April 4, 1950 B. F. MILTNER 2,502,873

HOG RINGER

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Fig. 1.

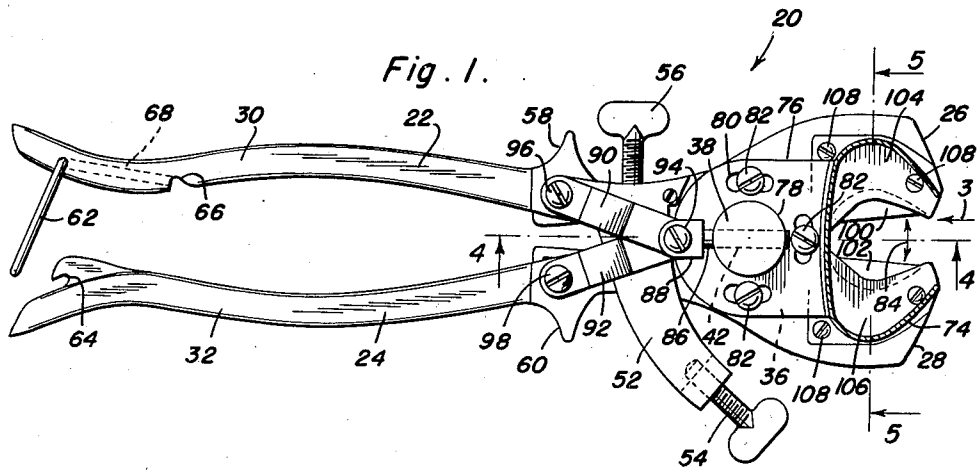


Fig. 7.

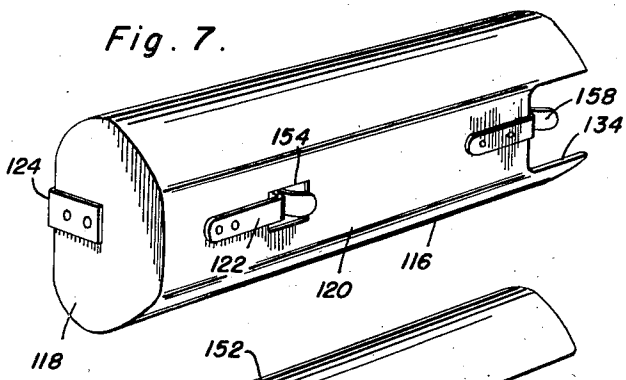


Fig. 8.

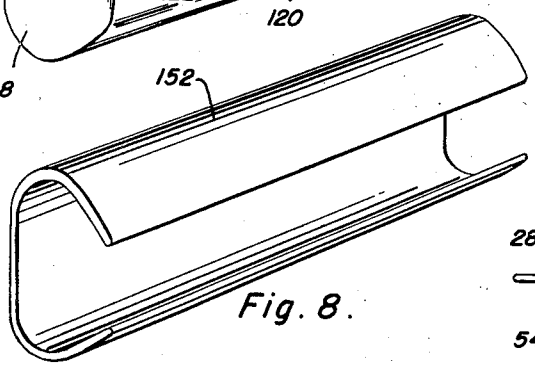


Fig. 3.

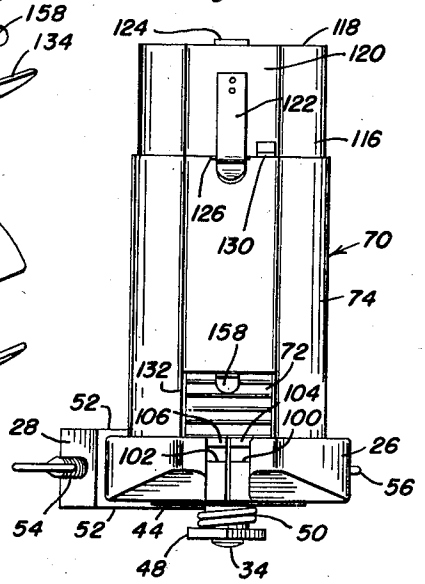
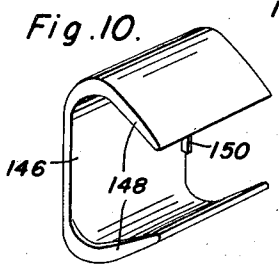


Fig. 10.



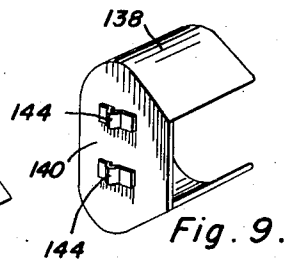


Fig. 9.

