

F. R. STEVENS.  
LIVE STOCK MARKER.  
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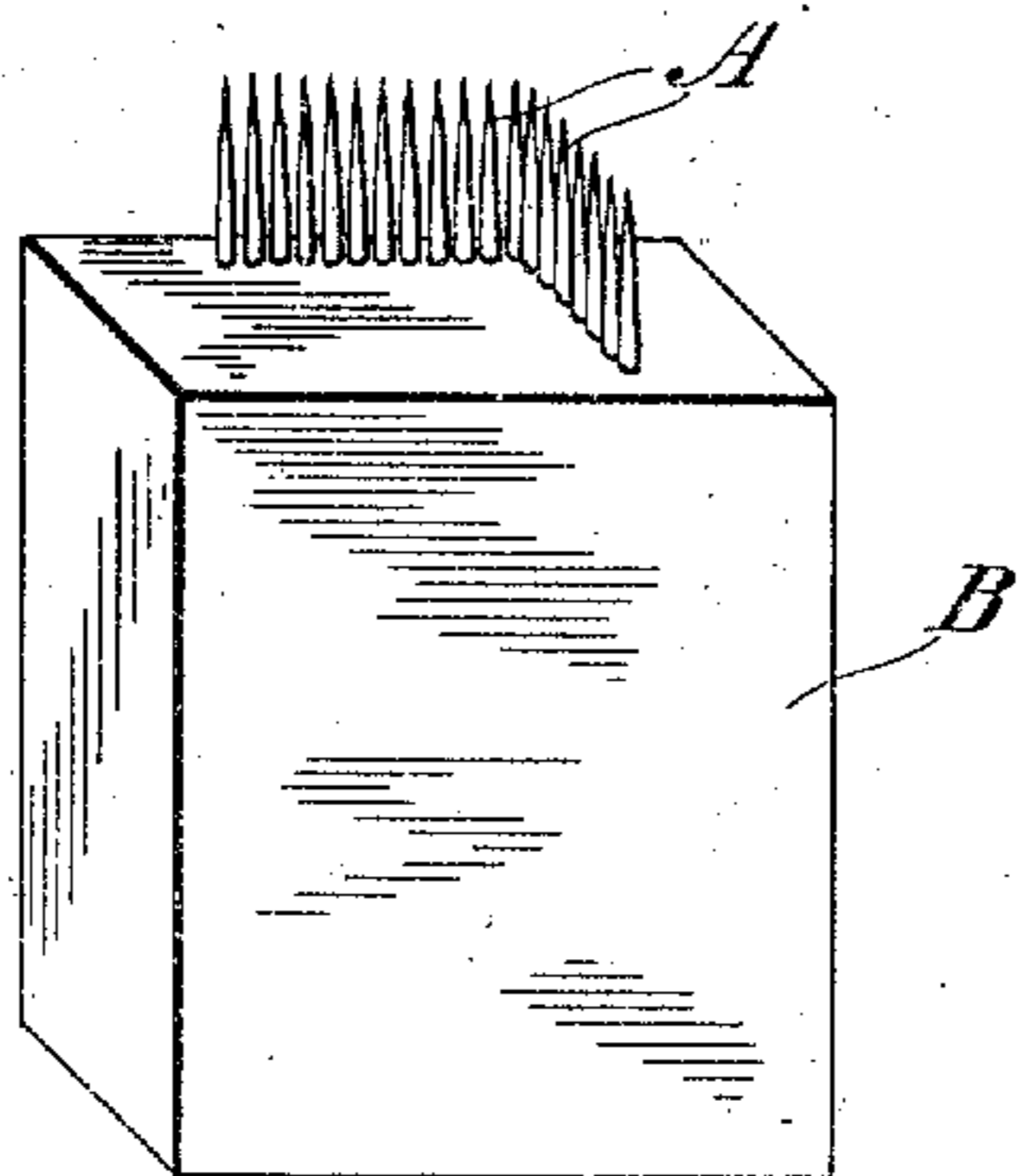


