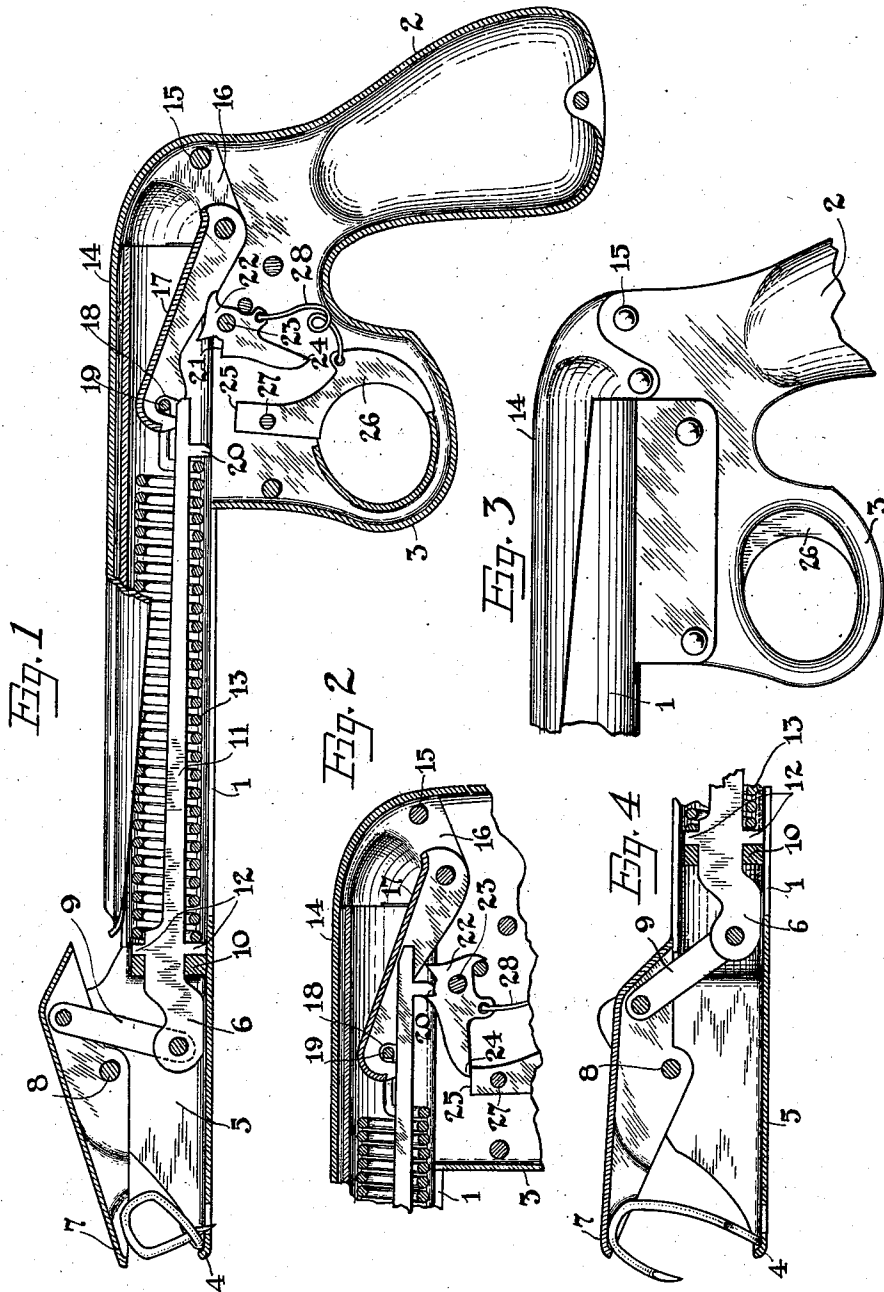


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STOCK RINGER.
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Patented Apr. 9, 1912.



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WILLIAM H. LEAVER AND CHARLES H. SMITH, OF CHICAGO, ILLINOIS.

STOCK-RINGER.

1,023,112.

Specification of Letters Patent.

Patented Apr. 9, 1912.

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To all whom it may concern:

Be it known that we, WILLIAM H. LEAVER and CHARLES H. SMITH, citizens of the United States, residing in Chicago, county of Cook, and State of Illinois, have jointly invented certain new and useful Improvements in Stock-Ringers, of which the following is a specification.

This invention relates to stock ringers and more particularly to a device for inserting rings through the tips of hogs' noses to prevent rooting.

The invention has for its object the provision of a spring actuated device which will act almost instantaneously to bend and secure the ring through the tip of the animal's nose while it is feeding, thus eliminating the necessity of catching the animal and by main force inserting the ring through his nose with a pair of manually operated pliers as has been the custom heretofore.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the drawing: Figure 1 is a central longitudinal sectional view of the device with the parts in their actuated position; Fig. 2 is a fragmentary detail section of the trigger mechanism of the device in its cocked position; Fig. 3 is a view in side elevation of the rear or butt end of the device, and Fig. 4 is a sectional view of the front end of the device as it appears before the bending of the ring.

