

No. 705,512.

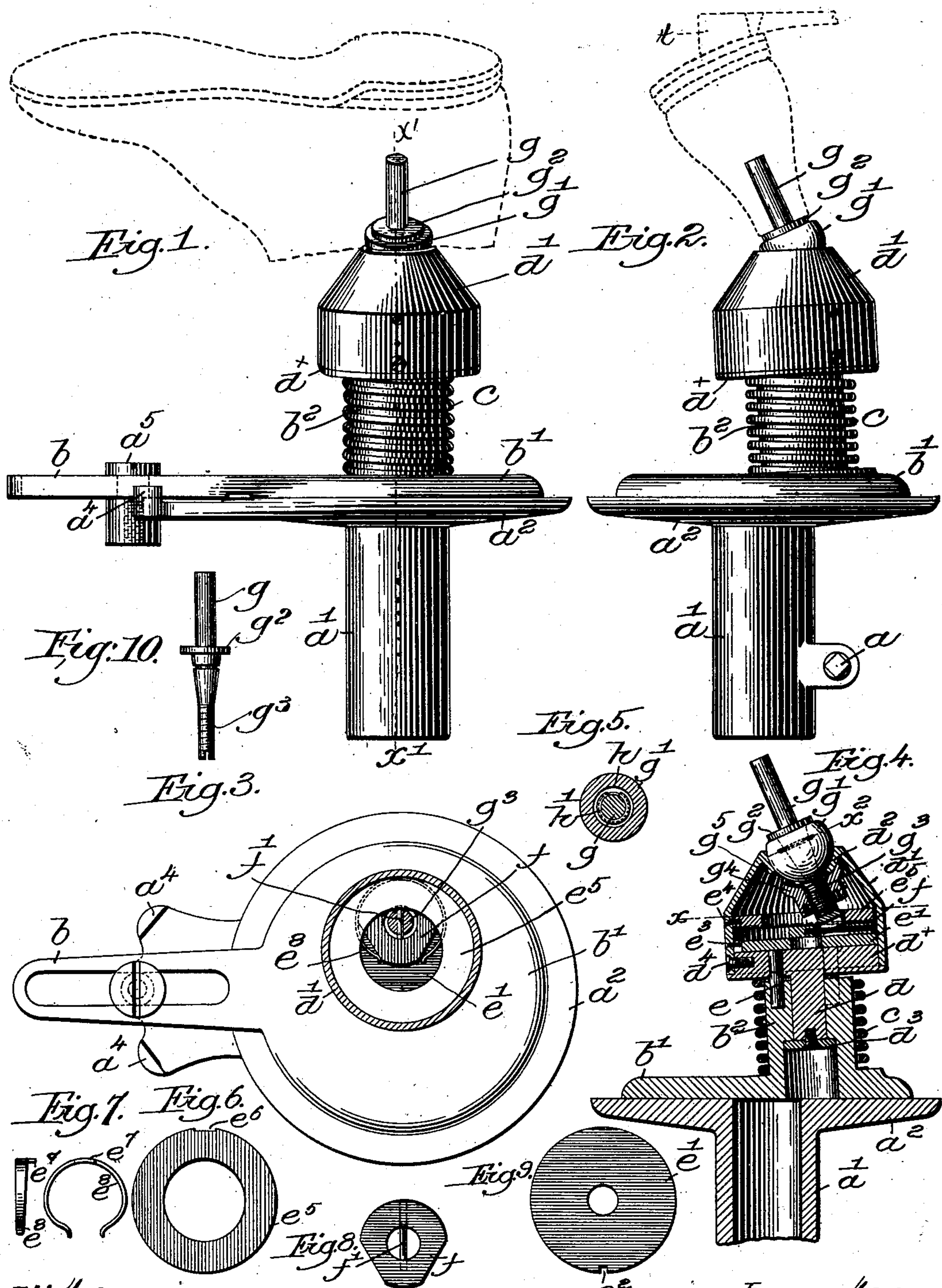
Patented July 22, 1902.

L. A. CASGRAIN.

JACK FOR SLUGGING AND NAILING MACHINES.

(Application filed June 10, 1898.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

LOUIS A. CASGRAIN, OF WINCHESTER, MASSACHUSETTS, ASSIGNOR, BY
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JACK FOR SLUGGING AND NAILING MACHINES.

