June 19, 1962 K. D. STONE ETAL 3,039,467

TATTOO GUN

Filed Dec. 18, 1959 2 Sheets-Sheet 1

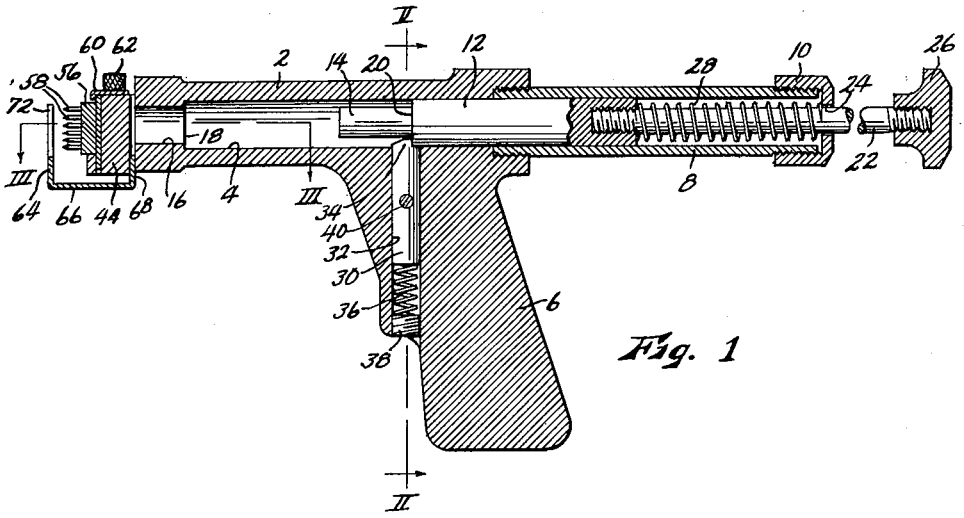

Fig. 1

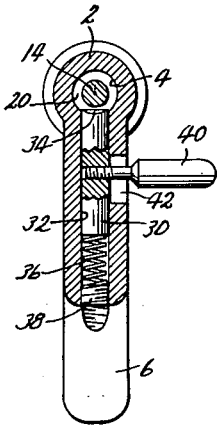

Fig. 2

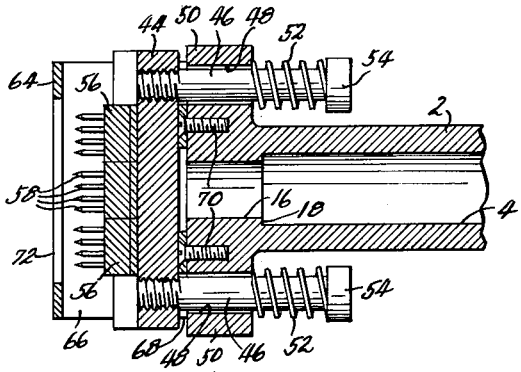

Fig. 3

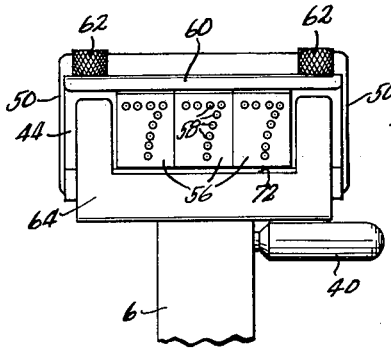

Fig. 4

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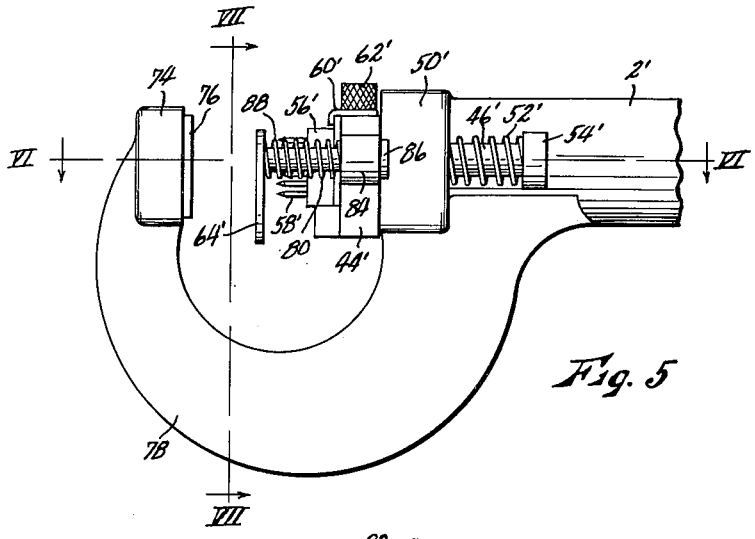

