J. H. McKECHNIE.

RUBBER BOOT JACK.

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1,011,069.

Patented Dec. 5, 1911.

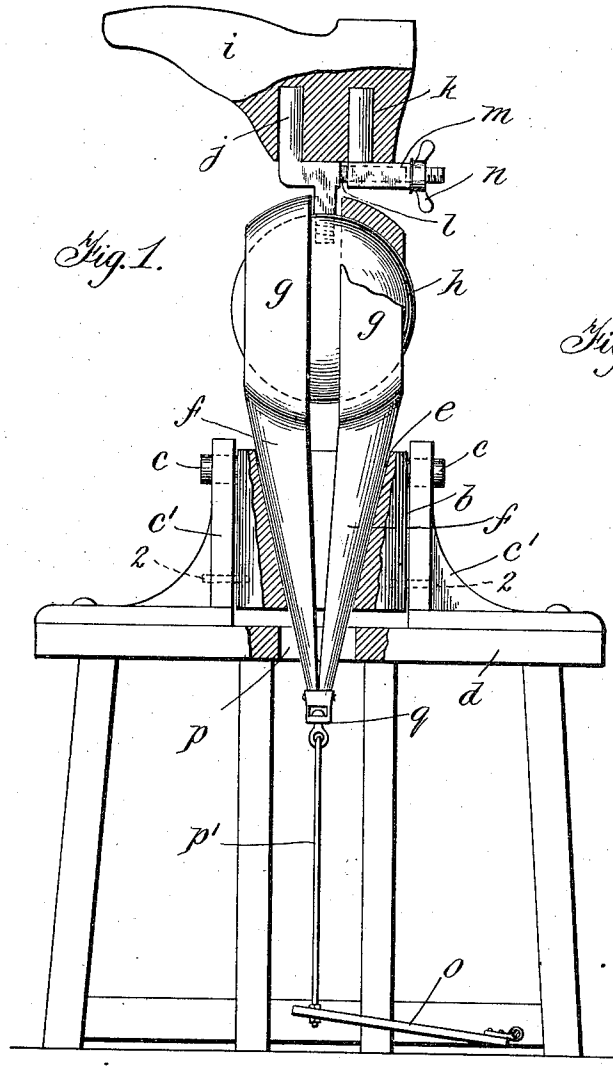

Fig. 1.

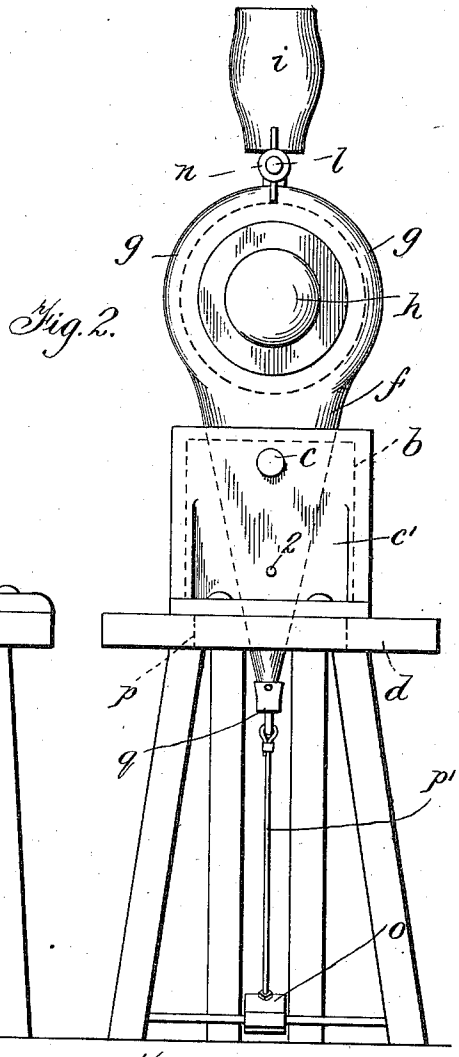

Fig. 2.

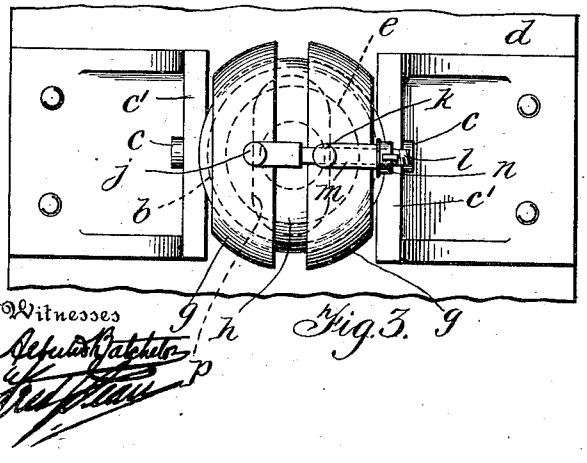

Fig. 3.