Fig. 1,

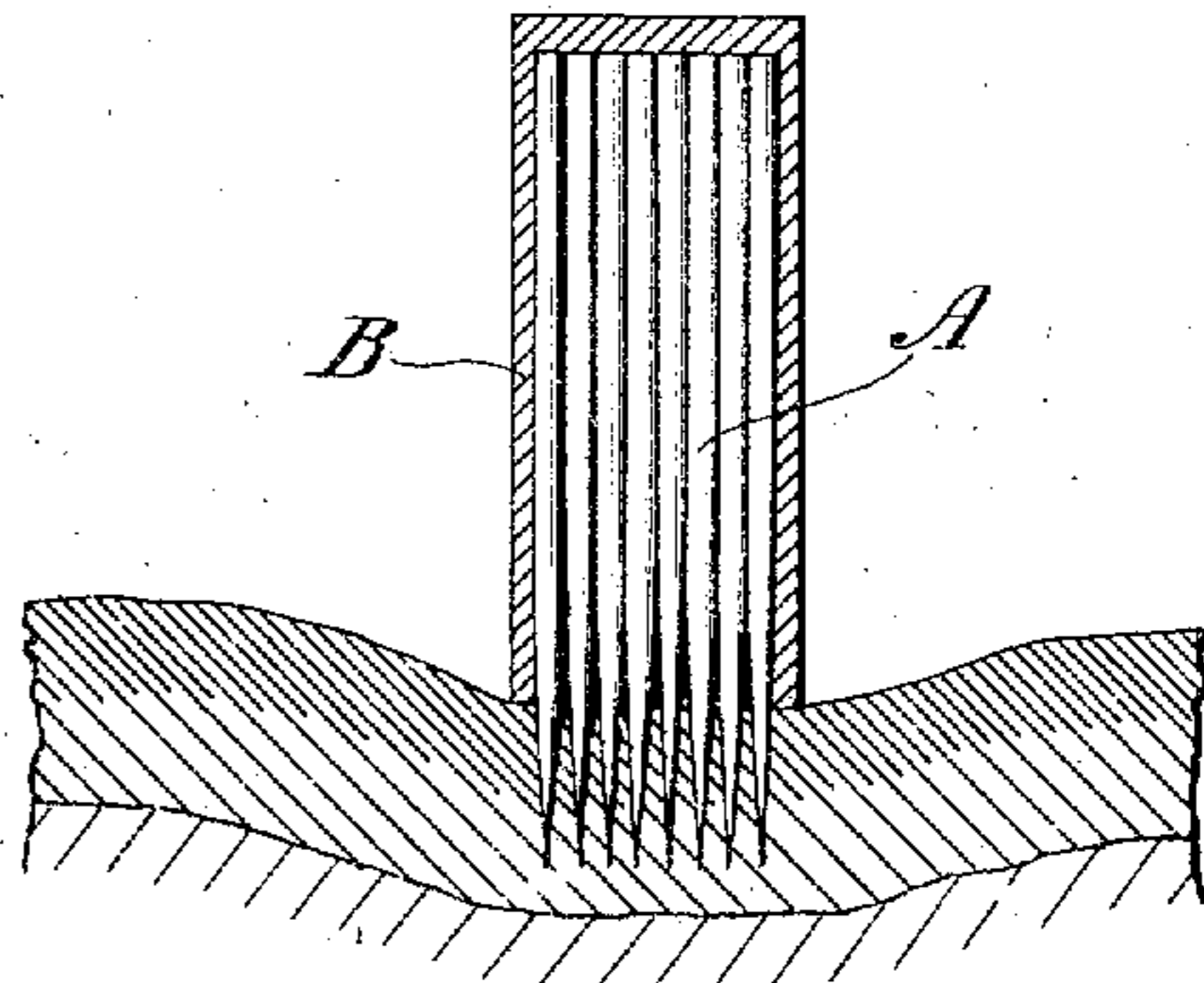