Fig. 5

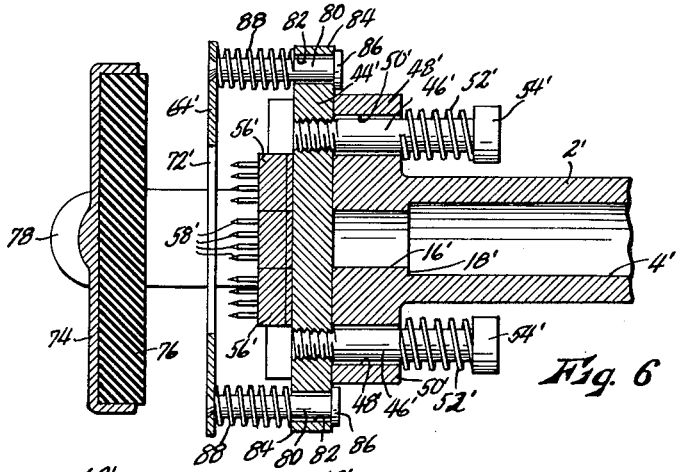

Fig. 6

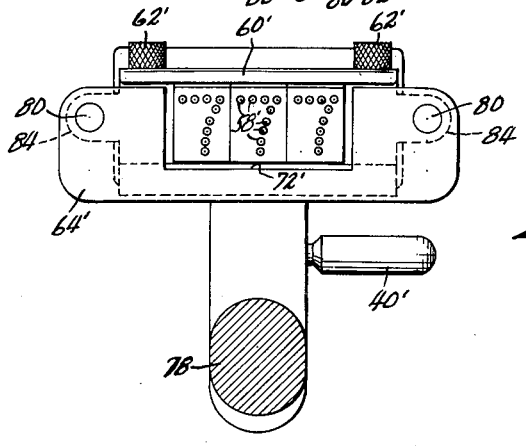

Fig. 7

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3,039,467

TATTOO GUN

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1 Claim. (Cl. 128—329)

This invention relates to new and useful improvements in tattoo instruments, and has particular reference to a tattoo instrument particularly adapted for use in marking livestock permanently for the purposes of breeding registry, branding identification, etc.

An important object of the present invention is the provision of a tattoo instrument in which the tattoo numerals, letters or other indicia are outlined by a series of needles mounted on a head carried movably by a body member, said head being movably impelled by a striker which is held in a cocked position in said body member, and is releasable by a trigger mechanism. Thus when the indicia head is held adjacent the body portion of the animal to be tattooed and the trigger is actuated, the said needles will be projected into the animal's flesh. The preset tension of the striker spring provides that the striking force will be precisely the same on each operation, thereby procuring uniform penetration of the needles for maximum efficiency. Tattoo ink or coloring matter is rubbed into the needle wounds immediately after the needles have been withdrawn. Ordinarily the animal is treated with a local anaesthetic before the tattooing operation.

Another object is the provision of a tattoo instrument of the character described having novel means for visually aligning the plane of the points of said needles precisely parallel with the skin surface to be tattooed, whereby upon operation all of the needles will penetrate to a uniform depth. This is important in procuring uniform and legible tattooing.

A further object is the provision of a tattoo instrument of the character described having novel means for withdrawing the needles from the animal's flesh after penetration has been accomplished.

A still further object is the provision of a tattoo instrument of the character described which is readily adaptable for use either on a portion of the animal's body having a bony structure immediately therebehind to support the force of the tattooing blow, such as the lip of a horse, or on a relatively unsupported portion of the body such as the ear of a cow.

Other objects are simplicity and economy of construction, ease, efficiency and dependability of operation, and adaptability for use in a wide variety of applications.

With these objects in view, as well as other objects which will appear in the course of the specification, reference will be had to the drawing, wherein:

FIG. 1 is a longitudinal sectional view through a tattoo gun embodying the present invention, shown in its cocked position, with parts left in elevation and parts broken away,

FIG. 2 is a sectional view taken on line II—II of FIG. 1,

FIG. 3 is an enlarged, fragmentary sectional view taken on line III—III of FIG. 1,

FIG. 4 is a fragmentary front elevational view of the tattoo gun as shown in FIG. 1,

FIG. 5 is a fragmentary side elevational view of a modified form of tattoo gun, showing only the forward portion thereof,

FIG. 6 is a sectional view taken on line VI—VI of FIG. 5, and

FIG. 7 is a sectional view taken on line VII—VII of FIG. 5.