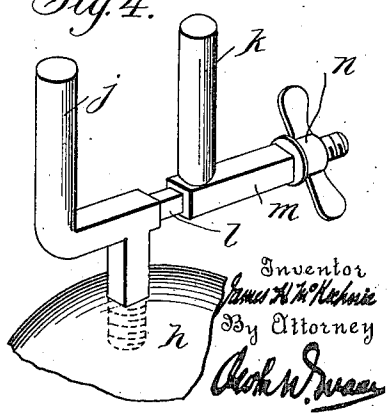

Fig. 4.

Witnesses

Inventor

James H. McKechnie

By Attorney

Alex W. Swan

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES HENRY McKECHNIE, OF MONTREAL, QUEBEC, CANADA.

RUBBER BOOT JACK.

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To all whom it may concern:

Be it known that I, JAMES HENRY McKECHNIE, of the city of Montreal, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Rubber Boot Jacks; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention appertains to jacks adapted to support lasts used in the manufacture of rubbers and the like, or in analogous arts, in such a manner that the last when secured to the jack may be set to any angular position and clamped in such position, and the object of this invention is to improve the general construction of jacks of this sort and to provide means whereby the last may be readily and securely connected to the jack while being permitted greater freedom of movement than heretofore. For full comprehension however of my invention reference must be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate the same parts and wherein—

Figure 1 is a side elevation, partly broken away, of my improved jack; Fig. 2 is a view taken at right angles to Fig. 1; Fig. 3 is a plan view with the last removed; and Fig. 4 is an enlarged detail perspective view of the means for attaching the last to the carrying member of the boot jack.

In the embodiment of my invention I prefer to form the jack so that it is adapted to be conveniently secured to a bench or the like used by the operator.

Specifically speaking the jack consists of a block *b* pivotally supported preferably near the top by means of trunnions *c* held by standards *c'* secured to the bench *d*. The block *b* has a vertical hole *e* therethrough of inverted conical form while such block is normally held in vertical position by means of a pair of displaceable pins 2. Within the hole *e* is loosely supported the lower tapered ends of a pair of clamping arms *f* which extend beyond both sides of the block, the upper ends of the arms being enlarged and formed with oppositely facing cup like eyes *g* between which is loosely held a ball *h* which, being of greater diameter than the opening of either one of the eyes holds the latter apart and leaves a space therebetween which will be further alluded to. The taper of the arms *f* extends to the enlarged upper ends and is of sufficient extent to prevent any possibility of the shoulders formed by such enlarged ends coming into contact with the top of the block and so limiting the clamping action of the arms. The ball *h* rigidly supports the last *i* in a manner to be presently described, and is, through the loose connection therebetween and the eyes *g* and between the arms *f* and block *b*, capable of universal movement, while the block *b*, upon removal of the pins 2 and the drawing up of the arms *f*, to bring the lower ends thereof above the surfaces of the bench, the hinge connection of the treadle allowing such movement, can be tilted upon the trunnions and so bring the last to a position upon the bench.

To readily attach the last *i* to the ball *h* and securely fasten it thereto I provide a pair of pins *j* and *k* which are carried by the ball and are adapted to enter corresponding holes in the last. The pin *j* is rigidly carried by the ball *h* and at a point beyond the eyes, is formed with a shank *l* at right angles thereto and preferably of square cross section and upon which is slidably mounted the pin *k* by means of an integral sleeve *m* formed correspondingly to the shank, the angular form of which prevents the sleeve from turning thereon and so causing the pin *k* to fall out of position with its respective hole in the last. By providing one slidable pin I am enabled to clamp both pins within the holes in the last by a nut *n* screw-threaded upon the outer end of the shank *l* and bearing against one end of the sleeve *m* so that when the nut is screwed upon the shank the pins become tightly clamped against the adjacent walls of their respective holes in the last. I prefer to reduce in size the portion of the shank having the sleeve mounted thereon so that the exterior of the latter is flush with the main portion of the shank and when the last is applied it will rest upon the shank and sleeve thus supplementing the pins *j* and *k* in preventing the last from wabbling.