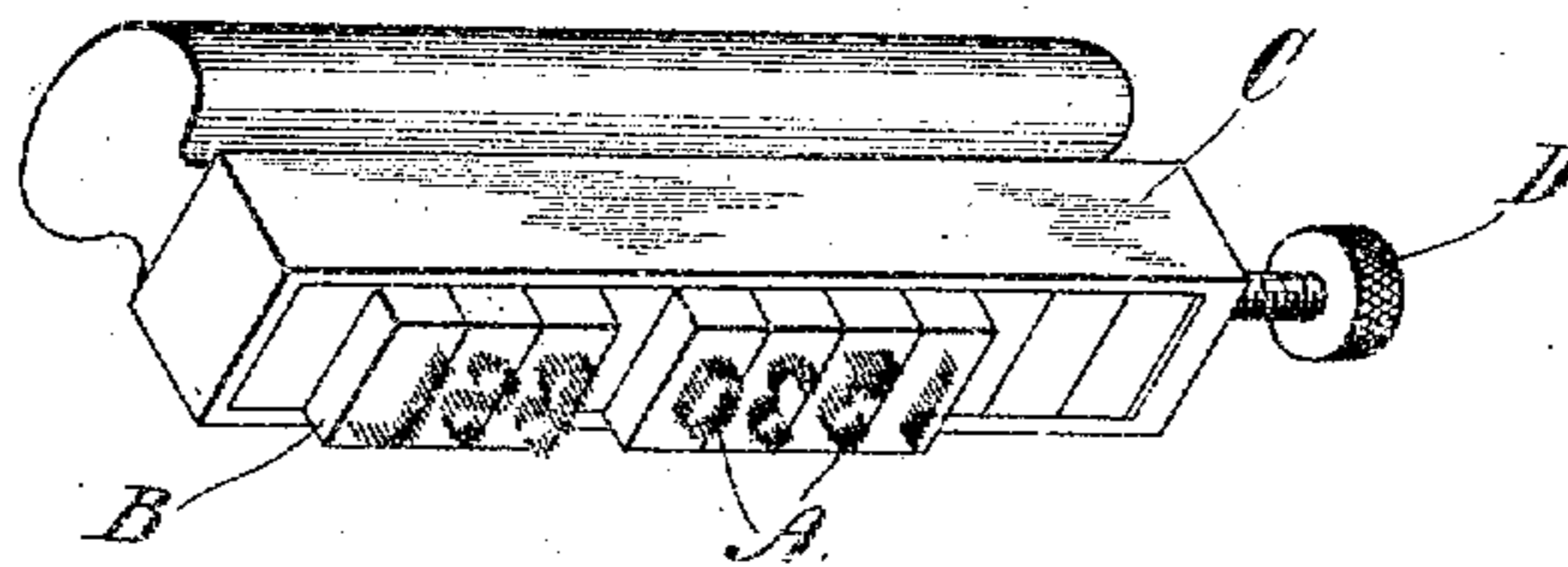


