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A. A. PANNIER

PLIERS FOR EAR TAGS

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2 Sheets-Sheet 2

Fig. 3.

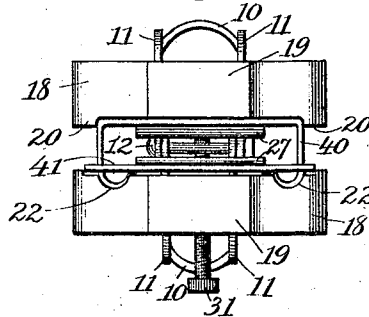


Fig. 4.

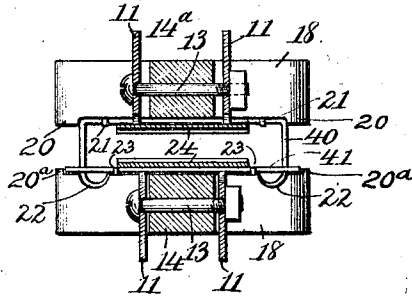


Fig. 5.

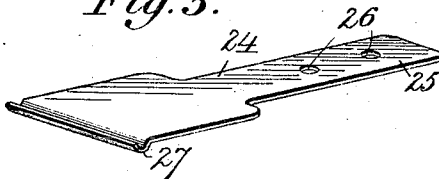


Fig. 7.

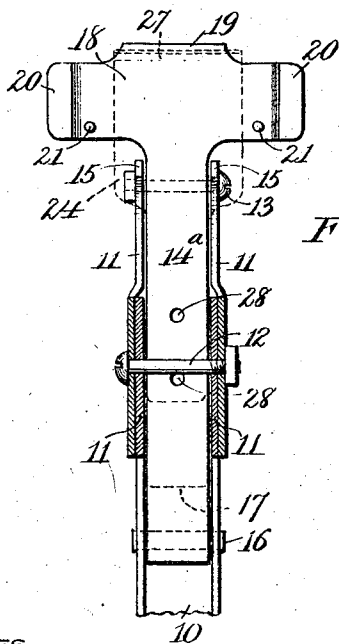
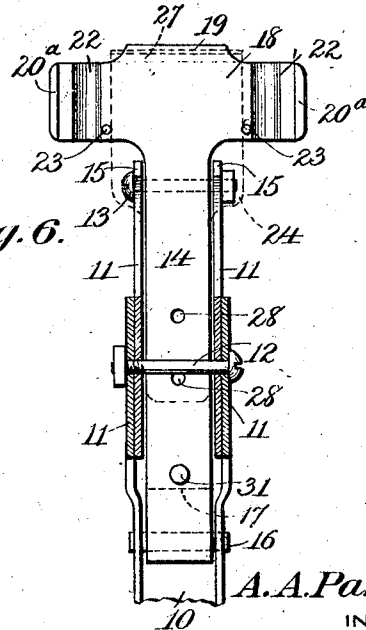


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

ARTHUR A. PANNIER, OF SALT LAKE CITY, UTAH.

PLIERS FOR EAR TAGS.

Application filed November 14, 1919. Serial No. 337,922.

To all whom it may concern:

Be it known that I, ARTHUR A. PANNIER, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented a new and useful Pliers for Ear Tags, of which the following is a specification.

This invention relates to pliers for attaching ear tags to the ears of domesticated animals.

An object of the invention is to provide a hand operated implement which will attach ear tags of the double ended or two-prong type to an ear.

A specific object is to provide an implement especially adapted to attach tags of the type described and claimed in an application filed of even date herewith, Serial Number 337,921.

A further object is to provide pliers which will securely hold the tag without danger of displacement on its jaws, will force the tag in place on the ear, and then release the tag from the jaws, so that the implement may be withdrawn without pulling upon the ear or otherwise hurting the animal.

Another object is to provide pliers for the purpose described whose handles when expanded or open will allow locking of the tag in place on the jaws, and when contracted or closed will disengage the locking means for the tags, while at the same time securing the tag upon the ear.

A still further object is to provide pliers which will not clamp the ear tags whereby permanent pressure or pinching would be exerted upon the ear, and which, in general performs its work as painlessly as possible.

