June 4, 1963 H. J. McMURRAY 3,091,770

EAR TAG PLIERS

Filed May 15, 1961

Fig. 1

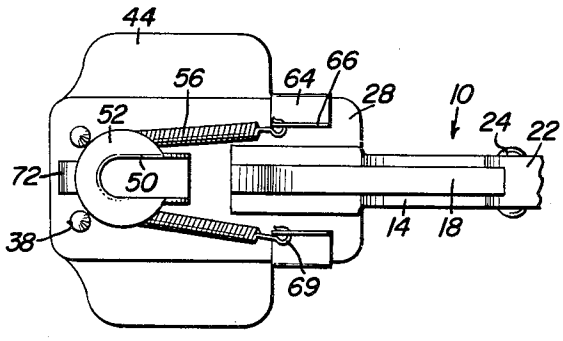


Fig. 4

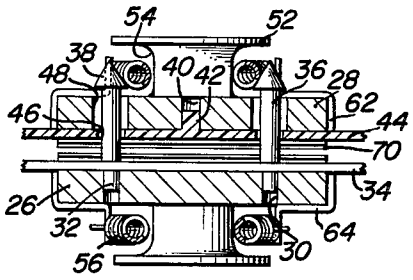


Fig. 5

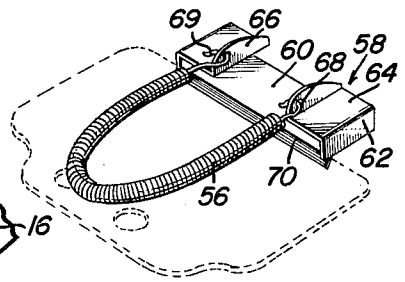


Fig. 2

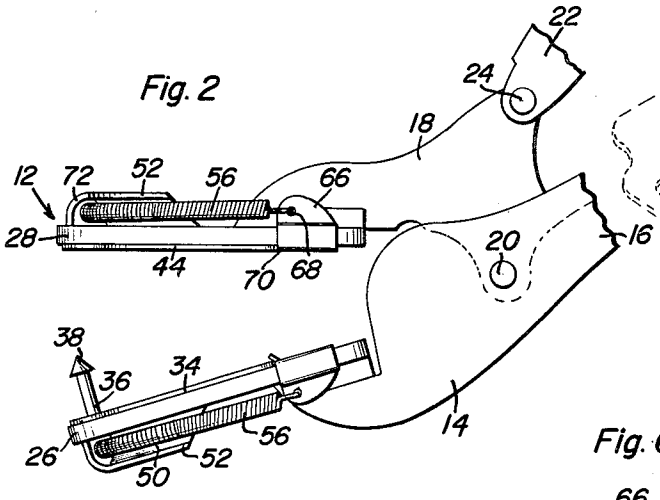


Fig. 6

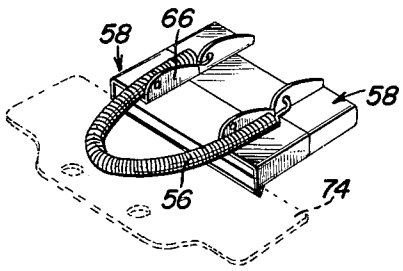
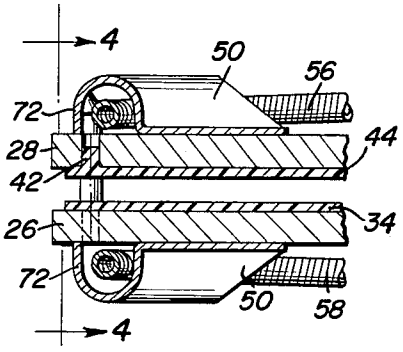


Fig. 3



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EAR TAG PLIERS

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9 Claims. (Cl. 1—220)

The present invention generally relates to a device for applying identification ear tags to the ears of animals. The ear tags applied with the pliers of the present invention are specifically disclosed in copending application Serial No. 92,568, filed March 1, 1961, for "Livestock Ear Tag and Tool Therefor."

As disclosed in the aforementioned copending application, a tool or applicator has been disclosed for applying the ear tags also disclosed in that application. The primary object of the present invention is to provide a novel and improved applicator or pliers specifically constructed for applying ear tags to the ears of animals together with a novel structure associated with each jaw of the pliers for frictionally and resiliently retaining the ear tags in position when they are being applied to the animal ears thus enabling full attention to be given to the positioning of the ear tags on the ear and further enabling the pliers to be orientated in substantially any position when applying the ear tag.

