

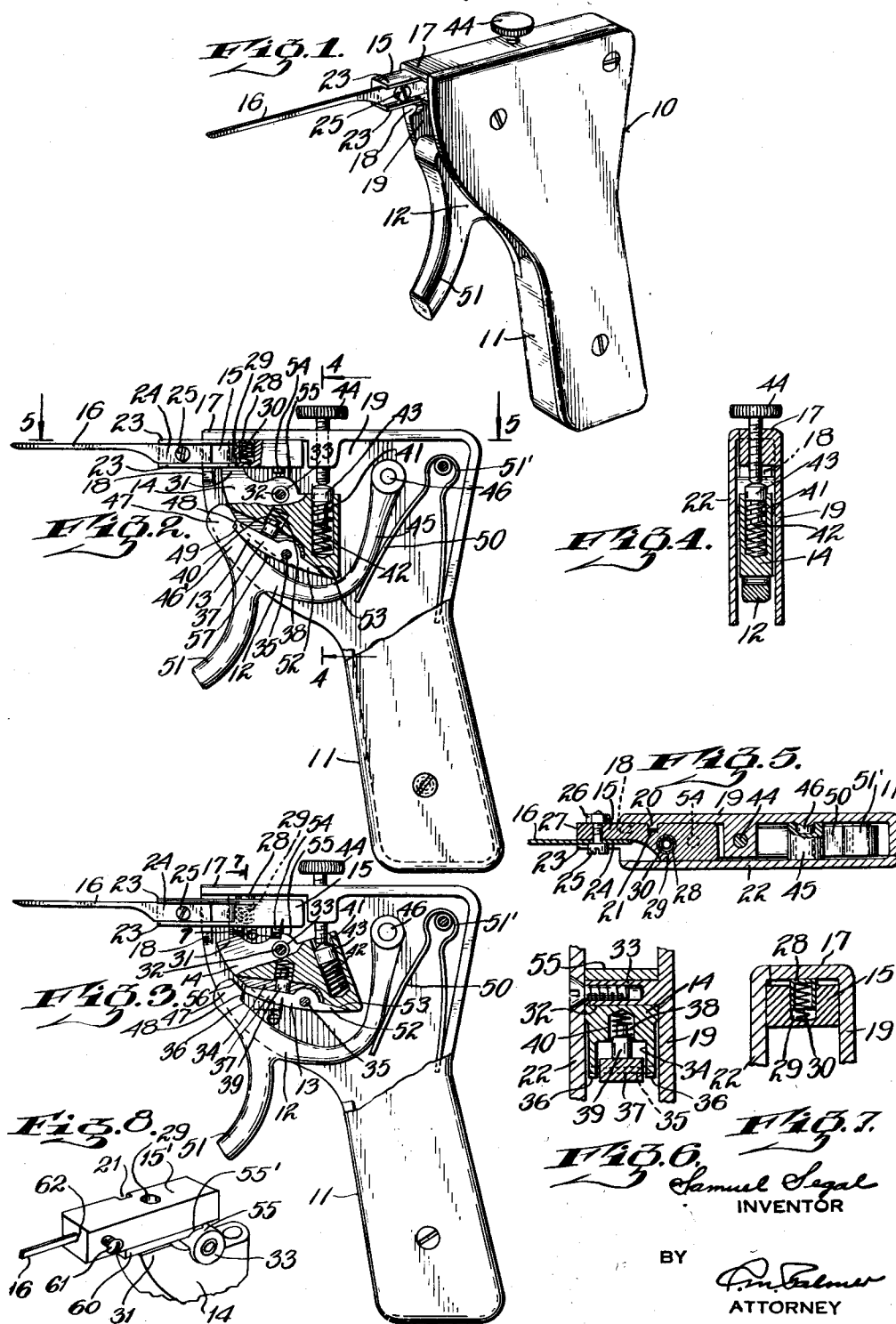
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LOCK PICKING GUN

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LOCK PICKING GUN

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6 Claims. (Cl. 81—3)

The present invention is directed to an impact producing implement and more particularly is concerned with a functionally and structurally improved serviceable lock pick gun and the objects, advantages, and features thereof will be apparent from the teachings of the following detailed description viewed in the light of the accompanying drawing wherein:

Fig. 1 is a perspective view of the lock pick gun according to my invention.