The invention will be best understood from a consideration of the following detailed description, taken in connection with the accompanying drawings forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawings, but may be changed and modified, so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings—

Figure 1 is a side elevation of a preferred embodiment of the invention;

Figure 2 is a longitudinal section thereof;

Figure 3 is a front end view thereof;

Figure 4 is a sectional view on the line 4—4 of Figure 2, looking forwardly;

Figure 5 is a perspective view of one of the tag-holding springs;

Figure 6 is a detail view partly in section showing the under or inner faces of the two jaws; and

Figure 7 is a perspective view of the improved ear tag, which is affixed by the present pliers.

The numeral 10 designates handles which are preferably hollowed out or concaved, as shown, and are each provided with bifurcations 11, which are pivoted together by an element 12, such as a bolt or the like. The bifurcations of one handle preferably enclose the bifurcations of the other. The bifurcations 11 are bent so as to cross each other where the pivot element 12 unites them, and near their forward ends are united by rocker pins 13 to jaws 14 and 14^a. The upper jaw is designated by 14^a. The inner ends of the jaws 14 and 14^a have elongated slots 17 which receive pins 16 fixed to the handles. This pin-and-slot connection, in combination with the pivot 12 and the rocker pins 13, maintains the jaws of the pliers in parallel relation to each other whatever the position of the handles. The extreme outer end of each bifurcation of the handles is bent inwardly to form a cam-edge 15, for a purpose to be described.

18 designates the T-heads of the jaws, each of which has an extension seat 19 for the free ends of the tag-holding springs to be described. The upper jaw 14^a has depending lips 20 at each side thereof. Pins 21 are provided to project above the inner face of said jaw, and are spaced from its forward end and from each other but are near the lips 20. The lower jaw on its part has raised lips 20^a, which are spaced farther apart than the lips 20, so as to receive the keeper plate of the ear tag to be described. Pins 23 corresponding to the pins 21 and grooves 22 running crosswise of the T-head are provided on the lower jaw. These grooves are designed to bend the prong ends of the ear tag when clinched upon the ear. The pins 23 lie between but close to the grooves 22.

24 represents a T-headed leaf spring plate having an elongated shank 25 provided with perforations 26 (Figure 5). Such a spring is provided for each jaw. Screws 28 are

passed through the perforations 26 and hold the springs upon the inner faces of the two jaws by their engagement with tapped bores 29. The outer edges 27 of the T-heads of the springs are given a bend or roll, which edges rest upon the seats 19.

The lower jaw 14 is provided with a tapped bore 30, designed to receive an adjustable stop screw 31. This stop screw, as Figure 2 indicates, encounters the opposite face of the upper jaw 14^a when the pliers are closed. The stop means 31 is positioned between the pivot element 12 and the pin and slot connection 16, 17.

The ear tag shown in Figure 7 comprises a pronged plate 40 and a keeper plate 41. The pronged plate is held, as Figs. 1, 3 and 4 indicate upon the upper jaw 14^a. It lies between the lips 20 and the pins 21, which together form a close-fitting seat for the same. The upper leaf spring plate 24, with its roll 27, prevents outward movement of the plate 40 upon its seat. The keeper plate 41 being longer than the plate 40, is seated between the lips 20^a, which are spaced farther apart than the lips 20. The pins 23 further assist in keeping the plate 41 in place. The lower leaf spring 24 with its rolled end 27 encloses the keeper plate and firmly holds it in its seat. It will be observed that both sections of the ear tag are securely held upon the upper and lower jaws in such a way that no movement in any direction whatever is possible unless the spring plates 24 are lifted. When this occurs however, movement outwardly away from the pliers is permitted, or rather movement of the pliers away from the ear tag fixed in the ear is allowed.

When the handles are in the position of Figure 1, the tag parts will be held as has just been described. When the handles are closed down, the jaws are maintained parallel to each other, and the cam edges 15 encounter the enlarged T-heads of the spring plates 24, lifting them off their seats 19 as Figure 2 clearly shows. At the same time, the prongs of the upper plate of the ear tag are forced into the groove 22, and are bent thereby either outwardly or inwardly, thus locking with the keeper plate, as Figs. 3, 4 and 7 illustrate. The adjustable stop screw 31 prevents such closing of the jaws as will tend to crush or deform the ear tag, which would create an undue pressure upon the animal's ear, and at the same time it prevents too great a lifting of the springs 24 off their respective jaws. If the springs are raised too far from their seats, they are liable to become deformed. The present pliers at the moment of forcing and clinching the tag in place, release the tag from its locked position upon the jaws, so that the implement may be withdrawn without special manipulation and without any danger of pulling upon the ear or otherwise hurting the

animal. These pliers cannot pinch the animal's ear, which would give rise to permanent soreness. It should be plain that an implement has been provided especially adapted to attach ear tags of the double-ended type to an ear.