Fig. 2,

Fig. 3,



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# UNITED STATES PATENT OFFICE.

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## LIVE-STOCK MARKER.

976,225.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed March 4, 1910. Serial No. 547,272.

*To all whom it may concern:*

Be it known that I, FREDERICK R. STEVENS, a citizen of the United States, residing at Geneva, New York, have invented certain  
5 new and useful Improvements in Live-Stock Markers, of which the following is a full, true, and exact specification as required by statute.

The invention is an improvement in the  
10 art of marking cattle, poultry and other live stock for purposes of identification, and provides means for making a legible and absolutely permanent tattoo mark in the skin of the animal by a single, quickly performed  
15 operation not materially differing from the operation of an ordinary rubber hand-stamp nor requiring any greater skill or the application of any greater force on the part of the user.

The invention possesses further advantages in that the application of the mark by such method is unaccompanied by pain to the animal or followed by sores or scabs, and is not limited in the number or size of  
25 its component characters, each of such characters being composed of continuous-line markings which are plainly legible immediately upon making the impression.

These and still other advantages which  
30 will be apparent to those skilled in this art from the following description, are attained by the marking instruments embodying the principles of the present invention.

Devices hitherto proposed and to some extent exploited on the market for marking  
35 live stock by introduction of ink or pigment under the skin, have been constructed largely on the principles of leather punching instruments and have been composed of a series  
40 of small punches, usually wire-brads, arranged in the outline of the desired character and held in a suitable metallic block or backing, the whole block, with the points of the brads or punches projecting from it, being held in one of the jaws of a pair of tongs  
45 or pliers so that by the application of sufficient force to the handles of the tongs, the punches can be pressed into the animal's skin, thereby making a series of holes corresponding to the outline of the character.  
50 The ink or pigment has then to be rubbed into the open punch-holes, and thorough working in of the ink in this manner is imperative since by the ensuing suppuration  
55 and the process of healing of the wounds, a

large part of the ink will necessarily be carried off and if the remainder is not a considerable amount it will be obscured by the resulting scar. The deposit of an adequate quantity of ink is secured by making the  
60 punches about  $3/64$ ths of an inch in diameter and relatively blunt pointed so that the holes made by them will be open holes and hence be more reliably adapted to receive the necessary quantity of ink. For the formation  
65 of such open holes it is necessary that the several punches be suitably separated from each other as otherwise the effect is to break down the skin, making a single large hole or general contusion instead of a series of holes  
70 forming the outline of the character, and this necessary spacing results in a mark or character composed of individual dots which are correspondingly separated and the imprinted character, for this reason, cannot be  
75 made of a desirable smallness in size and at the same time be legible.

Frequently the extreme pointed ends of the brad punches are ground off to form square-ended points for increasing the clear  
80 opening of the holes left by them and thereby accommodating a larger quantity of ink. This obviously increases the power required for making the punch-holes, but in any case the resistance to the penetration is so great  
85 that a pliers or some equivalent power device is necessary and the consequent severe pain caused by the operation makes it necessary to confine or tie the animal securely before attempting to apply the mark.  
90

The purposes of the present invention are accomplished by means of a type block which may be of similar construction to the punch type blocks of the devices above referred to, but in which the blunt or square pointed  
95 and widely separated punches are supplanted by actual tattooing needles arranged closely together in the outline of the character to be imprinted, and limited as to the depth of their penetration as will be later  
100 explained. These needles are very fine and also very sharp so that they will enter the skin readily under a slight pressure such as can easily be exerted by the hand alone and without unusual effort, and they are as-  
105 sembled and held so close together that a fluid ink will be held upon them and in the crevices between them with sufficient adherence to be carried into the animal's skin, thereby in effect constituting an automatic  
110

means for injecting the ink, entirely obviating the necessity of subsequently rubbing it in. I have discovered that the ink thus held on fine and closely related needles is carried into the skin in abundant quantity to make an immediately and also permanently legible mark without any further treatment, the mark being an actual line mark by reason of the closeness of the needles, and I have further discovered that when the depth of penetration of such closely arranged needles is limited to a length that will enable them to penetrate the epidermis and into but not through the dermis or so-called true skin, the puncturing of the skin does not cause any appreciable pain to the animal so that special confinement or tying of the latter is rendered unnecessary, while the resultant mark, by being nearer the surface, is more sharply and cleanly defined. At the same time, the limited penetration of sharp, fine needles under the moderate pressure needed cannot injure the subjacent flesh tissue and hence does not produce sores such as might, by suppurating, discharge the ink pigment or, by forming scabs and ultimately scars, obscure the clearness of outline. A mark of any number and size of character that may be desired, is thus rendered possible to be imprinted upon the animal and on any part of its body that may be preferred, since all the pressure required can be obtained without the aid of tongs or pliers, the use of which is, of course, limited to parts of the animal that can be grasped in them.