Fig. 2 is a front elevational view of Fig. 1 with parts broken away to show the internal construction.

Fig. 3 is a view similar to Fig. 2 however illustrating the impact delivering rocking arm in a released position and ready to impart a blow to the vertically shiftable lock pick shoe or holder.

Fig. 4 is a sectional view on the line 4—4 of Fig. 2.

Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 2.

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 3.

Fig. 7 is a sectional view on the line 7—7 of Fig. 3, and

Fig. 8 is a perspective view of a modified form of shoe and support.

Illustrative of the embodiment disclosed, the lock pin gun is generally denoted 10 and comprises a hollow metal casing 11, a pivoted trigger 12, a trigger locking pawl or dog 13 pivotally mounted on the pivoted impact delivering rocking arm or hammer 14, a vertically and bodily shiftable lock pick holder or shoe 15 and the lock pick 16.

According to the invention shoe 15, is vertically guided between upper and lower stops 17 and 18 integral with the back wall 19 of the casing by a key or rib 20 projecting from wall 19. More particularly rib 20 cooperates with the spaced transverse walls of the vertical keyway or slot 21 in the shoe to vertically and slidably guide the shoe between the back wall or plate 19 and the cover 22 of the case.

The shoe or pick holder 15 is provided with upper and lower flanges 23 defining a channel in which the expanded part 24 of the pick is inserted and clamping means in the form of a bolt 25 and nut 26 is utilized to hold the expanded part 24 firmly against the reduced part 27 of the shoe which overhangs the forward end of the casing. In the normal or retracted position of the trigger (Fig. 1) the shoe 15 is also in a retracted or elevated position, namely, the upper flange 23 together with the upper face of the shoe are against the upper stop 17 which serves as the top wall of the casing.

In such retracted relation of the shoe, it will be observed lower flange 23 is spaced or away

from the lower stop or seat 18 and cap or tumbler 28 which is telescopically slidable in bore 29 of the rear part of shoe 15 and which is now against the stop 17 compresses the helicoidal spring 30 in that the hammer portion 31 of the impact delivering device 14 is in its fully raised position and abutting the lower flange 23 of the shoe, thus supporting the latter.

The impact delivering device 14 includes the transversely arranged bore 32 receiving the fixed fulcrum post 33 which extends from the rear wall of the casing. By this arrangement the impact delivering device is pivotally or rotatably mounted on the fulcrum post 33. The impact delivering device also includes a recess 34 which is bridged by the fixed fulcrum post 35 secured to sides 36 of recess 34, which sides serve to tiltably guide pawl 13 pivotally sustained by post 35.

The latch or pawl 13 has its longest arm 37 normally urged outwardly by reason of the helicoidal spring 38 in part encompassing a post 39 fixed to arm 37 and in part projecting into a recess 40 in the impact delivering device or rotatable lever 14 which is provided with a bore 41 housing the normally expanded spring 42 surrounding the reduced stem of the slidable tumbler 43 telescopically receivable in bore 41.

For controlling the power of the impact to be struck by hammer portion 31 of the impact delivering device 14 against shoe 15 means has been provided for adjusting the power spring 42. To this end a threaded set screw 44 is employed. This set screw is threadably connected to stop 17 and to a depending lug integral with the stop and cooperates with the slidable tumbler 43 to regulate the desired kick back power in the spring 42.