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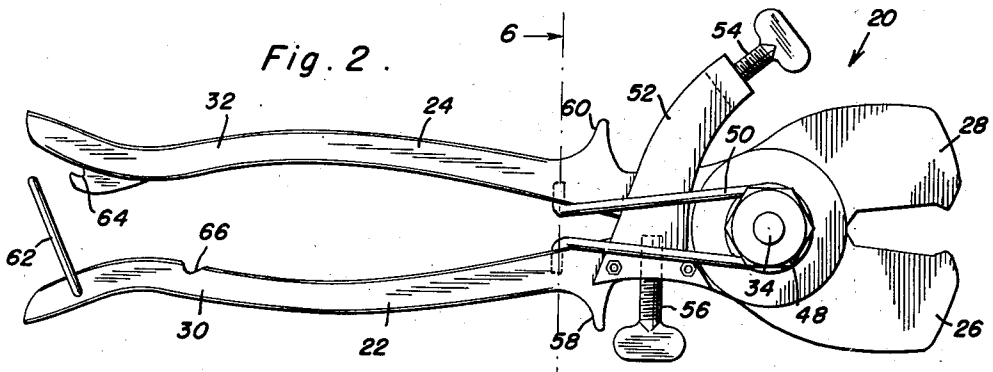
Attorneys

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HOG RINGER

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Fig. 2.



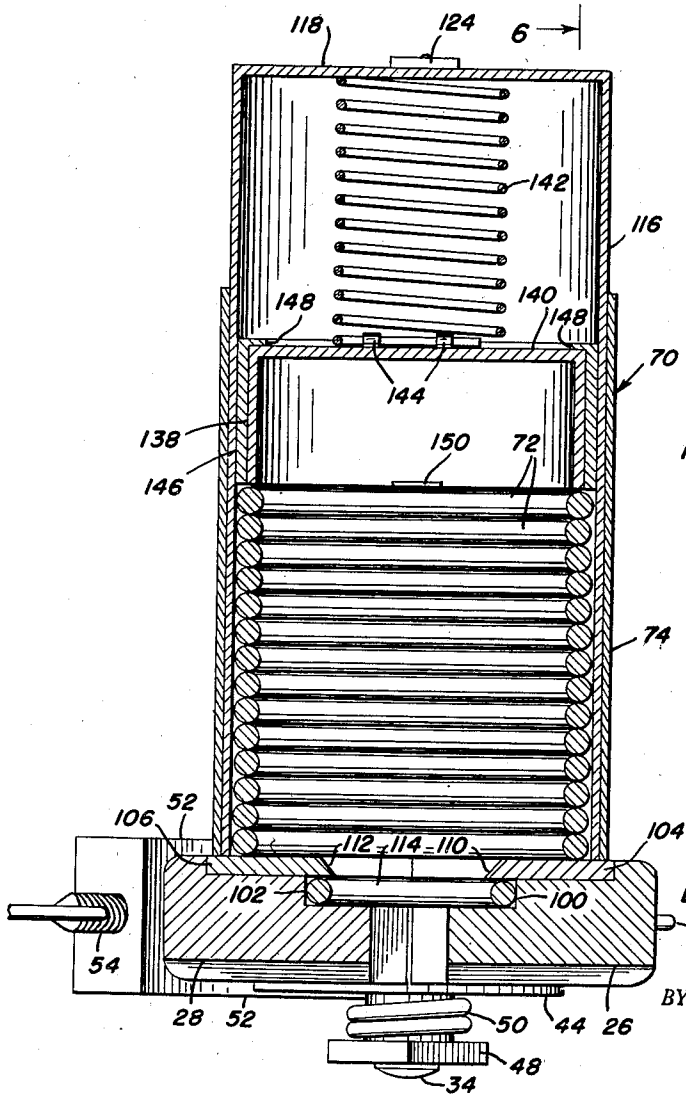


Fig. 5

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HOG RINGER

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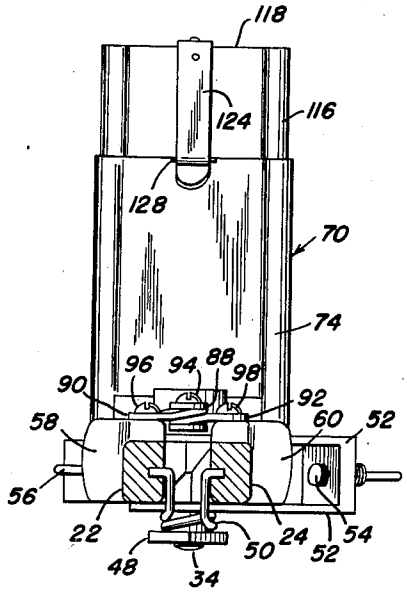


Fig. 6.