The type blocks constructed on the principle above explained can be used singly, or several of them can be used at once, in a suitable type case or holder, so that, as above stated, an inscription of any desired length or number of characters can be simultaneously and uniformly imprinted in the skin. Where pliers have been hitherto used with more than a single punching type block, the objection has been present that the penetration nearest the fulcrum joint of the pliers has been deeper than at the points farthest from the joint, which frequently results in producing an irregular or uneven mark heavily blurred at one side and illegibly faint at the other. The new marking device possesses the further advantage that by reason of its construction above explained, it can be safely used for marking young animals the day or hour of their birth, which is a matter of considerable importance to breeders wishing to keep accurate records of fancy stock.

The accompanying drawings are intended to illustrate a form of type block such as above described.

Figure 1 shows, in perspective view, a single type block embodying this invention and on a greatly enlarged scale. The type block

shown is the character L. Fig. 2 is a sectional view of the same block illustrating the needle points penetrated the full distance into the skin, the scale of this view being the same as in Fig. 1. Fig. 3 is a perspective view of several type blocks held in the holder and ready for use, the scale being about the preferred actual size, although the diameters of the needles appear thicker than actually the case.

The needles, indicated by A in the drawings, are of the same shape and style of point as an ordinary sewing needle, and like such needles are made of tempered steel. The diameter of each needle corresponds exactly to the size of sewing needles universally known and sold as No. 10, which measures about 19/1000ths of an inch at the thickest part. These needles are assembled side by side, as shown, according to the outline of the particular letter or character; and preferably with their bases or thickest parts in actual contact, or nearly so, and about 35 or more of them to the half inch. The closeness of arrangement leaves crevices or spaces between the pointed end portions of adjacent needles so narrow that a fluid ink will be held therein and on the needles by the effect of capillary action and with sufficient tenacity of adherence to be carried by and with the needles into the skin, as above stated. By reason of the fineness of the needles, their closeness together does not result in a general contusion of the skin as in the case of the punching pins of the prior devices, when such pins are too closely assembled, but each fine needle-point makes its own fine hole, and when withdrawn leaves the ink properly deposited, the succession or series of fine markings thus made constituting a continuous-line mark since the individual punctures are not visible except on very close inspection and the pigmentation is actually continuous. The series of needles making up the mark or character are supported in a rectangular backing block B of lead or type metal cast around their base portions, or by any other suitable means of support, and their sharp points project beyond the impression face of the block or support only far enough to enable them to reach through the outer skin or epidermis and project into the true skin, as roughly illustrated by Fig. 2 wherein the close section lines indicate the epidermis and the separated lines the dermis. Such limited depth of penetration amounts in the actual device to 1/8th to 1/16th of an inch and the lesser penetration, viz. 1/16th inch, is preferred since such depth is found to be adequate to reach the dermis of all domestic animals without danger of piercing through the same and into the flesh, which, if deeply pierced, would tend to cause pain to the animal as well as subsequent soreness. The fineness of the needles also contributes to the

painlessness of their penetration and in conjunction with the limited extent of such penetration, entirely eliminates the inconvenience of having to confine or tie the animal before applying the mark. The fineness of the needles, moreover, results in the further advantage that the several punctures made by them are themselves so fine that they close up immediately on the withdrawal of the needles and thus positively confine the marking ink that has been introduced therein in the manner above explained, so that even in the event of a penetration of the flesh tissues, bleeding at the punctures and consequent washing out or dilution of the ink cannot take place. This feature of the operation of the new device renders the mark visible in what is virtually its permanent condition as soon as it is made, thereby providing assurance to the operator that the mark as imprinted is as it should be.

