Aug. 4, 1931. D. J. AJOUELO 1,817,224

HAND NAILING IMPLEMENT

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Fig. 1.

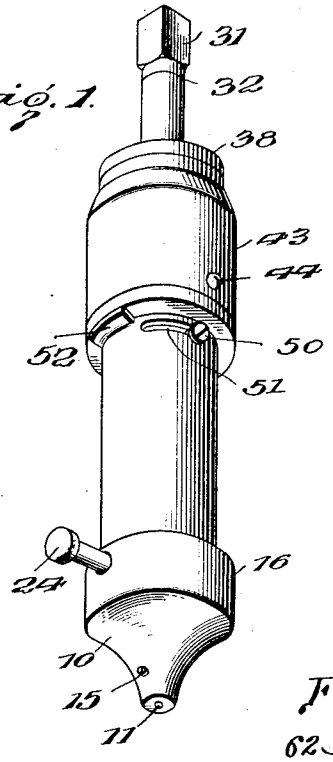


Fig. 5.

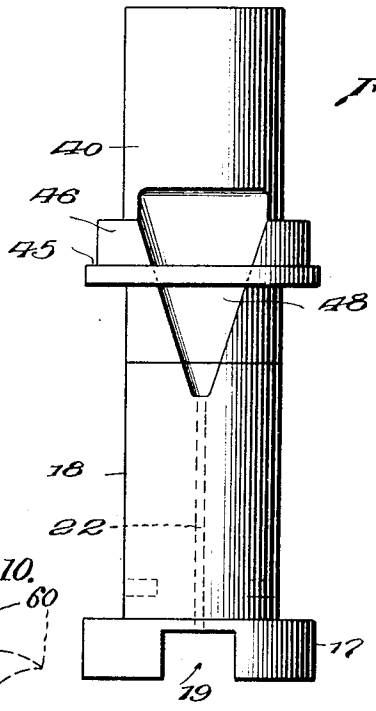


Fig. 10.

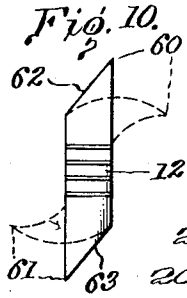


Fig. 6.

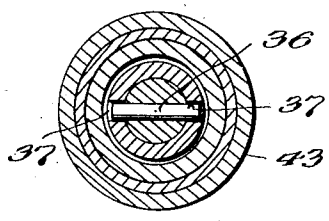


Fig. 8.

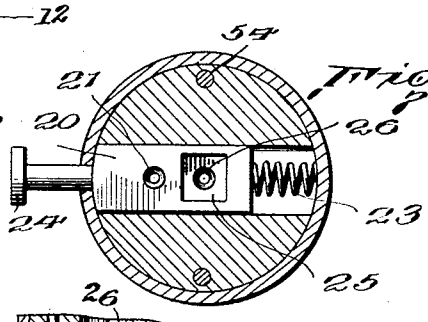


Fig. 7.

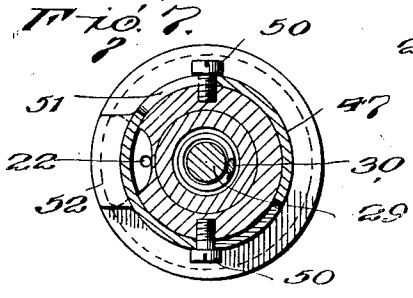
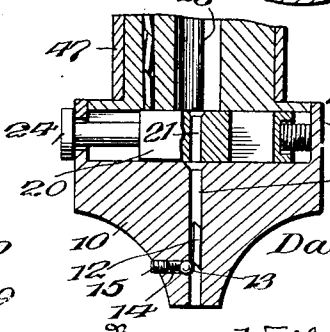


Fig. 9.



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Fig. 2.