SPECIFICATION forming part of Letters Patent No. 705,512, dated July 22, 1902.

Application filed June 10, 1898. Serial No. 683,119. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. CASGRAIN, of Winchester, county of Middlesex, State of Massachusetts, have invented an Improvement in Jacks for Slugging and Nailing Heels, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention is an improvement on the class of jack shown and described in an application, Serial No. 632,466, April 16, 1897. In that application the last-holding pin has a tipping movement in a vertical plane about
15 a horizontal pivot; but herein the pin is mounted in a partial ball or sphere resting in a spherical seat, and so sustained the pin has a universal movement in every direction, and I have devised to cooperate with the pin
20 locking means which locks the pin during each nailing operation in each position that the pin may assume, according to the requirements of the work on the pin and being nailed.

Figure 1 in side elevation represents a jack
25 embodying my invention, a last and shoe being shown thereon in dotted lines. Fig. 2 is a right-hand end view of the parts shown in Fig. 1, together with part of a nose or foot plate of a slugging or nailing machine. Fig.
30 3 is a plan view below the dotted line x of Fig. 4. Fig. 4 is a substantially vertical section in the dotted line x' , the pin and sphere being shown in elevation. Fig. 5 is a section in the line x^2 , Fig. 4. Fig. 6 is an under side
35 view of a toothed plate fixed inside the curb having the seat for the sphere. Fig. 7 shows in two positions a spring held in position by the said toothed plate. Fig. 8 shows detached a toothed slide loosely connected with the
40 lower end of the last-holding pin. Fig. 9 shows the toothed locking-plate, which is chiefly instrumental in locking the pin in the position it may occupy when the nail is being driven; Fig. 10, a modification to be de-
45 scribed.

It will be understood that the holes in the lasts upon which are mounted the shoes the heels of which are to be slugged are frequently very considerably worn, and some-
50 times they are not bored straight, and when

such a last is put on a stationary upright pin of a jack the heel to be slugged cannot be kept in the proper relation to the bottom of the nose or presser plate, so that the slug or nail can be properly driven therein at the de-
55 sired angle.

By the use of the jack herein described the bottom of the sole may readily adapt itself to the usual nose or foot plate t of the slug-
60 ging or nailing machine.

The split sleeve a' , adapted to be clamped by a suitable screw a , is upon the upper end of the post of any usual horn of a slugging or nailing machine. The plate a^2 , connected to said sleeve, the stops a^4 on said plate, the
65 swing-plate b' , having a slotted arm b , said swing-plate having rising from it a tubular hub b^2 , surrounded by a spring c , and the slot of the shank of the swing-plate embracing and sliding on a screw a^5 , are and may
70 be all substantially such as shown in the application referred to, so need not be herein further described.

The tubular hub b^2 receives in it the shank d of a plate d^x , having an attached curb d' ,
75 herein shown as truncated at its upper end and provided with a spherical seat d^2 and connected to said plate by a screw d^4 .

The lower end of the shank d has secured to it by a set-screw or otherwise a washer or
80 upstop d^3 , said upstop contacting with a suitable shoulder in the hub b^2 , due to the action of the spring c .

The plate d^x , connected to or forming part of the shank d , has a hole which receives in
85 it a lifting-stud e , sustained in a suitable hole in the hub b^2 .

The curb just above the plate d^x receives in it loosely a toothed locking-plate e' , it having a series of parallel teeth or corrugations, and
90 this plate has a notch e^2 , in which enters a pin or retaining device e^3 , carried by the curb, the pin restraining the rotation of the locking-plate, but permitting the curb to descend as the spring is depressed, without, however,
95 depressing the toothed locking-plate, it standing in its normal position due to the fact that it rests upon the stud e , there being preferably two or more such studs arranged about the hub b^2 , a second one of said studs being
100