While this invention has been described as especially adapted for the ear tag described and claimed in the application mentioned above, it will be clear that it is adaptable to affix other forms of ear tags, with very few changes. In some forms of ear tags it would not be necessary to provide both jaws of the pliers with holding spring plates, and I wish the claims to be so construed.

What is claimed is:

1. In pliers for affixing ear tags having jaws, means for holding an ear tag upon one of the jaws of the pliers, and a cam edge formed upon one of the handles of the pliers for positively moving said holding means to release said tag.

2. In pliers for affixing ear tags having separate jaws and handles, means mounted upon both jaws of the pliers for holding the complementary parts of a two-part ear tag, both said means being released by direct engagement with the ends of the two handles of the pliers when the handles are moved to close the jaws.

3. In pliers for affixing ear tags having jaws, means mounted on both jaws of said pliers for holding the complementary parts of a two-piece ear tag, and means for locking the parts of the tag together when said jaws are moved toward closing position, said tag being released as the jaws assume a position nearly closed.

4. In pliers for affixing ear tags having jaws, means for holding an ear tag upon one of said jaws, said means comprising a spring plate, and means formed on one of the handles of said pliers for lifting said plate to release said tag.

5. In pliers for affixing ear tags having jaws, means for resiliently and yieldably holding an ear tag upon the outer end of one of said jaws, and a cam edge formed upon one of the handles of said pliers for moving said means to releasing position.

6. In pliers for affixing ear tags having jaws, a spring plate secured at its inner end to one of the jaws of the pliers and normally pressing against the outer jaw end, said spring providing means for yieldably holding an ear tag upon said jaw, and a cam edge provided on one of the handles of the pliers for lifting said plate.

7. In pliers for affixing ear tags, a spring plate for holding an ear tag upon one of the jaws of the pliers, said plate comprising a straight shank fixed at its inner end to the inner face of said jaw and an enlarged head normally pressing on the outer end of the jaw, and means provided on one of the

handles for engaging with said head for lifting said plate.

8. In pliers for affixing ear tags having jaws, a spring plate for holding an ear tag upon one of the jaws of the pliers, said plate comprising a straight shank fixed at its inner end to the inner face of said jaw, and an enlarged head normally pressing on the outer end of the jaw, and a cam edge provided on the forward or jaw end of that handle which is secured to said jaw for engagement with said head to lift the same off its seat when said jaws are moved to closed position.

15 9. In pliers for affixing ear tags having jaws, means for holding an ear tag upon one of the jaws of the pliers, means formed upon one of the handles of the pliers for moving said holding means to release said tag, and stop means for preventing said jaws from being closed, and also preventing said holding means from being moved more than a predetermined degree.

20 10. In pliers for affixing ear tags having jaws, means for holding an ear tag upon one of the jaws of the pliers, means actuated upon closing movement of the jaws to move the holding means, and stop means for preventing said jaws from being closed and also said holding means from being moved more than a predetermined degree, said stop means comprising an adjustable screw passed through one of said jaws and engaging with the inner face of the other jaw when the jaws are moved together.

35 11. In pliers for affixing ear tags, handles pivoted together short of their forward ends, parallel jaws held upon said handles, ear tag holding means provided upon one of said jaws, and a cam edge formed on the forward end of one of said handles for moving the holding means to releasing position.

40 12. In pliers for affixing ear tags, handles pivoted together short of their forward ends, parallel jaws held upon said handles, ear tag holding means secured upon one of said jaws, a cam edge formed upon the forward end of one of said handles for moving the holding means to releasing position, and stop means for preventing said holding means from being moved more than a predetermined degree.

45 13. In pliers for affixing ear tags, handles bearing jaws, means for holding an ear tag upon one of said jaws, said handles having bifurcations pivoted together, the bifurcations of that handle bearing the holding means aforesaid having cam edges, whereby when said handles are closed the means for holding is released.

60 14. In pliers for affixing ear tags, handles bearing parallel jaws, a spring plate for holding an ear tag upon one of said jaws, said plate comprising a straight shank fixed at its inner end to the inner face of said jaw,

and an enlarged head wider than said jaw normally resting on the outer end of the jaw, said handles having bifurcations pivoted together, the bifurcations of one of said handles having inturned cam edges, whereby when the jaws are closed said spring is raised for releasing the ear tag.