Fig. 4.

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UNITED STATES PATENT OFFICE

2,502,873

HOG RINGER

Bernard F. Miltner, Solon, Iowa

Application September 22, 1948, Serial No. 50,465

7 Claims. (Cl. 128—332)

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This invention relates to new and useful improvements and structural refinements in devices for applying rings to the noses of hogs or similar animals, and the principal object of the invention is to provide a ringer whereby this operation may be performed conveniently and with expedience.

In particular, the instant invention is an improvement on the device which constitutes the subject matter of United States Patent No. 1,879,270, granted on September 27, 1932 to William A. Ingalsbe.

To a substantial extent, the instant invention resembles the device in the above identified patent, but one of the improvements resides in the provision of novel means for equalizing the movement of the actuating handles of the implement so as to centralize the ring blank magazine with respect to the blank closing and applying jaws.

Another feature of the invention resides in structural improvements in the blank magazine itself, whereby the latter is adapted to accommodate blanks of different sizes.

Important advantages of the invention lie in its simplicity of construction, convenience of operation, and in its adaptability to economical manufacture.

With the above more important objects and features in view and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a top plan view of the invention, the blank magazine being shown in cross section;

Figure 2 is an underside plan view of the subject shown in Figure 1;

Figure 3 is an elevational view, taken substantially in the direction of the arrow 3 in Figure 1 but illustrating the entire magazine;

Figure 4 is a cross sectional view, taken substantially in the plane of the line 4—4 in Figure 1;

Figure 5 is a cross sectional view, taken substantially in the plane of the line 5—5 in Figure 1;

Figure 6 is a cross sectional view, taken substantially in the plane of the line 5—5 in Figure 1;

Figure 7 is a perspective view showing the blank receptacle of the magazine;

Figure 8 is a perspective view of an insert for the blank receptacle shown in Figure 7;

Figure 9 is a perspective view of a blank follower used in the magazine, and

Figure 10 is a perspective view of a lining shell

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which is usable in association with the follower shown in Figure 9.

Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of a hog ringer designated generally by the reference character 20, the same being in many respects similar to the ringer disclosed in U. S. Patent No. 1,879,270 and embodying in its construction a pair of members 22, 24 providing at one end thereof a pair of coacting jaws 26, 28, respectively, while the remaining ends of the members constitute a pair of coacting handles 30, 32, respectively, as will be clearly apparent.

The intermediate portions of the members 22, 24 are connected together in a "plier" fashion by means of a pivot pin 34, the latter being provided at one end thereof with a substantially circular, flat head 36 and with an integral guide block 38, the head 36 being rotatable in a suitable recess 40 with which the member 22 is formed, while the block 38 is provided with a transverse bore 42 extending at right angles to the axis of the pin 34, as will be clearly apparent from Figure 4.

The remaining end portion of the pin 34 is screw threaded and carries a washer 44, a spacer 46 and a nut 48, whereby the pivot pin is retained in position and the members 22, 24 are pivotally held together. A suitable spring 50 has a coiled intermediate portion thereof positioned on the spacer 46, the end portions of this spring being suitably anchored to the members 22, 24 and matters being so arranged that the spring 50 urges the jaws 26, 28 and the handles 30, 32 to their separated or open positions.

If desired, the member 22 may be provided with a pair of spaced, arcuate extensions 52 which freely "straddle" the member 24 and are equipped at their outer ends with a suitable set screw 54 for adjustably limiting the opening of the handles and jaws. Similarly, a further set screw 56 may be provided in the member 22 to adjustably limit the closing of the handles and jaws, as will be clearly understood.

The intermediate portions of the members 22, 24 may also be equipped with lateral protuberances 58, 60 respectively, these functioning as finger stops, so to speak, for preventing the fingers of the user from coming too close to the working mechanism of the ringer and sustaining possible injury.

A swingable loop 62 may be attached pivotally

to the handle 30 and adapted to engage a catch 64 provided on the handle 32, whereby the handles and jaws may be retained in their closed positions when the device is not in use. However, when the device is used, the loop 62 may be simply swung out of the way, so to speak, into a notch 66 formed in the handle 30, as indicated by the phantom lines 68 in Figure 1.