As previously set forth the trigger 12 is normally in a retracted position as shown in Fig. 2. This trigger has one arm 45 pivoted on the fixed fulcrum post 46 fixedly carried by the rear wall of the casing. Another arm 46' of the trigger is provided with a nose or lip portion 47 having an inclined actuating shoulder or projecting catch 48 disposed in close proximity to end face 49 of the long arm 37 of pivoted pawl 15. As shown in Fig. 2 the forward end of trigger 12, which is normally held in a retracted position by reason of reach 50 of the inverted U shaped leaf spring 51' appropriately retained within the casing, is interlocked with the forward end of the pawl, that is, end face 49 of the pawl cooperates with shoulder 48 of the trigger to lock the latter against involuntary rearward displacement. If therefore the finger gripping portion 51 of the trigger is moved rearwardly, the trigger is caused to pivot rearwardly against the resistance of reach 50.

During this operation shoulder 48 abuts the end face 49 of the pawl, thus bodily shifting the latter rearwardly and since the tapered tail or short arm

52 of the pawl is against the inclined face 53 of the rockable hammer or impact delivering device 14 the latter is pivoted bodily or counter-clockwise. Thus the hammer portion 31 of the hammer or the impact delivering device 14 is moved away from the shoe 15 and the latter drops by gravity on the lower stop 18 and such action is accelerated by the expansion of spring 30 once the shoe 15 loses the support of the hammer. To resist tilting of the shoe 15 after the support of the hammer 14 has been removed, the rear end of the shoe has a projection 54 cooperating with the curved stop or seat 55 to limit downward displacement, that is, the shoe drops vertically at the beginning of an operative cycle which starts to take place at the beginning of the rearward stroke of the trigger thus causing the upper flange 23 of the shoe to fall away from stop 17. As the cycle continues the trigger continues to travel rearwardly, lip 43 continues to abut the latch which in turn causes the impact producing device to rotate or pivot rearwardly, that is, counter-clockwise at which time the helicoidal power spring 42 becomes compressed in that the shank of the set screw 44 forces the slidable tumbler into bore 41.

The impact producing device or hammer 14 rotates rearwardly until lip 47 of the trigger slips off from the end face 49 of the nose of the long arm 37 of the pawl 13. Thus the trigger becomes free of the pawl in which instant the power spring releases its energy and expands, thus causing the impact producing device to retract in a clockwise direction whereby the hammer portion 31 imparts an appreciable impact and shock against the lower flange 23 of the shoe 15 which is abruptly lifted or raised from its stops or seats 18 and 55 and against the energy spring 30 to abruptly position the upper flange 23 of the shoe against the stop 17. In other words, a sudden blow is imparted by the hammer portion to the shoe and consequently the pick thereof is also bodily lifted.

With the impact producing device 14 automatically restored to its normal position (Fig. 2), the trigger is also retracted automatically upon release of finger pressure on the manipulating portion 51 in which instant reach 50 of the leaf spring 51' urges the trigger forwardly. On the retraction of the trigger cam face 56 of the lip 47 contacts the bottom curved face 57 of the pivoted pawl 13 thus causing the long arm 37 of the latter to be rocked into the recess 34 against the action of spring 38 to permit lip 47 of the trigger to pass the nose or front end of the pawl after which spring 38 expands causing the arm 37 of the pawl to move outwardly again and interlock with lip 47, thus ending a complete cycle of operation and the trigger is again in its normal and waiting relation.

It follows therefore that on each cycle of operation, the lock pick drops against the lower stop as the trigger starts to recede, the hammer begins to pivot rearwardly, the power spring starts to store a certain amount of energy until the pawl becomes free of the lip of the trigger at which time the power spring suddenly dissipates its energy and the hammer automatically retracts to strike the shoe carrying the lock pick. Therefore the latter is elevated against the upper stop. Following this impact to the trigger retracts automatically to interlock with the pawl. Thus by the present arrangement a certain vibratory motion is imparted to the pick when the trigger is snapped through several cycles. The lifting impact to the pick is utilized to control certain tumblers of a conventional cylinder lock (not

shown), that is, in the matter of picking the latter. The lifting impact applied to the tumblers is transmitted to the drivers of the cylinder lock for parting the latter from the tumblers. Once this is established the cylinder lock is picked. This is in line with the well known principles of picking cylinder locks and further discussion in respect to the method of picking locks therefore need not be further discussed.