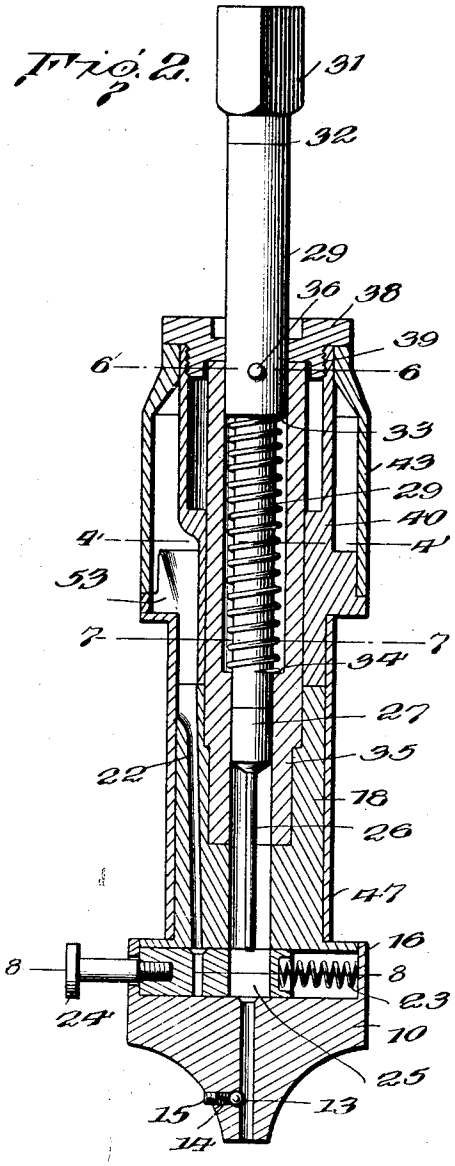


Fig. 3.

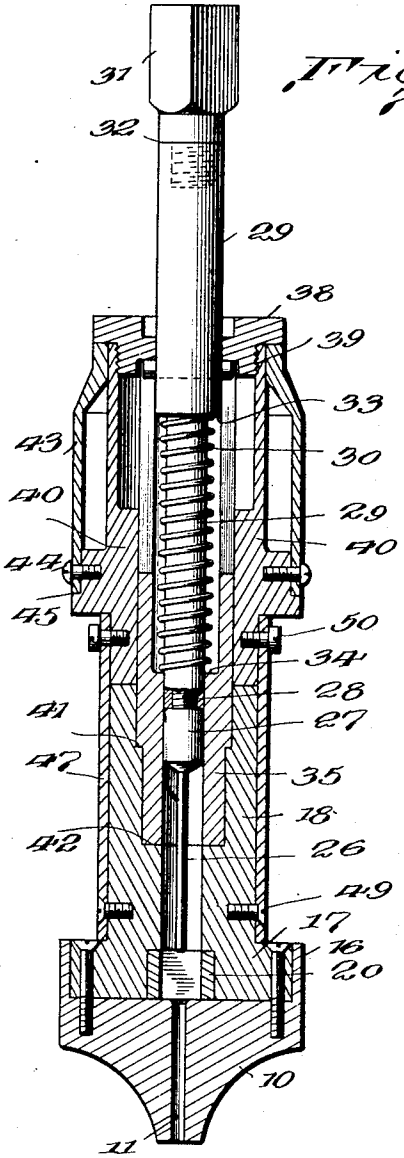
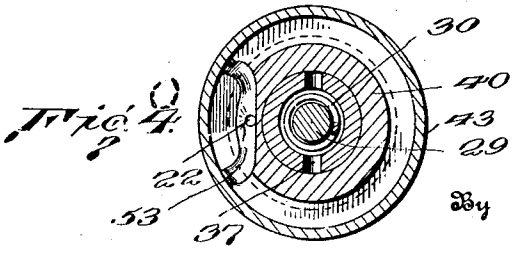


Fig. 4.



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UNITED STATES PATENT OFFICE

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HAND NAILING IMPLEMENT

Application filed October 19, 1929. Serial No. 400,936.

The present invention relates to improvements in hand nailing implement and has for an object to provide an implement more particularly useful in connection with the nailing of shoes in which a magazine is provided for maintaining great quantities of these nails and with mechanism for feeding these nails and driving the same into the shoe rapidly and expeditiously.

Another object of the invention lies in providing an improved hand nailing implement in which the magazine may be replenished with nails with great facility and in which the nails are fed singly from the magazine to the nail punch.

A further object of the invention is to provide an improved tool of this character in which a clinching operation is had upon the nail.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views.

Figure 1 is a perspective view of an improved hand nailing implement constructed according to the present invention.

Figure 2 is a longitudinal central sectional view taken on an enlarged scale through the improved implement.

Figure 3 is a similar view taken at substantially right angles to Figure 2.