As shown in the drawings, the device has the general form of a pistol, it being provided with a barrel 1, a grip or butt 2, and a trigger guard 3 located adjacent to the said grip or butt. The barrel 1 which is formed of sheet metal and is preferably of cylindrical shape is provided at its forward end, or that end remote from the butt, with a stationary jaw 4 which is formed integral with the said barrel and which embraces a bottom wall and two vertical side walls 5. Between the vertical side walls 5 of the lower jaw is mounted the upper jaw 7 which is pivotally secured thereto by means of a transversely extending pivot pin 8. The forward end of the jaw 7 is adapted to engage the curved portion of the ring as is shown in Fig. 4, and the said jaw is adapted to be actuated to bend the ring into the form shown in Fig. 1.

As a means for moving the upper jaw 7 to bend the ring, there is provided a longi-

tudinally extending rod 11 which is operatively connected with said upper jaw. The means here shown for translating the longitudinal movement of the rod into vertically swinging motion of the upper jaw comprises a pair of links 9 which are pivotally connected at their upper ends to a rearwardly extending portion of the upper jaw 7 and at their lower ends to a cross-head 6 formed upon the forward end of the rod 11. The said rod 11 is preferably stamped from sheet metal and is provided near its forward end with lateral projections 12, 12. This rod is adapted to be forcibly moved forward by means of a helical spring 13 which surrounds the said rod and bears against the rear margin of the projection 12, 12. A washer 10 is inserted over the forward end of the rod 11 and bears against the front margins of the lateral projections 12, 12 thereon, and by its engagement with the shoulder formed by the walls 5 of the lower jaw 4, limits the forward movement of the rod.

In order to place the coil spring 13 under compression, a lever 14 is provided which is hinged to the stock or butt 2 by means of a pivot 15. This lever is so shaped as to lie flat along the top of the barrel, and is preferably made of pressed metal and curved and ribbed to give it the necessary strength. The said lever is connected with the spring 13 by means of a link 17. This link is connected at its rear end to the downwardly projecting portion of the lever 14 by means of a transversely extending pivot 16 and is provided at its forward end with a notch or recess 18 which engages a loop 19 formed upon the rear end of the spring 13. The pivotal point at the rear end of the link 17 is arranged in such relation to the points 15 and 19 that when the lever is in its normal position the back pressure of the spring 13 upon the forward end of the link 17 tends to rotate the lever about its pivot 15 in a direction to hold the lever tightly pressed against the top of the barrel. In placing the spring under tension the lever 14 is rotated about its pivot 15 through an angle of substantially one hundred and eighty degrees, by which movement the pivot 16 is also caused to rotate through one hundred and eighty degrees about the pivot 15 and to draw with it the link 17, and the spring 13. The last coil of the spring 13 engages a downwardly

projecting lug 20 on the rod 11 and draws said rod and the cross-head to their most rearward positions in the barrel. In this latter position the lug 20 engages the notch 21 in a pivoted detent 22, moving that detent upon its pivot 23 until the extension 24 thereof rests upon the top 25 of the trigger 26. This trigger is pivoted at 27 and is normally held in its forward position by means of the spring 28, which serves also to hold the detent 22 in its released position. While the lever 14 is in its extended position, the upper jaw 7 is in the position shown in Fig. 4, and the ring is then inserted, the jaws being opened sufficiently to receive the ring. The lever 14 is then forced forward to the position illustrated in the drawing. In so doing the rear end of the coil spring 13 is forced forward by means of the link 17 and the loop 19, but the projection 20 on the rod 11 is retained by the notch 21 in the detent 22 and the forward end of the spring is thus retained while the rearward end is moved forward through the distance of substantially one inch. The notch 21 is made large enough that the projection 20 will have some slight play therein so that the rod 11 moves forward slightly as the return movement of the lever is started and the upper jaw 7 is thus pressed tightly upon the ring holding it firmly in position between the upper and lower jaws of the device. When now the point of the ring is placed in the position to be inserted and the trigger 26 is pulled the extension 24 of detent 22 slips off of the top 25 of the trigger and rotates to its position illustrated in Fig. 1, allowing the key 20 to slip out of the notch 21 and permitting the cross-head 6 to move forward to close the ring. It will be seen that in the movement of the cross-head from a position to the rear of the pivot which attaches the link 9 to the upper jaw to a position in front of that pivot, the upper jaw will be given a compound movement, that is, the ring will be closed and the upper jaw will again be moved in its reverse direction to release the ring. The arrangement of parts for moving the jaw accomplishes an equalization of pressure upon the ring, that is, while the spring is under its greatest compression, the greatest amount of movement is transmitted to the upper jaw for the least amount of movement of the spring, and as the spring approaches the final end of its movement and its pressure diminishes, the toggle arrangement approaches the vertical position and a less movement is transmitted to the upper jaw by a greater movement of the cross-head.

The ring used in this device need not be of the particular style shown in the drawing, and furthermore, the device may be used for bending rings for other purposes as well as for the purposes herein described,

for example, the jaws may be differently shaped and tags or markers suitable for insertion in the animals' ears may be used. Such changes and others obvious to those skilled in the art may be made without departing from the spirit or scope of our invention.