The shoe 15' according to the showing of Fig. 8 is provided with bore 62 for receiving the rear end of the pick 16 which is adjustably held clamped by the set screw 61. Attached to the bottom face of the shoe 15' is the block 60 which is of a suitable sound deadening material. This block is provided with an arcuate shoulder 55' cooperating with the curved stop 55 to prevent tilting of the shoe when hammer portion 31 of the rockable lever 14 is operated. In other structural aspects the form according to Fig. 8 is along the lines of the embodiment according to Fig. 1.

Without further analysis, the foregoing disclosure will so fully reveal the gist of the present invention that others may by applying current knowledge readily adapt it to various applications without omitting certain features, that from the standpoint of the prior art, fairly constitute the essential characteristics of the generic and specific aspects of the invention and therefore such adaptations should and are intended to be comprehended within the meaning and range of equivalency of the following claims.

I claim:

1. In an impact delivering device, a casing having upper and lower stops, a vertically displaceable shoe movable between said stops, a pick carried by said shoe and extending laterally of said casing, a pivoted hammer within said casing and having a shoulder, a power helicoidal spring within said hammer, adjustable means carried by said casing and cooperating with said spring for holding said hammer against said shoe to normally hold the latter against said upper stop, a pawl pivoted to said hammer and having a forward portion, spring means normally urging said forward portion of said pawl out of said hammer, a trigger pivotally sustained within said casing and having a catch, a leaf spring for normally holding said catch to interlock with said portion, and a manipulator carried by said trigger for operating the latter to shift said pawl to rearwardly and pivotally displace said hammer away from said shoe whereby the latter falls by gravity against said lower stop and whereby said adjustable means compresses said power spring until said shoulder is free of said forward portion of said pawl.

2. In an impact delivering device, a casing having upper and lower stops, a vertically displaceable shoe movable between said stops, a relatively thin pick carried by said shoe and extending laterally of said casing, a pivoted hammer sustained by and within said casing, a power helicoidal spring within said hammer, adjustable means carried by said casing and cooperating with said spring for holding said hammer against said shoe to normally hold the latter against said upper stop, a pawl pivoted to said hammer and having a terminal, spring means for projecting said terminal out of said hammer, a trigger pivotally sustained within said casing and having a shoulder, an inverted U shaped leaf spring for normally holding said trigger to removably engage said terminal and shoulder, and a manipulator carried by said trigger and disposed outside of said casing to shift said

pawl to rearwardly and pivotally displace said hammer away from said shoe whereby the latter falls by gravity against said lower stop and whereby said adjustable means compresses said power spring until said shoulder is free of said terminal at which time said leaf spring automatically retracts said trigger to tiltably shift said terminal of said pawl within the hammer to permit said shoulder to pass said terminal whereupon said spring means urges said terminal outwardly to engage with said shoulder.

3. In an impact delivering device, a casing having upper and lower stops, a vertically displaceable shoe movable between said stops, a relatively thin pick carried by said shoe and extending laterally of said casing, a pivoted hammer sustained by and within said casing and including a stop at the rear thereof, a power helicoidal spring within said hammer, adjustable means carried by said casing and cooperating with said spring for holding said hammer against said shoe to normally hold the latter against said upper stop, a pawl pivoted to said hammer and including a tail, spring means for projecting a forward portion of said pawl out of said hammer and said tail against said stop of said hammer, a trigger pivoted within said casing and having a catch, an inverted U shaped leaf spring for normally holding said catch to interlock with said forward portion, and a manipulator carried by said trigger and disposed outside of said casing for displacing said trigger to shift said pawl rearwardly to rearwardly and pivotally displace said hammer away from said shoe whereby the latter falls by gravity against said lower stop and whereby said adjustable means compresses said power spring until said trigger is free of said forward portion at which time said leaf spring automatically retracts said trigger to tiltably shift said forward portion of said pawl within the hammer and said tail away from said stop of said hammer to permit said catch to pass by said forward portion whereupon said spring means urges said forward portion outwardly of said hammer to interlock with said catch.