Another very important object of the present invention is to provide an ear tag pliers or applicator having a holder for the tags thereon which holder may be readily altered so that it will effectively retain smaller tags such as those employed with hogs, sheep or the like as well as larger tags such as those normally employed with cattle or the like.

Still another important object of the present invention is to provide an ear tag applicator or pliers which is simple in construction, easy to use, effective for holding the tags during the application of the tags to the ear and quite inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a top plan view of the pliers of the present invention;

FIGURE 2 is a side elevational view of the jaw end of the pliers with the handles broken away and with the jaws illustrated in inverted position from their normal in use position;

FIGURE 3 is a longitudinal sectional view taken generally along the centerline of the outer end portions of the jaws;

FIGURE 4 is a transverse, sectional view taken substantially upon a plane passing along section line 4—4 of FIGURE 3 illustrating further structural details of the applicator and the orientation of the ear tags therewith;

FIGURE 5 is a perspective view illustrating schematically the relationship of the tags to the spring-loaded holder; and

FIGURE 6 is a perspective view of a slightly modified assembly for use in holding smaller tags.

Referring now specifically to the drawings, the numeral 10 generally designates the ear tag applicator of the present invention which is in the form of a pliers-type tool having a novel jaw assembly generally designated by the numeral 12. The particular construction of the handle portions of the pliers-type tool may vary but a preferred embodiment employs an assembly employing an over center relationship such as "vise grip" pliers. This type

of tool includes a jaw member 14 having a rigid handle 16 extending therefrom together with a pivotal jaw member 18 pivotally connected thereto by a pivot pin 20 together with a handle 22 pivotally attached thereto by pivot pin 24. The handle 22 is connected with the handle 16 by an over center mechanism which, when the handles 16 and 22 are squeezed together will effectively retain the jaw members 14 and 18 pivoted towards each other.

Attached to the jaw member 14 which may be considered the upper jaw is a generally elongated rectangular plate or jaw 26 and attached to the jaw member 18 which may be considered the lower jaw member when in use there is provided a generally rectangular plate or jaw 28. The jaws 26 and 28 are generally in parallel relation when they are in adjacent position as illustrated in FIGURES 3 and 4 and, of course, are disposed in diverging relation when the jaw members 14 and 18 are pivoted apart such as when the handles 16 and 22 are swung apart thus opening the jaws 26 and 28. The jaws 26 and 28 are secured to the jaw members respectively by any suitable means such as by welding or the jaw plates 26 and 28 may be of unitary construction with the jaw members 14 and 18 respectively.

The jaw 26 is provided with a pair of laterally spaced apertures 30 adjacent the outer edge thereof which receive a pair of projecting pins 32 integral with an ear tag 34. The pins 32 are in alignment with elongated pins or pegs 36 projecting from the other face thereof which terminate in substantially conical terminal ends 38. The jaw 28 is provided with a central aperture 40 for receiving a projecting pin 42 on the female ear tag 44. The female ear tag 44 is also provided with a pair of openings 46 for receiving the pegs 36 and the jaw 28 is provided with a pair of openings 48 therethrough also for receiving the pegs 36 and the enlarged pointed ends 38 thereof. This particular construction is more fully explained in the aforementioned copending application but briefly, the apertures 46 are slightly smaller than the headed end 38 thus providing a lock for the pegs or pins 36 after they have been inserted into the openings 46. The pointed headed ends 38 serve to pierce the ear and at the same time be extended through the female ear tag 44 thus locking the male ear tag 34 and the female ear tag 44 to the ear with the portion of the ear pierced by the pegs or pins 36 being disposed between the tags 34 and 44. Note that the openings 48 are slightly larger than the openings 46 so that the headed ends 38 of the pegs 36 may pass therethrough without interference thus enabling assembly and disassembly of the jaws 26 and 28 with respect to the ear tags. Due to the particular plastic construction of the ear tags, the tapered headed end 38 of the pegs 36 may be forced through the openings 46 and subsequently due to their natural resilience or "memory," the plastic will effectively return to its original shape thus locking the pegs 36 in relation to the ear tag 44.

Attached to each of the jaws 26 and 28 is an outwardly projecting arcuate flange 50 which has an outwardly flared upper edge portion 52 thus forming a generally arcuate groove or channel 54 parallel to the outer surface of the jaw 26 or 28. Disposed in the channel or groove 54 is a coil tension spring 56 disposed generally in U-shaped orientation with the bight portion thereof received in the U-shaped or arcuate channel or groove 54.