Like reference numerals apply to similar parts throughout the several views, and in FIGS. 1–4 the numeral **2** applies to the body member of the gun, said body member being tubular with a cylindrical bore **4** extending longitudinally therethrough. Adjacent its rearward end, said body member is provided with an integral, transversely extending pistol-type hand grip **6**. Threaded into the rearward end of the body member, so as to form an extension of bore **4**, is a tubular body extension **8** closed at its rearward end by a threaded cap **10**. Disposed slidably in bore **4**, and in extension **8**, is a cylindrical striker **12** having a forwardly projecting nose portion **14** of reduced diameter operable to project forwardly of the body member through the reduced forward portion **16** of bore **4** when the striker is driven forwardly in the bore. An internal shoulder **18** in bore **4** cooperates with a shoulder **20** on the striker to limit the forward movement of the striker. A cocking rod **22** is threaded into the rearward end of the striker, extending rearwardly therefrom axially through extension **8**, through an aperture **24** provided therefor in cap **10**, and having a finger knob **26** affixed to the rearward end thereof. A helical compression spring **28** is disposed about rod **22** within extension **8**, bearing at one end against cap **10** and at its opposite end against the rearward end of striker **12**, whereby as said striker is retracted rearwardly by pulling on knob **26**, said spring will be compressed.

Said striker is secured releasably in its retracted position by a trigger pin **30** carried slidably in a bore **32** of handle **6** which intersects and is disposed at right angles to bore **4**. Said trigger pin is provided at its inner end with a tooth **34** which engages shoulder **20** of striker **12** to hold the striker in its retracted position. Said trigger is urged inwardly toward its operative position by a spring **36** carried in bore **32** and compressed between the outer end of the trigger pin and a plug **38** threaded into said bore. Said trigger pin may be disengaged from the striker by means of a release bar **40** threaded into the trigger pin and extending transversely thereto through a slot **42** in the wall of bore **32** formed by handle **6**, said slot being elongated parallel to the axis of the striker pin. When grip **6** is held in the right hand, the thumb is disposed conveniently to press on bar **40** to move the trigger pin out of engagement with shoulder **20**, whereupon the striker is driven forwardly by spring **28**. Spring **28** is preferably of such length that it is fully extended and relaxed before striker nose **14** projects through the forward end of the body member.

A "digit" block **44** is disposed at the forward end of body member **2** so as to overlap the forward end of bore **4**. It is supported movably by a pair of spaced apart screws **46** parallel to the axis of bore **4**, said screws being fixed at their forward ends in block **44** and extending rearwardly therefrom. Said screws extend slidably through apertures **48** provided therefor in a pair of oppo-

sitely extending ears 50 formed integrally with body member 2. Thus block 44 is supported by body member 2 for movement toward and from the forward end of said body member. It is urged yieldably toward said body member by a pair of coil springs 52 coiled respectively about each of screws 46 and compressed between the associated ear 50 and the head 54 of said screw.

A plurality of needle holders 56 are mounted on the forward face of block 44, each of said holders having a plurality of needles 58 affixed therein and projecting forwardly therefrom to outline a numeral, letter, or other desired indicia. The points of all of said needles are disposed in a plane at right angles to the axis of the body member. Holders 56 are preferably detachably connected to block 44 by means including a clamp bar 60 and screws 62, in order that any desired plural-digit numeral or other composite mark may be set up, but the specific structure for providing this detachable mounting forms no part of the present invention, and is not here described in detail.

A guide and stripper plate 64 is disposed forwardly of needles 58, in a plane parallel to the plane of the needle points. It is supported rigidly relative to body member 2 by a rearward extension 66 thereof which passes beneath block 44, and an extension 68 projecting upwardly from the rearward edge of extension 66 between block 44 and the body member. Extension 68 is secured to the body member by screws 70 (FIG. 3), and is apertured to permit the passage therethrough of screws 46, and to prevent obstruction of the forward end of bore 4. Guide and stripper plate 64 is provided with a window 72 through which needles 58 may project forwardly when block 44 is driven forwardly by spring 28.

The tool as thus far described is particularly adapted for use in tattooing portions of an animal's body immediately backed by hard bony structure. For example, an accepted position for tattooing horses is the inner surface of the upper lip, the lip being turned back and laid back against the skull structure immediately above the mouth. The skin is preferably first deadened by a topical anaesthesia. The gun is then held so as to place plate 64 flat against the lip. The plate thus acts as an alignment guide insuring that the needle points are disposed in a plane parallel to the skin surface to be tattoed, so that when the needles are projected forwardly as will be described, all of them will penetrate the lip to a substantially uniform depth. This is important in providing a uniform and legible marking. The long, slim and straight configuration of the body member 2 and its extension 8 is also of assistance in visually aligning the gun. When the gun is properly aligned, release bar 40 is pressed downwardly as previously described, withdrawing trigger tooth 34 out of engagement with striker shoulder 20, whereupon the striker is driven forwardly by spring 28 and impelled against block 44, driving said block forwardly against the pressure of springs 52. Needles 58 are thereby projected forwardly through window 72 of plate 64, and driven into the skin and flesh of the lip. Since the striker is impelled by spring 28, and since the tension of the spring is regulated by the distance to which the striker has been retracted, and the retraction is determined by the placement of trigger pin 30, it is apparent that the hammer blow delivered by the striker is pre-determined, not subject to the judgment of the operator, and will be the same each time the gun is operated. This removes a source of human error and provides uniform marking over any number of operations. In this connection it should be noted also that plate 64 serves as a spacer regulating the distance from the lip to the needles prior to firing the gun. This regulation is also important in providing uniform penetration of the needles.