In using the new marking device, the ink is first applied to the needles, by dipping them in a shallow ink receptacle or by means of a brush, so that the exposed or operative portions of the needles are uniformly wetted therewith, the ink being held in place by the effect of capillarity due to their fineness and closeness as above fully described. The needle-points are then pressed firmly against and into the skin surface and then immediately withdrawn, and thereupon the entire marking operation is completed and a reliably permanent line-mark impression is left on the animal corresponding exactly to the arrangement of the needles.

Where several characters are desired to be simultaneously imprinted, a type case or holder is used, such as illustrated in Fig. 3, where the several blocks and the necessary spacers are assembled in their proper sequence in the receptacle C and clamped in place by pressure exerted by the set screw D. The holder is provided with a handle like that of an ordinary rubber stamp, so that it can be held in one hand with the ink applied, while the ear or a part of the skin of the animal is taken in the other hand and the two then pressed together. In cases where the surface to be imprinted is a portion of the main integument of the animal's body, simply pressing the device against the spot where the mark is wanted, without otherwise supporting the skin, is all that is required. The number of characters that can be thus simultaneously imprinted on the animal's skin is limited only by the size of the holder, which can obviously be made as large as desired, and the available space on the animal, and in any case, a full impression will be taken from each character, both ends or sides of which will be equally clear and legible. The size of the individual characters is likewise a matter of choice, provided the needles forming the outline

thereof are sufficiently fine and sufficiently close together to hold the amount of ink thereon necessary to produce a reliable deposition of the same by the single stamping operation above explained. A letter or character about 1/4th inch high is a desirable and preferred size, since such dimension, in continuous-line characters, will permit the imprinting of a series or succession of marks, from time to time, constituting the stud-book record or numbers or the history of the particular animal, all within the limited area of one of its ears, or will allow the imprinting of the full name of the owner or breeder, or of the several successive owners, etc., in the same area, all of which will be found of great value to the breeders and dealers in live stock, particularly fancy stock, and such facilities have not been afforded by the marking devices heretofore employed and which, as above stated, can be used only to make larger size and dotted-line marks. It may be here stated that the ears of animals, for instance the ears of cattle, are formed with ridges or ribs on the inner side which when dissected are found to be composed of tough, gristly substance, most difficult to penetrate with any kind of punching tool, whether sharp or not. These ribs or ridges, however, are covered with skin like the rest of the ear, and the skin can be readily marked with the marker of this invention, since the line of type blocks assembled, for instance, as in Fig. 3, can be suitably rocked or tilted during the making of the impression so as to conform to the irregular surface and produce a uniform penetration and a uniform marking at every point. In skin-punching tools of the kind requiring to be held on the jaws of a pair of pliers or tongs, this manipulation is obviously not possible and as a consequence of such fact the marks imprinted thereby have to be confined to the spaces between the ridges; if punched forcibly through the ridges, blurring from the consequent maceration is inevitable, and the pain to the animal is of course intense.

I claim—

1. A tattoo marker for live stock consisting of a plurality of fine needles forming the outline of the character to be imprinted on the animal and assembled in substantial contact whereby a suitable quantity of fluid ink will be held thereon and carried thereby into the skin, upon the penetration of said needles therein, combined with a support or backing for said needles securing them in their said arrangement and limiting the penetration thereof to a depth sufficient only to penetrate through the epidermis and into the true skin.

2. A tattoo marker for live stock consisting of a plurality of fine sharp-pointed needles arranged according to the outline of

the character to be imprinted on the animal and in substantial contact whereby a suitable quantity of fluid ink to make the desired mark will be held thereon by the  
5 effect of capillary action, combined with a support for said needles securing them in their said arrangement, the organization being such that all the said needles can be pressed simultaneously and by hand into the

animal's skin, thereby carrying the ink into 10 the same.

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

FREDERICK R. STEVENS.

Witnesses:

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