shown by dotted lines in Fig. 4. The curb has fixed to it by a suitable set-screw e^4 a toothed plate e^5 , and said toothed plate, one face of which is shown in Fig. 6, has a notch e^6 , which receives in it a lug or projection e^7 of a spring e^8 , so that said spring is retained in fixed position with relation to said toothed plate. The teeth of this toothed plate e^5 , when the plate is applied in the curb, stand substantially at right angles to the direction of the run of the teeth of the toothed locking-plate e' . Between the toothed locking-plate e' and the toothed plate e^5 I have arranged a slide-plate f . (Shown in Fig. 4 and detached in Fig. 8.) This slide-plate has a central stud f' , and its opposite faces are so toothed that the teeth at one side run in a direction substantially at right angles to the teeth at the other side, so that the teeth at the under side of the slide may be properly engaged with the teeth of the toothed locking-plate, while the upper side of the slide has teeth extended in the proper direction to be engaged by the teeth of the toothed plate e^5 .

The last-holding pin g , constituting a tipable work-support, has an attached flange g^2 , and below the flange the pin is tapered to enter a hole in a partial ball or sphere g' , which may have a threaded extension g^3 and be slotted at its lower end to embrace the pin f' of the slide-plate f . The ball or sphere enters the concaved seat d^2 of the curb, and a nut g^4 , screwed on the threaded extension g^3 , acts against the convexed lower side g^5 of the seat d^2 , said nut keeping the ball seated properly.

The partial ball or sphere g' (see Fig. 5) is provided with an internal groove h , within which is placed a spring-clip h' , and the shank of the pin g is provided with an annular groove, said spring-clip while resting in the groove h entering also partially the annular groove of the pin, so that said pin is maintained by said spring-clip h' with said partial ball or sphere.

Fig. 4 of the drawings shows the spring c as having lifted the plate d^x and curb, the toothed locking-plate e' lying directly upon the top of the plate d^x , and in such condition of the parts it may be assumed that a last may be applied to the pin g and that it may be tipped universally in any desired direction requisite to present the bottom of the sole at the desired or proper angle with relation to the nose-plate t of any usual slugging or nailing machine, according to the direction in which it is desired to drive the slugs or nails into the sole or the heel end of the sole, and the last and the pin having been brought into the desired position any upward movement of the horn will result in compressing the spring c and the substantial meeting of the plate d^x with the hub b^2 ; but during this relative movement of the parts the toothed locking-plate will not move; but the toothed plate e^5 , which moves coincidently with the curb, is made to approach the face of the

toothed locking-plate e' , which results in clamping firmly between the said toothed plate and the said toothed locking-plate the slide f , said slide being locked in the position in which it may have been left by the movement of the lower end of the partial ball or sphere in adapting it to the required position for the last, and the pin g will be held fixedly in this position while the slug or nail is being driven.

It will be readily understood in the use of the apparatus hereinbefore described that the pin g may occupy any desired position preparatory to driving each slug or nail and that during the driving operation the pin holding the last must remain fixedly in its proper position, thus insuring the proper driving of every slug or nail into the shoe.

By adjusting the nut g^4 on the threaded part of the ball or sphere the friction of said nut and the ball or sphere with relation to the seat d^2 may be regulated, so that a greater or less amount of strain will be necessary in manipulating the last-pin with the last upon it.

The spring e^8 , acting against the inclined sides of the slide f , serves to maintain that slide in such position that its teeth at its opposite sides will stand substantially parallel with the teeth of the plates e' and e^5 , with which the said slide coöperates.

I believe myself to be the first to employ a universally-tipable last-holding pin and hold the same in its adjusted position by a locking device of any construction whereby the last-holding pin, it having been put into position by or through the last preparatory to driving a slug or nail, will be kept locked at such point until after the said slug or nail has been driven. It will be obvious that substantially the same result would be obtained by making the last-pin g sufficiently long to extend through the partial ball or sphere, (see Fig. 10,) threading the lower part of said pin and slitting it at its extremity.

By providing the ball or sphere with a threaded shank it is possible to more easily and readily change the pin g when one of another diameter is desired, and so also it is beneficial in some cases to leave the last-pin g free to be rotated in the ball or sphere.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A universally-tipable last-holding pin, combined with a yielding support for said pin and locking means to hold said pin in any position in which it may be put by the requirements of the work, said locking means retaining said pin in locked position only while a slug or nail is being driven.

2. A universally-tipable last-holding pin, a support for the same, and locking means for said pin operative only when a slug or nail is being driven to lock said pin in the position it should occupy according to the requirements of the work to be nailed.