Immediately after the needles have penetrated the lip, they are withdrawn by springs 52. During this motion plate 64 strips the lip away from the needles, or perhaps more accurately speaking, holds the lip stationary while the needles are withdrawn therefrom. This is a useful

feature since the needles often tend to become rather tightly embedded in tough tissues. Immediately after the needles are withdrawn, tattoo ink or coloring matter is rubbed into the penetration wounds, so that when said wounds have healed a clearly visible marking will remain.

FIGS. 5–7 illustrate a modification of the gun particularly adapted for use in tattooing portions of an animal's body not having a bony backing for withstanding the impact of the gun. Principally contemplated is the ear tattooing of cattle. The modification is in most respects similar to that of FIGS. 1–4, corresponding parts thereof being designated by corresponding primed numerals, except for the addition of a fixed anvil, and modification of the means for mounting the guide and stripper plate. The anvil comprises a cup shaped holder 74 having a pad 76 of rubber or other penetrable material mounted therein, the face of said pad being disposed forwardly of and parallel to plate 64'. Holder 74 is connected to body member 2' by a C-shaped connector 78, said holder, connector and body member being preferably integral.

Since stripper plate 64' must be spaced sufficiently apart from the anvil to admit the animal's ear freely therebetween, and since said stripper plate must subsequently advance toward the anvil to clamp the ear, and the anvil is fixed to the body member, it will be evident that said stripper plate cannot be affixed to the body member as in FIGS. 1–4. Instead, a pair of pins 80 are affixed respectively in the ends of said stripper plate and extend rearwardly therefrom parallel to the axis of the tool. Said pins extend slidably through bores 82 formed therefor in a pair of ears 84 formed integrally with block 44', and each pin is provided at its rearward end with an enlarged head 86 which limits the forward movement thereof. A coil spring 88 is disposed about each of pins 80, being compressed between plate 64' and an ear 84, whereby to urge plate 64' forwardly.

When block 44' is driven forwardly by the striker as previously described in connection with FIGS. 1–4, stripper plate 64' initially moves therewith, since said plate is carried by said block. Movement of the plate continues until it has pressed the ear firmly against anvil pad 76, whereupon said plate is arrested. The pressure loading of the ear between the anvil and plate 64' aligns the ear accurately so that its surface is parallel to the plane containing the points of needles 58', so that the penetration of all of the needles will be uniform. The forward movement of block 44' continues by reason of its momentum after plate 64' has been halted, causing compression of springs 88, and advancing needles 58' through window 72' of the plate to penetrate the ear. After penetration is completed, and as block 44 is retracted to its normal position by springs 52', plate 64' is urged forwardly relative to the block to strip the ear forwardly off of needles 58'. Except as above described, the operation of the modification of our invention shown in FIGS. 5–7 is identical to that of the species shown in FIGS. 1–4.

While we have shown and described certain specific embodiments of our invention, it will be readily apparent that numerous minor changes of structure and operation could be made without departing from the spirit of the invention as defined by the scope of the appended claim.

What we claim as new and desire to protect by Letters Patent is:

A tattoo gun comprising an elongated body member, a block carried by said body member at the forward end thereof for movement parallel to the axis thereof, resilient means urging said block rearwardly with respect to said body member, a plurality of forwardly projecting needles mounted on the forward face of said block and outlining the indicia to be imprinted, a striker carried by said body member for movement longitudinally thereof and operable on forward movement to engage and drive said block forwardly relative to said body member, means for impelling said striker forwardly relative to said body member, a planar anvil fixed to said body member and

disposed in spaced apart relation forwardly from said needles whereby to support a part to be tattooed as said block is driven forwardly by said striker, a planar guide plate supported by said block for forward and rearward movement relative thereto, and resilient means urging said plate forwardly with respect to said block, said plate when in its forward position being disposed intermediate said needles and said anvil, and having a window formed therein through which said needles are extended when said block is driven forwardly by said striker and movement of said plate is arrested by engagement with the part to be tattooed, which is in turn supported on said anvil.

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