A vertically elongated magazine assembly 70, adapted to receive and dispense the ring blanks 72, is mounted above the jaws 26, 28, this being accomplished in the following manner:

The magazine assembly 70 includes in its construction a vertically elongated holder 74, the lower end of which is rigidly secured to a mounting flange 76 which, in turn, is provided with a central opening 78 to rotatably receive the aforementioned block 38 which projects above the flange 76, as is best shown in Figure 4. The flange 76 is also formed with a plurality of arcuate slots 80 which are disposed concentrically with respect to the opening 78 and accommodate a set of screws 82 employed for adjustably securing the flange 76 (and the holder 74) to the head 36 of the pivot pin 34. Inasmuch as the pin 34 is freely rotatable with respect to the members 22, 24, and inasmuch as the magazine holder 74 is secured by the bolts 82 to the head 36 of the pin 34, it will be apparent that the magazine 70 may be swung from one side to the other as indicated at 84 in Figure 1, notwithstanding the presence or absence of movement of the jaws 26, 28.

A guiding bar or rod 86 is freely slidable in the aforementioned bore 42 of the block 38, one end of this bar being provided with a fork 88 to which are pivotally connected two equalizing links 90, 92 by means of a common pivot screw 94. These links are, in turn, pivoted as at 96, 98 to the respective members 22, 24, and it will be noted that by virtue of this linkage, together with the slidable disposition of the guide 86 in the bore 42, an equalizing effect will be obtained which will assure that the magazine 70 is always centralized with respect to the jaws 26, 28 when the handles 30, 32 are actuated. In this manner, assurance is had that the blanks 72 discharged by gravity from the magazine 70 are correctly and accurately deposited in the coacting recesses 100, 102 provided for this purpose in the jaws 26, 28 respectively, and if necessary, a proper preadjustment may be made by simply loosening the aforementioned screws 82 and presetting the position of the holder flange 76 on the pivot pin head 36, as will be clearly apparent.

Inasmuch as the magazine 70 is intended to receive ring blanks which are separably held together in "stacks" or columns by shellac, adhesive, or the like, means may be provided for separating the lowermost blank in the stack when such a blank drops into position in the recesses 100, 102 of the jaws 26, 28. These means may simply assume a form of two separating blades 104, 106 respectively, attached to the respective jaws 26, 28 by suitable screws 108 (see Figure 1), the blades 104, 106 being provided with beveled separating edges 110, 112 respectively, whereby the lowermost blank (indicated at 114 in Figure 4) is separated from the stack when the jaws 26, 28 are brought together and the blank therein is closed and applied to the nose of the animal.

Referring now to the construction of the magazine assembly 70, the same includes the aforementioned holder 74 in which is slidably receivable a blank receptacle 116 having an open lower end and a closed upper end 118. The front wall 120 of the receptacle 116 is provided with a spring clip 122, while a further spring clip 124 is secured to the top wall 118 of the receptacle, as will be clearly apparent.

These two spring clips 122, 124 are releasably engageable with outwardly angulated detents 126, 128 respectively, the detents 126, 128 being provided at the upper edge of the holder 74, whereby the receptacle 116, after being inserted in the holder, is prevented from being withdrawn upwardly, as will be clearly apparent.

An L-shaped stop 130 may be provided on the front wall 120 of the receptacle 116, this stop being engageable with the upper edge of the holder 74 and thereby preventing the receptacle from sliding too far down into the holder.

The lower end portions of the holder 74 and of the receptacle 116 are formed with aligned recesses 132, 134 respectively, which facilitate the application of the entire device to the nose of the animal, indicated at 136 in Figure 4. In other words, the recesses 132, 134 provide sufficient clearance for the nose of the animal to be placed between the jaws 26, 28 while a ring is being applied.

A blank follower 138, configurated as is best shown in Figure 9, is slidable vertically in the receptacle 116, this follower having a top wall 140 to which is secured one end of a compression spring 142 by means of suitable clips or clamps 144. The remaining end of the spring 142 engages the inner surface of the top wall 118 of the receptacle 116, whereby the follower 138 urges the blanks 72 downwardly toward the jaws 26, 28. A liner shell 146, best illustrated in the accompanying Figure 10, is removably positionable on the follower 138, being retained in position thereon by inturned flanges 148 and a bendable tongue 150 with which the respective upper and lower edges of the shell 146 are equipped.