Figure 4 is a cross section taken on the line 4—4 in Figure 2.

Figure 5 is an enlarged detail elevation of the magazine sections shown detached from the implement.

Figure 6 is a cross section taken on the line 6—6 in Figure 2.

Figure 7 is also a cross section taken on the line 7—7 in Figure 2.

Figure 8 is a cross section taken on the line 8—8 also in Figure 2,

Figure 9 is a fragmentary longitudinal section of the lower part of the implement similar to Figure 2 but with the nail feeding device in a subsequent position, and

Figure 10 is a side view of the improved nail employed.

Referring more particularly to the drawings, 10 designates a base, which as shown in Figure 9 is provided with a channel 11 to receive the nail 12.

The nail employed is preferably of the headless type, having both ends beveled. The nail 12 is adapted to be suspended in the channel 11 above the lower or discharge end of such channel as by a spring pressed ball 13 projecting a short distance into the channel and urged thereinto as by a coil spring 14. The ball and spring are contained in a recess in the base piece 10 which opens through the side of such base piece and is normally closed by a screw cap 15 which may be removed to give access to the interior part. The base 10 is preferably provided with the incurved side wall to permit the tip of the device to be placed close to the shoe sole or to any other part into which the nails are to be driven and considerable clearance is thus given the device.

The upper end portion of the base 10 is provided with an upstanding flange 16 providing an enclosed space at the upper end of such base piece for receiving the foot 17 at the bottom of the lower magazine section 18.

The magazine is shown more particularly in Figure 5, and the foot 17 thereof is provided with a recessed or cut away portion 19 to receive therethrough a slide 20 which acts as a nail feeding device from the magazine to the base channel 11.

The slide 20 is provided with an opening 21 of substantially the same diameter as the nail 12 and this opening is adapted to register with the nail delivery slot 22 in the magazine section 18, as shown in Figure 2. A coil spring 23 is adapted to retain the slide 20 in this initial position illustrated in Figure 2; and a push button 24 connected to the slide and projecting exteriorly of the implement provides means whereby the slide may be pushed over to the position illustrated in Figure 9 in which the opening 21 is brought into alignment with the channel 11 whereby the nail 12 may descend until checked by the ball 13. The slide 20 is confined in place

as to its ends by the flange 16 of the base and as to its sides by the shoe or foot 17. The slide 20 is also provided with a larger opening 25 which is normally above the channel 11 of the base as shown in Figure 2. This large opening 25 accommodates the plunger pin 26. The plunger pin is of a diameter to snugly fit the channel 11. The plunger pin 26 is provided with a head 27 having a threaded shank 28 screwed into a complemental socket in the lower end of the plunger 29. In this manner the plunger pin 26 may be removed and replaced from time to time. A coil spring 30 surrounding the plunger 29 acts to elevate the plunger and the plunger pin 26 to substantially the position shown in Figures 2 and 3.

The plunger 29 extends upwardly above the enclosed parts of the device and is adapted to receive at its upper end an anvil piece 31 for receiving blows from a hammer or other appropriate tool. As shown in Figure 3, the anvil piece 31 is preferably detachably connected with the plunger as by a screw threaded joint indicated at 32 which will enable the removal and replacement of the anvil piece as the same becomes worn from repeated hammer blows. The upper end of the coil spring 30 is adapted to take against a shoulder 33 on the plunger 29. The lower end of the coil spring 30 takes against a shoulder 34 on a guide sleeve or bushing 35 which surrounds the plunger and a portion of the plunger rod. The head 27 and the lower end of the plunger are adapted to slide snugly in the lower portion of the guide sleeve 35 by which the movements of these parts is properly directed. As shown in Figures 3 and 6, the upper portion of the plunger is provided with a pin 36 having ends extending at both sides laterally beyond the plunger and fitted to slide in slots 37 in the upper portion of the guide sleeve 35. This pin supplements the lower portion of the guide sleeve so that the plunger has a bearing at two remote points in the guide sleeve and lateral movement or wobbling of the plunger is avoided.

A cap 38 is fitted over the plunger and provided with a threaded flange 39 adapted to screw into the upper magazine section 40. The cap 38 takes against the guide sleeve and holds the same down upon the shoulders 41 and 42 in the lower magazine section 18. The guide sleeve 35 also fits snugly into the interior of the lower portion of the upper magazine section 40 whereby to retain the same in place.