3. A jack presenting a yielding curb, means to support and direct said curb in its yielding movement, a tipable last-pin mounted in said curb loosely and capable of adapting itself to the requirements of the last, and means acting during the yielding movement of said curb to lock the last-pin in the position occupied by it when the work was put into the position required for nailing.

4. A yielding spring-supported curb having a cup-shaped seat, a last-pin presenting a spherical enlargement resting and movable in said seat, and a slide-plate with which said pin is loosely connected, combined with a toothed plate, and a toothed locking-plate between which said slide is located, change in the position of the toothed plate and toothed locking-plate confining the slide and last-pin in fixed position.

5. A yielding spring-supported curb having a cup-shaped seat, a last-pin presenting a spherical enlargement resting and movable in said seat, and a slide-plate with which said pin is loosely connected, combined with a toothed plate, and a toothed locking-plate between which said slide is located, change in the position of the toothed plate and toothed locking-plate confining the slide and last-pin in fixed position, and a spring connected with said toothed plate and embracing the slide-plate.

6. A jack containing a last-holding pin provided with a ball or sphere like portion whereby said last-pin may have a substantially universal movement, a yielding seat for said ball or sphere, and means to lock and hold said pin during the driving of a slug or nail in the position in which the said pin may have been made to occupy by placing the last on said pin and putting the sole in its proper position preparatory to driving a slug or nail.

7. In a jack, a last-holding pin provided with a partial ball or sphere, a curb having a seat for said ball or sphere, and a movable nut to keep the ball or sphere seated in said seat, substantially as described.

8. In a jack, a last-holding pin provided with a partial ball or sphere, a curb having a seat for said ball or sphere, and a movable nut to aid in keeping the ball or sphere seated in said seat, a slide made movable with said pin, and a toothed plate cooperating with said slide, a relative change of position of said toothed plate and slide being effected preparatory to driving a slug or nail, to thus lock said slide and pin in position temporarily, substantially as described.

9. In a jack, a hub, a plate having a shank guided by said hub and provided with an attached curb having a ball-seat, a spring to separate the plate carrying said curb and the said hub for a defined distance, a toothed locking-plate mounted loosely in said curb and sustained by suitable pins extended out-

wardly through the plate carrying the curb, a toothed plate fixed in said curb, and a toothed slide mounted between said toothed locking-plate and said toothed plate, combined with a last-holding pin provided with a ball or sphere entering said seat and actuating said slide, and means to keep said ball or sphere in operative position in said seat, substantially as described.

10. In a jack, the curb having the seat described, and a fixed toothed plate, a movable toothed slide, and a last-holding pin having a ball-like or spherical portion entering said seat, and a toothed slide adapted to be moved with said pin, combined with a toothed locking-plate which, by a change of position of said curb with relation to said toothed locking-plate, causes the latter to engage said slide, clamping it firmly between itself and the said toothed plate, thereby effectually locking the last-holding pin temporarily in a defined position according to the requirements of the work, substantially as described.

11. A plate adapted to be sustained by a horn-shank, a swing-plate movable freely thereon and provided with a hub, a plate having a shank inserted in said hub and provided with a curb having a concaved seat, a spring to normally keep said plate and curb in its elevated position, a last-pin having a ball-like or spherical portion mounted in said seat, means to retain said ball-like or spherical portion in said seat yet permit it to be moved freely therein, combined with locking means cooperating with the lower end of said pin to lock it whenever the relative positions of the said plate and its attached curb are changed with relation to the said hub, to thereby temporarily lock the last-holding pin in any desired position for the driving of a slug or nail, substantially as described.

12. The swing-plate, a support for it, a guided shank vertically movable with relation to said swing-plate, combined with a last-holding pin supported by and universally movable with relation to said shank, and means to lock said last-pin in any position in which it may be put, while a nail or slug is being driven, substantially as described.

13. A universally-tipable work-support and means to lock said work-support against tipping, said locking means being operative only when the work is under pressure.

14. A universally-tipable work-support and means to lock said work-support against tipping, said locking means being automatically operative when the work is under pressure.

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

LOUIS A. CASGRAIN.

Witnesses:

GEO. W. GREGORY,
MARGARET A. DUNN.