Matters are so arranged that the outside dimensions of the follower 138 are substantially equal to the inside dimensions of the lining shell 146, while the outside dimensions of the latter are substantially equal to the inside dimensions of the receptacle 116. Moreover, the inside dimensions of the receptacle 116 are substantially equal to the outside dimensions of the blanks 72, so that by employing the follower 138 together with the lining shell 146, the magazine 70 is adapted to accommodate relatively large blanks.

On the other hand, if relatively small blanks are to be used in the magazine, the receptacle 116 is removed from the holder 74 and the follower 138, together with the shell 146, are withdrawn from the receptacle, whereupon the shell 146 is removed from the follower and an insert 152, configurated substantially as shown in Figure 8, is placed in the receptacle 116. The follower 138, without the shell 146, may then be slid into the insert 152 in the receptacle 116, and the latter installed in the holder 74. Matters are so arranged that the outside dimensions of the relatively small blanks and of the follower 138 are substantially equal to the inside dimensions of the insert 152, while the outside dimensions of the insert 152 are substantially equal to the inside dimensions of the receptacle 116. In this manner, the magazine may be quickly and easily converted for use in association with relatively small blanks, this being achieved by selective and independent use of the lining shell 146 and insert 152, substantially as described.

It is to be noted that the front wall 120 of the receptacle 116 is provided with an opening 154 to receive the spring clip 122 when the receptacle is withdrawn from the holder 174, this being arranged in such manner that the spring clip 122 may retain the spring pressed follower 138 in the upper portion of the receptacle while the latter is being "loaded" with blanks. Needless to say, after the loaded receptacle is installed in the holder 74 and the clip 122 engaged with the detent 126, the spring 142 will urge the follower 138 against the column of blanks, as has been already explained.

Finally, an additional spring clip 158 may be provided on the receptacle 116 at the upper edge of the recess or opening 134, the clip 158 extending into the receptacle and preventing excessive downward travel of the spring pressed follower 138 when the supply of blanks in the receptacle is exhausted. Needless to say, the clip 158 may be swung outwardly to facilitate removal of the follower 138 from the receptacle 116, and it should be also understood that the blanks 72 are of a substantially U-shaped configuration, so that the inwardly extending portion of the spring 158, being disposed between the "open" ends of the blanks, does not interfere with the downward passage of the blanks through the magazine.

It is believed that the advantages and use of the invention will be clearly apparent from the foregoing disclosures and accordingly, further description thereof at this point is deemed unnecessary.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

Having described the invention, what is claimed as new is:

1. In a hog ringer, the combination of a pair of members provided at one end with a pair of coacting jaws, a pivot pin connecting said members together, a blank magazine disposed above said jaws and provided with a mounting flange attached to said pin, means for adjusting the attachment of said flange to the pin, and means for equalizing the movement of said members so as to centralize said magazine with respect to said jaws, said means including a pair of links each pivoted to one of said members and operatively connected to said pivot pin.

2. In a hog ringer, the combination of a pair of members provided at one end with a pair of coacting jaws, a pivot pin connecting said members together and formed with a flat head and with a guide block on said head, a blank magazine disposed above said jaws and provided with a mounting flange attached to said head, and means for centralizing said magazine with respect to said jaws, said means including a guide bar slidably engaging said block, and a pair of links each pivoted to one of said members and to said bar.

3. The device as defined in claim 2 wherein said block is formed with a bore extending at right angles to the axis of said pivot pin, said guide bar being slidable in said bore.

4. The device as defined in claim 2 together with a common pivot attaching said links to one end of said guide bar.

5. The device as defined in claim 2 together with means for adjusting said flange on said head.

6. The device as defined in claim 2 wherein said flange is formed with a central opening to accommodate said block and with a plurality of arcuate slots disposed concentrically to said opening, and a set of bolts extending through said slots into said head whereby the position of said flange on said head may be adjusted.

7. In a hog ringer, a blank magazine comprising a vertically elongated holder having an open upper end, a blank receptacle slidably and removably receivable in the upper end of said holder and having a side wall provided with an opening, a blank follower slidable vertically in said receptacle, a compression spring in the upper end of the receptacle for sliding said follower downwardly, a detent provided at the upper end of said holder, and a spring clip mounted on the upper end portion of said receptacle, said spring clip being engageable with said detent to prevent upward sliding of the receptacle in the holder and also being receivable in said opening and engageable with said follower to prevent downward sliding of the latter under the influence of said spring when the receptacle is removed from said holder.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,136,149	McGowan	Apr. 20, 1915
1,879,270	Ingalsbe	Sept. 27, 1932