As will be readily seen the beforementioned space between the eyes *g* will provide an uninterrupted passage for the pin *j* and

thus permit the last to be turned, independently of the arms *f*, to a position in line with or beyond the horizontal center line of the ball, and to either side of the block *b* while the position of the last with relation to the block *b* can be further varied by turning the arms *f* around in the hole *e*.

The arms *f* are adapted to be forced toward one another and so clamp the ball *h* between them and hold the last in any position to which it has been adjusted and to accomplish this I connect the lower ends of the arms to a treadle *o*, a hole *p* in the bench providing for this connection which is effected by means of a wire *p'* or the like, and a swivel *q* the latter being provided to permit the arms to turn within the hole *e* independently of the treadle while the hole *p* in the bench is elongated to provide a clearance for the wire *p'* attached to the arms *f* when the block *b* is tilted as before described. When the treadle is depressed the arms *d* are drawn down within the hole *e*, the convergence of which acting in conjunction with the taper of the arms forces the latter together and causes the upper ends *g* to tightly clamp the ball between them. The treadle may be retained in its lowered position by any preferred device.

What I claim is as follows:

1. In a boot jack the combination with a tiltable block having a conical hole therethrough,—of a pair of arms within the conical hole, a ball, having universal movement, supported between the said arms and adapted to support a last, and means for forcing the arms toward one another.

2. In a boot jack the combination with a block having a conical hole therethrough,—of a pair of tapered arms within the conical hole, a ball supported between said arms and adapted to support a last, such last being capable of turning, in opposite directions, to a position in line with and beyond the horizontal center line of the ball independently of the said arms, and means for forcing the arms toward one another.

3. In a boot jack the combination with a block having a conical hole therethrough,—of a pair of arms within the conical hole and each having one end of cup form, a ball loosely held between the said ends of the arms and adapted to support a last, such ball being of greater diameter than the interior of either one of such cup like ends, which latter present an uninterrupted circumferential space therebetween and with relation to the ball, and means for forcing the arms toward one another.

4. In a boot jack, the combination with a block having a conical hole therethrough,—of a pair of tapered arms within the conical hole and presenting at one of their ends a pair of oppositely facing cup shaped eyes; a ball loosely held between the eyes and adapted to support a last, and means for forcing the arms toward one another.

5. In a boot jack, the combination with a block having a conical hole therethrough,—of a pair of tapered arms extending through the hole and beyond either side of the block and presenting at one of their ends a pair of oppositely facing cup like eyes; a ball loosely held between the said eyes, of greater diameter than the opening of either one of the latter and adapted to support a last; and means for forcing the arms toward one another.

6. In a boot jack, the combination with a pivotally supported block having a conical hole therethrough;—of a pair of tapered arms within the conical hole and presenting at one of their ends a pair of oppositely facing cup shaped eyes; a ball loosely held between the eyes and adapted to support a last; and means for forcing the arms toward one another.

7. In a boot jack, the combination with a block having a conical hole therethrough,—of a pair of arms within the conical hole; a ball loosely held between such arms; means for securing a last to the ball including a pair of pins, one carried rigidly and the other loosely by the ball and both adapted to enter corresponding holes in the last; and means for forcing the arms toward one another.

8. In a boot jack, the combination with a block having a conical hole therethrough,—of a pair of tapered arms within the conical hole; a ball loosely held between the arms; means for securing the last to the ball comprising a pair of pins carried by the ball and adapted to enter corresponding holes in the last, one of such pins being rigidly secured to the ball and having a shank formed therewith, the other pin having a sleeve formed therewith adapted to be mounted upon the said shank and a nut bearing against the sleeve; and means for forcing the said arms toward one another.

9. In a boot jack, the combination with a block having a conical hole therethrough,—of a pair of arms within the conical hole and presenting at one of their ends a pair of oppositely facing cup like eyes; a ball loosely held between the eyes; a pin rigidly secured to the ball and having a shank formed therewith; a second pin having an integral sleeve adapted to be mounted upon the said shank and a nut screwed upon the outer end of the latter; and means for forcing the arms toward one another.

10. The combination with a base or support, of the holding device comprising a fixed member secured to the base and presenting a horizontal section squared for a portion of its length and terminating in a screw threaded end portion and its opposite end presenting an upwardly projecting pin;

a movable member formed so as to be mounted upon the squared portion of the horizontal section to slide thereon and be flush with the main portion of the latter, such movable member having an upwardly projecting member and a nut mounted upon the screw-threaded portion of the fixed member.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JAMES HENRY McKECHNIE.

Witnesses:

C. H. ARROWOOD,

M. E. HALEY.