15. In pliers for affixing ear tags having handles and jaws, one of said jaws having a T-head, raised lips at the opposite ends of said T-head, pins projecting above the inner surface of said head, and a spring plate secured to said jaw for holding an ear tag between the lips and against the pins.

16. In pliers for affixing ear tags having handles and jaws, one of said jaws having a T-head, raised lips at the opposite ends of said T-head, pins projecting beyond the inner surface of said head, a spring plate secured to said jaw for holding an ear tag between the lips and against the pins, said plate being seated on the T-head, and means for lifting said plate off its seat when the jaws are moved toward closed position.

17. In pliers for affixing ear tags having handles and jaws, one of said jaws having a T-head, an extension seat projecting beyond the end of the T-head, raised lips at the opposite ends of said T-head, pins projecting beyond the inner surface of said head, a spring plate secured to said jaw for holding an ear tag between the lips and against the pins, said plate having a rolled end resting upon the extension seat.

18. In pliers for affixing ear tags, handles bearing parallel jaws, one of said jaws having a T-head, an extension seat projecting beyond the end of the T-head, raised lips at the opposite ends of said T-head, pins projecting beyond the inner surface of said head, a spring plate secured to said jaw for holding an ear tag between the lips and against the pins, said plate having a rolled end resting upon the extension seat, and cam means formed upon one of said handles for lifting said plate off its seat.

19. In pliers for affixing ear tags, handles having bifurcated ends pivoted to each other, jaws held parallel to each other in all positions of the handles, said jaws being pivotally connected with the handles near the forward ends of the bifurcations of the same and having a pin-and-slot connection with said handles on the other side of the pivot of said handles, and means provided upon each jaw for holding and releasing the complementary parts of a two-piece ear tag.

20. In pliers for affixing ear tags, handles having bifurcated ends pivoted to each other, jaws held parallel to each other in all positions of the handles, said jaws being pivotally connected with the handles

near the forward ends of the bifurcations of the same, and having a pin-and-slot connection with said handles on the other side of the pivot of said handles, and stop means
5 provided on one of the jaws intermediate its pivotal and pin-and-slot connections with said handle and engageable with the other jaw for preventing said jaws from being closed more than a predetermined
10 degree.

21. In pliers for affixing ear tags, upper and lower jaws, handles for moving said jaws, the upper jaw being provided with means for holding the pronged part of a
15 two-piece ear tag, the lower jaw having means for holding the keeper part of said tag, and means formed on said handles for releasing each of said holding means simultaneously when the jaws are moved toward
20 closed position.

22. In pliers for affixing ear tags, upper and lower jaws, handles for manipulating said jaws, both jaws having seats for receiving the complementary parts of a two-
25 piece ear tag and having means for holding the parts of said tag on said seats, the lower jaw in addition having means for turning and clinching the prongs of said ear tag when the two jaws are closed, where-
30 by the tag is affixed, and means operated on closing the jaws for releasing said holding means, whereby the tag when affixed is removable from each seat without hindrance.

23. In pliers for affixing ear tags, upper and lower jaws, handles for manipulating said jaws, both jaws having seats for receiving the complementary parts of a two-
35 piece ear tag and having means for holding the parts of said tag on said seats, the lower jaw in addition having means for turning and clinching the prongs of said

ear tag when the two jaws are closed whereby the tag is affixed, means operated on closing the jaws for releasing said holding
45 means whereby the tag when affixed is removable from each seat without hindrance, and stop means for preventing said jaws from being closed and also said holding means from being moved more than a pre-
50 determined degree.

24. In pliers for affixing ear tags, handles provided with parallel jaws, said jaws having T-heads, raised lips at the opposite
55 ends of said T-heads, pins projecting above the inner surfaces of said heads, a spring plate for holding a part of an ear tag upon each of said jaws seated against said lips and pins, said plate comprising a straight
60 shank fixed at its inner end to the inner face of said jaws and an enlarged head normally pressing on the outer end thereof, and a cam edge provided on the forward
65 ends of each of said handles for engagement with said heads to lift the same off their seats when said handles and jaws are moved to closed position.

25. In pliers for affixing ear tags, having normally spaced jaws, means mounted upon both jaws for holding the comple-
70 mental parts of a two-part tag, said means consisting of a spring for each jaw, and means whereby said springs become inert in the holding of the tag when the jaws assume a closed position and the parts of
75 the tag have been joined.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ARTHUR A. PANNIER.

Witnesses:

RACHEL RUDY,
H. L. JAMES.