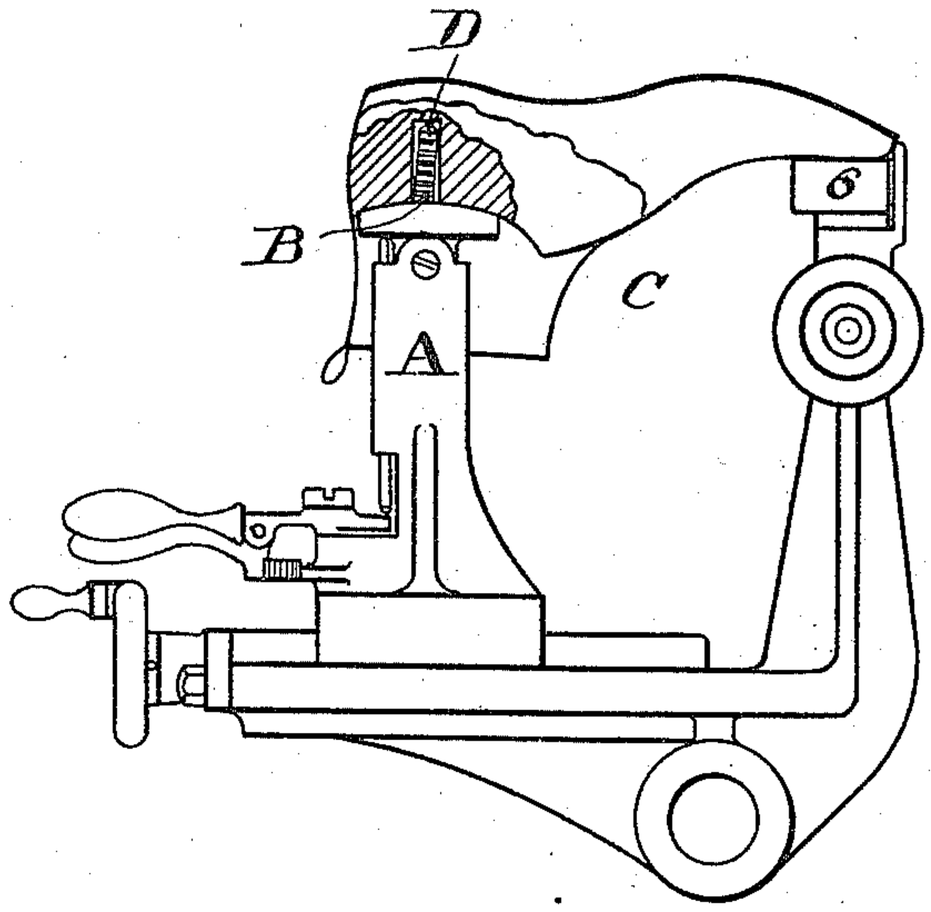

FIG. 2.

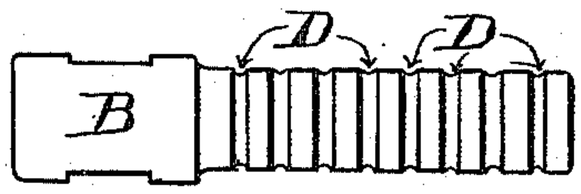

FIG. 3.

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UNITED STATES PATENT OFFICE.

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JACK FOR SHOE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 573,144, dated December 15, 1896.

Application filed July 1, 1896. Serial No. 597,673. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. FRANCIS, a citizen of the United States, and a resident of Auburn, in the county of Androscoggin and State of Maine, have invented a new and useful Improvement in Jacks for Shoe-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to jacks for shoe-machines, such as sole-leveling machines, and more particularly to an improved last-spindle therefor. In those sole-leveling machines at present constructed wherein a movable roller is moved back and forth along the sole of the shoe to smooth out and shape the sole to the bottom of the last considerable pressure is brought to bear upon the various parts of the sole on the last, and oftentimes this pressure is unequally distributed thereupon, generally being multiplied or increased as the roller reaches the extreme toe portion of the sole; also, in those machines known as "direct-pressure" machines, wherein a former or mold is brought into forcible contact with the bottom of the sole upon the last, it usually happens that one portion of said former or mold will contact with the sole and exert pressure thereupon prior to the seating of the entire surface of the mold on the sole. This unequal contact between the bottom of the sole and the unequal pressure of the roller at the toe portion of the sole has a tendency to cause the last or form upon which the shoe is seated to ride up and move or shift upon its spindle or support, thus tilting the last and the shoe thereon, causing the leveling or shaping devices to give a greatly-multiplied or unequal pressure upon certain parts of the sole, tending to distort and roll up the surface thereof and putting the stitches which unite the sole to the upper under great stress and strain, frequently rupturing the stitches and generally to mar the appearance of and to otherwise damage the work.