A sliding and gripping member generally designated by numeral 58 is slidably disposed on each jaw plate 26 and 28. The gripping member 58 includes a plate 60 disposed against the inner surface of the respective jaw, end flanges 62 perpendicular thereto and lying alongside of the edges of the respective jaws and an inwardly extending flange 64 lying alongside of the outer surface of the respective jaws thus slidably mounting the gripping

member 58 on the respective jaws with the plates 60 disposed against the inner surface thereof. The inner end of each horizontal flange 64 is provided with an upstanding flange or lug 66 which is apertured as at 68 for receiving the hook end 70 at each end of the spring 56. Thus, the ends of the spring 56 are detachably connected to the gripping member 58 whereby the spring will urge the gripping member towards the outer free end or apertured end of the respective jaws 26 and 28.

The gripping member 58 is provided with means grippingly engaging the inner edge of the respective ear tags and such means includes a laterally extending flange 70 on the edge of the plate 60 facing the free outer end edge of the jaws. The flange 70 inclines downwardly and towards the outer free end edge of the jaws for engaging the edge of the ear tag opposite from the edge portion having the pins 32 or 42 thereon whereby the spring 56 normally biases the gripping member 58 towards the apertured end of the jaws 26 or 28 thus frictionally gripping the ear tag and retaining it in position. The inclined construction of the flange 70 will serve somewhat a camming action for urging the respective ear tags against the surface of the jaw.

For retaining the springs 56 in position, a retaining lug 72 is provided which interconnects the forward edge of the flange 52 and the outer surface of the respective jaw 26 or 28. This prevents the spring 56 from becoming disengaged from the projecting flange 50 when no jaws are gripped by the gripping member 60. When installing the ear tags on the pilers, it is only necessary to take the ear tags and engage the flange 70 with the inner edge thereof and force the gripping member 58 inwardly until the pins 32 or the pin 42 may be engaged with the apertures 30 or 40 respectively. This will elongate and tension the spring 56 so that the spring 56 will serve to frictionally retain the ear tags in place.

The hook 70 normally will be retained in engagement with the apertures 68 but may be disengaged therefrom by grasping the spring and unhooking the hook 70 in a manual operation.

As illustrated in FIGURE 6, the gripping assembly may be employed for gripping a smaller ear tag 74 by virtue of applying a second gripping member 58 against the inner surface of the already provided gripping member 58 so that the lugs 66 on the second gripping member 58 are disposed interiorly of the spring 56. In other words, in the assembly of FIGURE 6, there are two gripping members 58 employed which are disposed in tandem relation, both of which are slidable on the respective jaw members and the spring 56 has the ends thereof secured to the gripping member farthest away from the smaller ear tag 74 thus enabling ear tags for smaller animals to be effectively applied with the tool of the present invention by merely inserting additional gripping members 58 or removing the additional gripping member when desired. This is quite simple to accomplish since it requires only that another gripping member be slipped on the jaw right in front of the already supplied gripping member with the spring disposed on the outside of the lug thus preventing the gripping members from sliding outwardly off the outer end of the jaw. Thus, by supplying one extra set of slides or gripping members, there is provided an applicator that will fit all sizes of tags.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A tool for applying ear tags to the ear of an animal comprising a pair of jaws having planar facing surfaces, means movably interconnecting the jaws for movement of the jaws toward and away from each other, and means on each of the jaws for frictionally and resiliently gripping an ear tag thereon for retaining the ear tag against the inner surface of the jaws for positioning on opposite surfaces of an animal's ear in spaced relation thereto whereby the ear tags may be brought into engagement with the opposite surfaces of the ear for mounting thereon, said means for holding an ear tag in position including a gripping member slidably mounted on the jaw, spring means interconnecting the gripping member and the jaw urging the gripping member towards the outer end thereof, said jaw having an aperture adjacent the outer end thereof receiving a projection on the ear tag whereby the ear tag will be releasably gripped frictionally between the gripping member and aperture.

2. The structure as defined in claim 1 wherein said sliding member includes a flange projecting laterally from the jaw and inclined towards the free end edge of the jaw for camming the ear tag towards the jaw surface.

3. A pliers type tool for assembling ear tags with ears of animals with the tags being of generally rectangular configuration and including a pair of projecting prongs extending laterally from one surface of the tag, each of said prongs having a pointed outer end for piercing the ear of an animal adjacent the center thereof whereby the tag will overlie the surface of the ear, a locking member disposed on the opposite side of the ear from the tag, said locking member having a pair of spaced apertures receiving said prongs, and means on said prongs lockingly engaged with the apertures for locking the tag and locking member in interlocked relation on opposite sides of the ear for mounting the tag on the ear, said tool adapted to receive the tag and the locking member for forcing the pointed prongs through the ear of the animal and through the apertures in the locking member for locking the assembly onto the ear of an animal, said pliers-type tool including a pair of movable jaws, each jaw having a generally rectangular surface, the surfaces disposed in facing relation for movement toward each other, said tag and said locking member including pins extending outwardly therefrom, each jaw having apertures therein adapted to receive the pins for locating the tag and locking member in relation to each other, one of said jaws having a pair of apertures in alignment with the apertures in the locking member for receiving the pointed ends of the prongs when the prongs are inserted through the ear and through the apertures in the locking member, and means adapted to engage the edge of the tag and locking member opposite from the apertured ends of the jaws.