We claim:

1. In a stock ringer, the combination with a pair of jaws adapted to close an open ring, of a spring for positively closing and then positively opening said jaws to bend and release the ring, and a hand lever for initially energizing said spring.

2. In a stock ringer, the combination with a tubular barrel, of a pair of hinged jaws attached to said barrel, a coiled actuating spring carried by said barrel, and means for operating one of said jaws by the forward movement of the forward end of said spring.

3. In a stock ringer, the combination with a pair of hinged jaws, of a tubular support for said jaws, a coiled spring within said tubular support adapted by its forward expansion to close said jaws and a hand lever attached to the tubular support for compressing said spring.

4. In a stock ringer, the combination with a tubular barrel, of a pair of hinged jaws attached to said barrel, a coiled actuating spring located in said barrel, a movable rod upon which said spring acts extending through said spring, and a link connecting said rod with one of the jaws for operating said jaw.

5. In a stock ringer, the combination with a pair of hinged jaws, of a tubular support for said jaws, a coil spring located within the hollow portion of said support, an auxiliary hand lever to put said spring under compression, means to release said spring, and means to transmit energy from said spring to one of said jaws.

6. In a stock ringer, the combination with a barrel, of a pair of jaws supported thereon, a coil spring within said barrel, an auxiliary hand lever to place said spring under compression, means to release said spring, and means connecting the spring with one of said jaws, whereby upon the release of said spring the jaws will be forcibly closed.

7. In a stock ringer, the combination with a pair of jaws, of a coiled spring for closing said jaws, an auxiliary hand lever for placing said spring under compression, and means to release said spring to actuate said jaws without moving said lever.

8. In a stock ringer, the combination with a barrel, of a pair of jaws attached to one end thereof, a handle at the other end of said barrel, a lever pivoted at the rear end of the barrel and adapted to lie along the top of the barrel when in normal position, said lever being adapted to be moved from its normal

position through substantially one hundred and eighty degrees, and a spring adapted to be energized by returning said lever to its normal position, the release of said spring

therefor adapted to be moved from its normal to its extended position without energizing the spring, and means whereby the lever is adapted to energize the spring in its return movement.

9. In a stock ringer, the combination with a formed and pressed stationary jaw having side walls, of a movable jaw supported between and by the side walls of the stationary jaw.

16. In a stock ringer, the combination with a pair of jaws, of a spring for actuating said jaws, means to open the jaws to receive the ring when the spring is deenergized, means to energize the spring, and means to release the spring to bend the ring.

10. In a stock ringer, the combination with a pressed metal barrel, of a stationary jaw formed integrally therewith and having parallel side walls and a movable spring actuated jaw supported between and by the side walls of the stationary jaw.

17. In a stock ringer, the combination with a pair of jaws, of a spring for actuating the jaws, means for moving one end of the spring for placing the spring under compression, means connected with the other end of said spring for actuating said jaws when the spring expands from its compressed position.

11. In a stock ringer, the combination with a stationary jaw, of a movable jaw pivotally supported by and between the side walls thereof, a longitudinally movable member within said stationary jaw and means to translate the forward movement of said member to angular movement of said movable jaw.

18. In a spring actuated device, the combination with a barrel, an abutment for each end of said spring, of a coiled spring in the barrel, means to place the spring under compression by the movement of one abutment while the forward end of the spring is stationary, and means to utilize the expansion of said spring by the movement of the other abutment while the first abutment is stationary.

12. In a stock ringer, the combination with a stationary jaw for receiving the eye of a ring, of a movable jaw for bending the ring, a longitudinally reciprocating rod, a spring for actuating said rod, and means whereby the forward movement of said rod forcibly closes said jaws.

19. In a spring actuated device, the combination with a barrel, of a spring in the barrel, a trigger retaining the front end of the spring, a lever adapted to be operated to press the rear end of the spring forward, and means for utilizing the expansion of the spring actuated by the front end of said spring when said end is released by the movement of said trigger.

13. In a stock ringer the combination with a stationary jaw, of a movable jaw, a longitudinally reciprocating member, a link connecting said member and said movable jaw, a pivoted catch for retaining said reciprocating member in its rearward position, a trigger for releasing said catch whereby said reciprocating member is released, the movement of said member toward said jaws being adapted to close and again open said jaws, a spiral compression spring for causing the movement of said member and a hand lever for compressing said spring.

20. In a stock ringer, the combination with a coiled spring, of a rod extending through the opening in said spring, a jaw actuated by the movement of the forward end of said rod, means engaging the rear end of said rod to hold the spring under compression, the release of said latter means permitting the forward movement of the rod to actuate said jaw.

14. In a stock ringer, the combination with a stationary jaw, of a movable pivoted jaw, a longitudinally movable member, a link connected between said member and said movable jaw, the movement of the said member toward said jaws being adapted to first place compression and then tension on said link to cause the compound movement of the jaw.

Signed by us at Chicago, county of Cook, and State of Illinois, in the presence of two witnesses.

WILLIAM H. LEAVER.
CHARLES H. SMITH.

Witnesses:

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MARJORIE E. GRIER.