The object of the present invention is to remedy the defects noted and to thus improve the operation of the machine.

The present invention therefore consists of an improved jack or work-support for sole-leveling machines in which provision is made for insuring against the accidental movement of the last on its spindle or support.

The invention is shown in the accompanying drawings, in which—

Figure 1 shows the jack of a well-known type of sole-leveling machine, the last therein being partially in section, provided with the old form of last-spindle, illustrating the difficulty which is removed by my invention. Fig. 2 is a similar view showing the improved form of last-spindle. Fig. 3 shows the spindle detached.

Before proceeding to describe my invention I desire to state that I am aware that numerous devices are now employed on jacks which are adapted to clamp the sides of the last and thus hold it firmly in a fixed position on its spindle or support, but such devices are cumbersome and unwieldy, and are more or less so placed as to be in the way of the operator and retard to a certain extent the ready manipulation of the shoe and obstruct the insertion of the last and shoe upon its support in the machine, besides being expensive to make and adding greatly to the cost of the jack.

In Fig. 1 is shown the present form of jack as employed in sole-leveling machines, in which 1 represents the stand or support, and 2 the pivoted last-spindle, and 3 the toe-support. The numeral 4 represents the last upon the spindle, and 5 is the roller usually employed in leveling-machines of the roller type. This view shows the objectionable features of the old form of jack, which it is the object of the present invention to remove. The last-spindles in these jacks are usually pivoted, as shown, and ordinarily the lasts are "unbushed," or provided with spindle-holes simply bored into the same without any protective metallic lining. The toe-support usually has a pad 6, of some yielding material, upon which the toe of the last rests during the operation of leveling, and the spindle 2 being smooth when pressure is brought to bear upon the sole the toe portion is forced down upon the yielding pad 6, and there is nothing to prevent the last from moving up off the spindle and causing the objectionable operation of the sole-leveling means, as before noted, and in Fig. 1 is shown in full lines the normal position of the last and shoe, the dotted

lines showing the tilting thereof and the movement of the last on the spindle when pressure is brought to bear upon the toe portion.

In Fig. 2 is shown my improved jack, in which the last-spindle is provided with means to prevent the riding up of the last on the spindle during the leveling operation. The reference-letter A represents the standard or support, and B the improved last-spindle, which may be pivoted to the standard or support, as is usual in these constructions. C represents the last, which is provided with the usual spindle-hole adapted to be placed upon and supported by said spindle. For the purpose of preventing the slipping of the last on the spindle while the shoe-sole is under pressure I provide the spindle with the roughened or corrugated surface, as shown, the corrugations being preferably formed by cutting therein the parallel grooves D, which may extend from the base to near the upper end of such spindle. By this construction, if there be a comparatively close fit between the wall of the spindle-hole and the surface of the spindle, the roughened or corrugated surface thereof will cause a frictional grip between the same, and thus hold the last firmly in place in the spindle, and if the relative sizes of the spindle-hole in the last and the spindle be such as to allow of a slight relative longitudinal tip between the wall of the spindle-hole in the last and the surface of the spindle it is obvious that the edge of the spindle-hole will have a tendency to take into one of the corrugations on the surface of the spindle, and thus be held fixedly in the desired position.

The operation of my device is thought to be sufficiently brought out in the foregoing specification and the illustrations furnished, and further explanation is deemed unnecessary.

Having fully described my invention and its mode of operation, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with the component parts of a last-supporting jack, of the grooved or corrugated last-spindle, substantially as described.

2. A last-spindle provided with the independent horizontal parallel grooves or depressions, substantially as described.

In testimony whereof I have hereunto set my hand, in the presence of two attesting witnesses, this 15th day of June, 1896.

FRANK E. FRANCIS.

Witnesses:
O. L. BARKER,
FLAVILLA A. LUCE.