4. In an impact delivering device, a casing having upper and lower stops, a vertically displaceable shoe movable between said stops, a relatively thin pick carried by said shoe and extending laterally of said casing, a pivoted hammer sustained by and within said casing and including an inclined stop at the rear thereof, a power helicoidal spring within said hammer, adjustable means carried by said casing and cooperating with said spring for holding said hammer against said shoe to normally hold the latter against said upper stop, a pawl pivoted to said hammer and including a tail, spring means for projecting a forward portion of said pawl out of said hammer and said tail against said inclined stop, a trigger pivotally sustained within said casing and including a shoulder at its forward end, an inverted U shaped leaf spring for normally holding said trigger to removably engage said forward portion, and a manipulator carried by said trigger and disposed outside of said casing for shifting said shoulder against said forward portion of said pawl to rearwardly and pivotally displace said hammer away from said shoe whereby the latter falls by gravity against said lower stop and whereby said adjustable

means compresses said power spring until said shoulder is free of said forward portion at which time said leaf spring automatically and bodily retracts said trigger to tiltably shift said forward portion of said pawl within the hammer to permit said shoulder to pass the forward part of said pawl whereupon said spring means urges said forward portion outwardly to interlock with said shoulder.

5. In an impact delivering device, a casing having upper and lower stops, a vertically displaceable shoe movable between said stops, a relatively thin pick carried by said shoe and extending laterally of said casing and having a depending portion, a pivoted hammer sustained by and within said casing and including a curved stop, a power helicoidal spring within said hammer, a cap mounted on said spring, adjustable means carried by said casing and including a depending portion cooperating with said cap to compress said spring for holding said hammer against said shoe to normally hold the latter against said upper stop, a pawl pivoted to said hammer, spring means for projecting a forward portion of said pawl out of said hammer, a trigger pivoted within said casing and having a projection, an inverted U shaped leaf spring for normally holding said projection to removably engage said portion, and a manipulator carried by said trigger and disposed outside of said casing for shifting said trigger and said pawl to rearwardly and pivotally displace said hammer away from said shoe whereby the latter falls by gravity against said lower stop and against said curved stop and whereby said adjustable means compresses said power spring until said projection is free of said forward portion at which time said leaf spring automatically retracts said trigger to tiltably shift said forward portion of said pawl within the hammer to permit to pass said forward portion of said pawl whereupon said spring means urges said forward portion outwardly to interlock with said projection.

6. In an impact delivering device, a casing having upper and lower stops, a vertically displaceable shoe movable between said stops, a pick carried by said shoe and extending laterally of said casing, a spring controlled tumbler vertically slidable within said shoe and cooperating with said upper stop, a pivoted hammer within said casing, a power helicoidal spring within said hammer, adjustable means carried by said casing and cooperating with said spring for holding said hammer against said shoe to normally hold the latter against said upper stop, a pawl carried by said hammer, spring means normally urging a forward portion of said pawl out of said hammer, a trigger pivotally sustained within said casing and including a projecting catch, a leaf spring for normally holding said catch to displaceably interlock with said portion, and a manipulator carried by said trigger for operating the latter to shift said pawl to rearwardly and pivotally displace said hammer away from said shoe whereby the latter falls against said lower stop and whereby the adjustable means compresses said power spring until said trigger is free of the forward portion of said pawl.

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