The magazine is comprised between the upper magazine section 40 and an outer jacket 43 spaced therefrom and held thereto as by the use of set screws 44. The upper end of the jacket 43 is reduced in diameter and converges to meet the wall of the upper magazine section 40 and to fit beneath the rim of the cap 38 whereby the upper end of the magazine is closed. The lower end of the jacket 43 fits against a shoulder 45 upon the upper magazine section 40. This shoulder 45 is carried by an enlarged band portion 46 on the upper magazine section which acts to space the jacket from the magazine walls. A casing 47 extends about the lower magazine section 18 and the lower portion of the upper magazine section 40 concealing the joint between the same and also partially confining the hopper 48 at the top of the nail delivery slot 22.

The hopper 48, as more particularly shown in Figure 5, is provided with downwardly convergent walls leading to the upper end of the nail slot 22, the arrangement being such that the nails will be delivered to the slot only on end whereby they will lie in the slot in the manner shown in Figure 9 and thus insure their delivery to the slide and to the base.

The casing 47 is fixed to the lower magazine section 18 as by the use of screws 49. The casing 47 at its upper end is rotatably connected with the upper magazine section 40 as by the use of set screws 50 which engage through slots 51 in the casing 47. A lip 52 on the casing is adapted to close a mouth 53 of the magazine. The lip is shown in the closed position in Figure 1.

Screws or other fastenings 54 are let in through the foot 17 and engage in the base 10 for holding these parts removably together.

In operation, the magazine is filled with nails of the type shown in Figure 9 preferably by first rotating the casing 47 with reference to the upper magazine section whereby the lip 52 will expose the mouth 53 of the magazine. The implement being inverted, nails may be poured in through the opening 53 until the magazine is properly filled. Then before righting the implement, the casing 47 is rotated back to original position so that the mouth of the magazine is closed by the lip 52. When the magazine is then stood upright, the nails will fall into the hopper 48, the walls of which will direct such nails down into the slot 22 where the nails will be upended and will rest end to end upon one another, the lowermost nail in the slot 22 being received against a blank portion of the slide 20 until the spring 23 shifts the slide back to the position shown in Figure 2 where the opening 21 is in position to receive a nail 12. The upper end of the opening 12 is beveled in order to guide the next uppermost nail out of the device should the end thereof tend to project into the opening 21 and interfere with the movement of the slide 20.

When the slide 20 is pushed over to the position shown in Figure 9, the nail 12 will descend into the channel 11 and against the ball 13 which will prevent it from dropping through the base and being lost until it is properly applied to the shoe and the plunger driven down as by striking with a hammer

or mallet. When the plunger is driven down, the plunger pin 26 enters through the channel 11 and drives the nail 12 downwardly, the ball 13 yielding to permit passage of same. The nail is not only driven into the shoe but it is also clinched by the action of the plunger pin. The coil spring 30 will restore the plunger and plunger pin to the upper position immediately following the blow.

Referring more particularly to Figure 10, the improved nail 12 is shown having the pointed ends 60 and 61 offset to relatively opposite sides of the nail. The nail ends are sloping or beveled in opposite directions as indicated at 62 and 63 and, when driven into the sole, the nail ends are adapted to clinch over in opposite directions as indicated by the dotted lines.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:

1. An improved hand nailing implement comprising a base, a lower magazine section removably coupled to said base, feeding means movable transversely above the base and through said magazine section, an upper magazine section above such lower section, housing means extending about said sections, a guide sleeve mounted within said sections and having an upper slotted portion, a plunger slidably extending through said guide sleeve and having a pin guided in the slotted portions of the sleeve, spring means for holding the plunger elevated, and a removable plunger pin carried upon said plunger for passing through the base.

2. An improved hand nailing implement comprising a base, a lower magazine section removably coupled to said base, feeding means movable transversely above the base and through said magazine section, said base being channeled and having a recess therein, a nail checking device consisting of a spring pressed ball mounted for reciprocation in said recess and normally blocking the channel in the base, an upper magazine section above said lower magazine section, housing means extending about said sections, a guide sleeve mounted within said sections and having an upper slotted portion, a plunger slidably extending through said guide sleeve and having a pin guided in the slotted portions of the sleeve, spring means for holding the plunger elevated, and a removable plunger pin carried upon said plunger for passing through the first mentioned base.

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