4. A pliers-type tool for assembling ear tags with ears of animals with the tags being of generally rectangular configuration and including a pair of projecting prongs extending laterally from one surface of the tag, each of said prongs having a pointed outer end for piercing the ear of an animal adjacent the center thereof whereby the tag will overlie the surface of the ear, a locking member disposed on the opposite side of the ear from the tag, said locking member having a pair of spaced apertures receiving said prongs, and means on said prongs lockingly engaged with the apertures for locking the tag and locking member in interlocked relation on opposite sides of the ear for mounting the tag on the ear, said tool adapted to receive the tag and the locking member for forcing the pointed prongs through the ear of the animal and through the apertures in the locking member for locking the assembly onto the ear of the animal, said pliers-type tool including a pair of movable jaws, each jaw having a generally rectangular surface, the surfaces disposed in facing relation for movement toward each other, said tag and said locking member including pins extending outwardly therefrom, each jaw having apertures therein adapted to receive the pins for locating the tag and locking member in relation to each other, one of said jaws having a pair of apertures in alignment with

the apertures in the locking member for receiving the pointed ends of the prongs when the prongs are inserted through the ear and through the apertures in the locking member, each jaw having means adapted to engage the edge of the tag and locking member oposite from the apertured ends of the jaws, said means including a sliding clip mounted on each of said jaws, a laterally extending flange on each of said clips for engagement with the inner edge of the tag and locking member respectively for positioning the tag and locking member on the jaws, said flange being inclined for camming the tag and locking member towards the surface of the jaw.

5. The structure as defined in claim 4 wherein spring means interconnects the sliding clip and the jaw for resiliently urging the clip towards the outer free end of the jaw thus frictionally gripping the tag and locking member respectively.

6. The combination of claim 5 wherein said spring means includes a tension coil spring having the ends thereof attached to the sliding clip, a projecting flange on the outer surface of the jaw, said flange receiving the spring with the relaxed dimension of the spring being such that the clip must be forced inwardly thus tensioning the spring in order to assemble the tag or locking member with the jaw.

7. The combination of claim 8 together with a second clip disposed against the first named clip thereby enabling different sized tags and locking members to be effectively gripped.

8. In a pliers-type tool for assembling a male tag and a female tag onto the ear of an animal, a pair of jaws, each jaw having a generally planar surface, said planar surfaces facing each other, each jaw having aperture means therein adapted to receive projecting pins from the respective tags for mounting the tags on the jaw, and resiliently biased clip means engaging the bottom edge of the tags for retaining the tags in position on the jaws.

9. A pliers-type tool and ear tag assembly for use in placing identification ear tags on the ears of animals comprising a pliers-type tool having a pair of movable jaws with inner faces disposed in facing relation for movement toward and away from each other, a tag mounted on one of said jaws, a locking member mounted on the other of the jaws, said tag having a pair of pins extending from both surfaces thereof, apertures in said jaw receiving one end of the pins, the other ends of the pins being pointed for penetration of an animal's ear, the locking member having a pair of apertures receiving the pointed ends of the pins on the tag, and a centrally projecting pin on the surface of the locking member facing the jaw, said jaw engaging the locking member having a central opening receiving the projecting pin on the locking memer, said jaw receiving the locking member also including a pair of enlarged apertures aligned with the apertures in the locking member and receiving the pointed ends of the pins on the tags when they are inserted through the locking member, a clip member slidably mounted on each of said jaws and including a laterally extending flange inclined towards the outer end of the respective jaws for engaging the inner edge of the tag and locking member respectively thereby releasably frictionally retaining the tag and locking member in position on the jaws and camming the tag and locking member respectively towards the jaw for automatically positioning and aligning the locking member prior to assembly whereby the pins on the tag will be aligned with the apertures in the locking member and jaw receiving the same.

References Cited in the file of this patent

UNITED STATES PATENTS

1,474,547	Pannier	Nov. 20, 1923
1,556,088	Dougherty	Oct. 6, 1925
2,570,048	Cooke	Oct. 2, 1951
2,582,056	Mount	Jan. 8, 1952
2,818,665	Barger	Jan. 7, 1958
3,013,269	Brierley	Dec. 19, 1961