

Oct. 25, 1949.

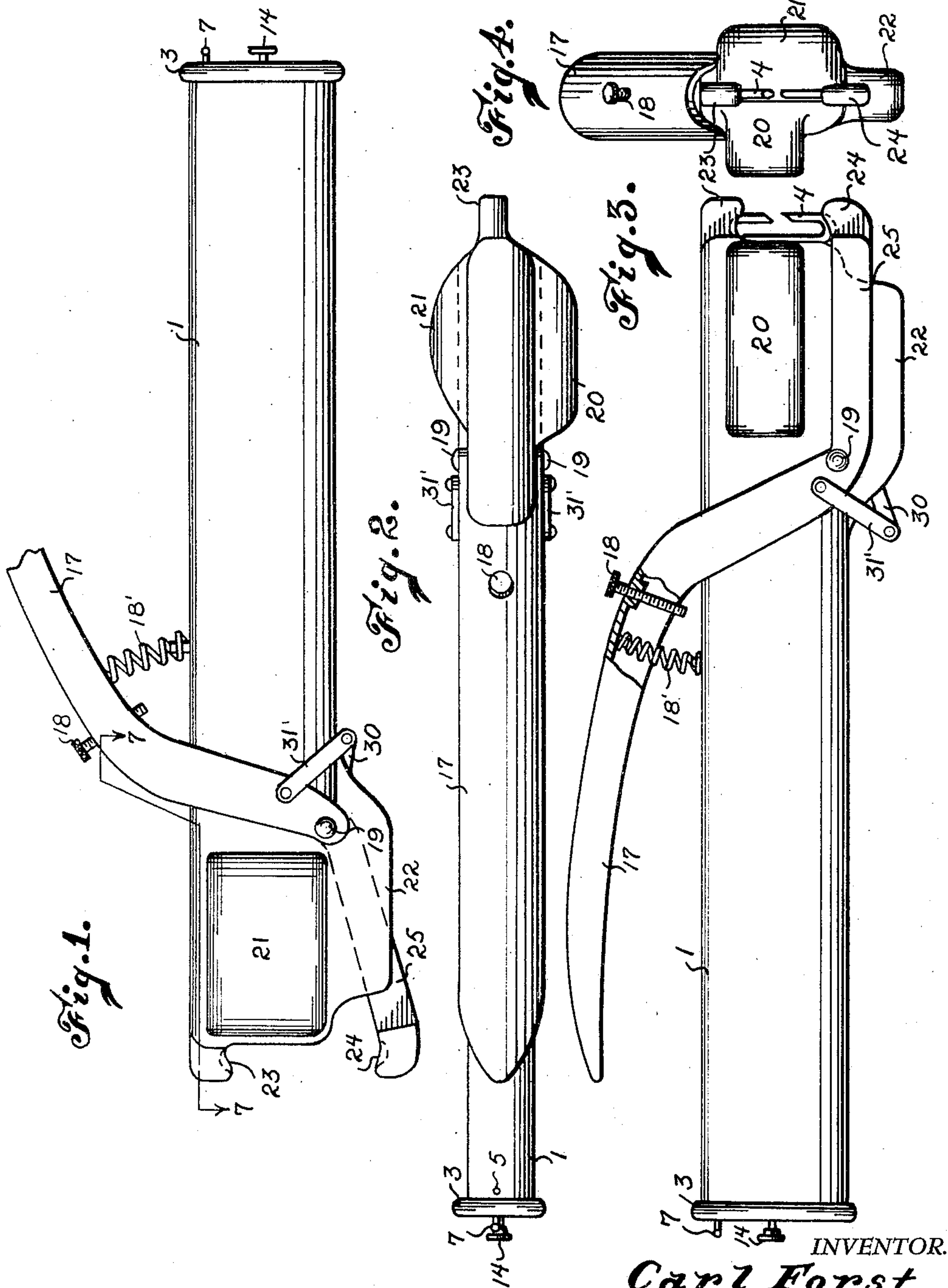
C. FORST

2,485,874

AUTOMATIC HOG RINGER

Filed March 5, 1947

2 Sheets-Sheet 1



INVENTOR.
Carl Forst
BY *Vieta J. Evans & Co.*

ATTORNEYS

Oct. 25, 1949.

C. FORST

2,485,874

AUTOMATIC HOG RINGER

Filed March 5, 1947

2 Sheets-Sheet 2

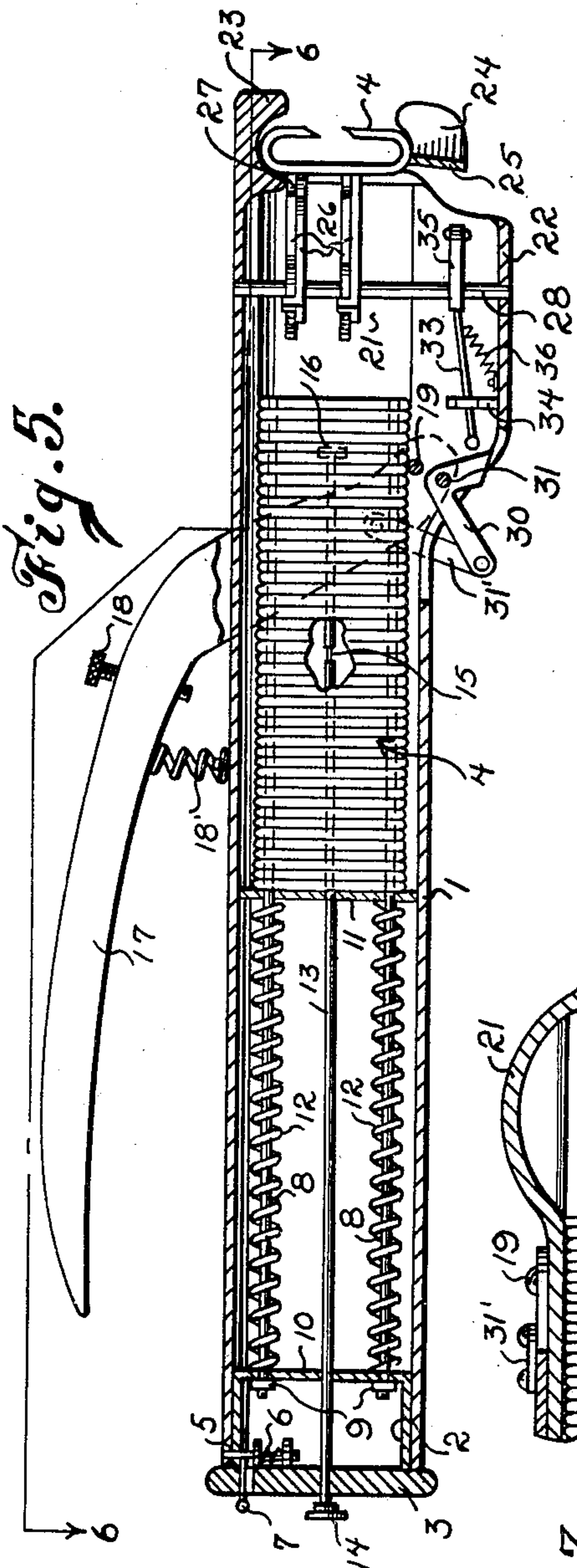


Fig. 5.

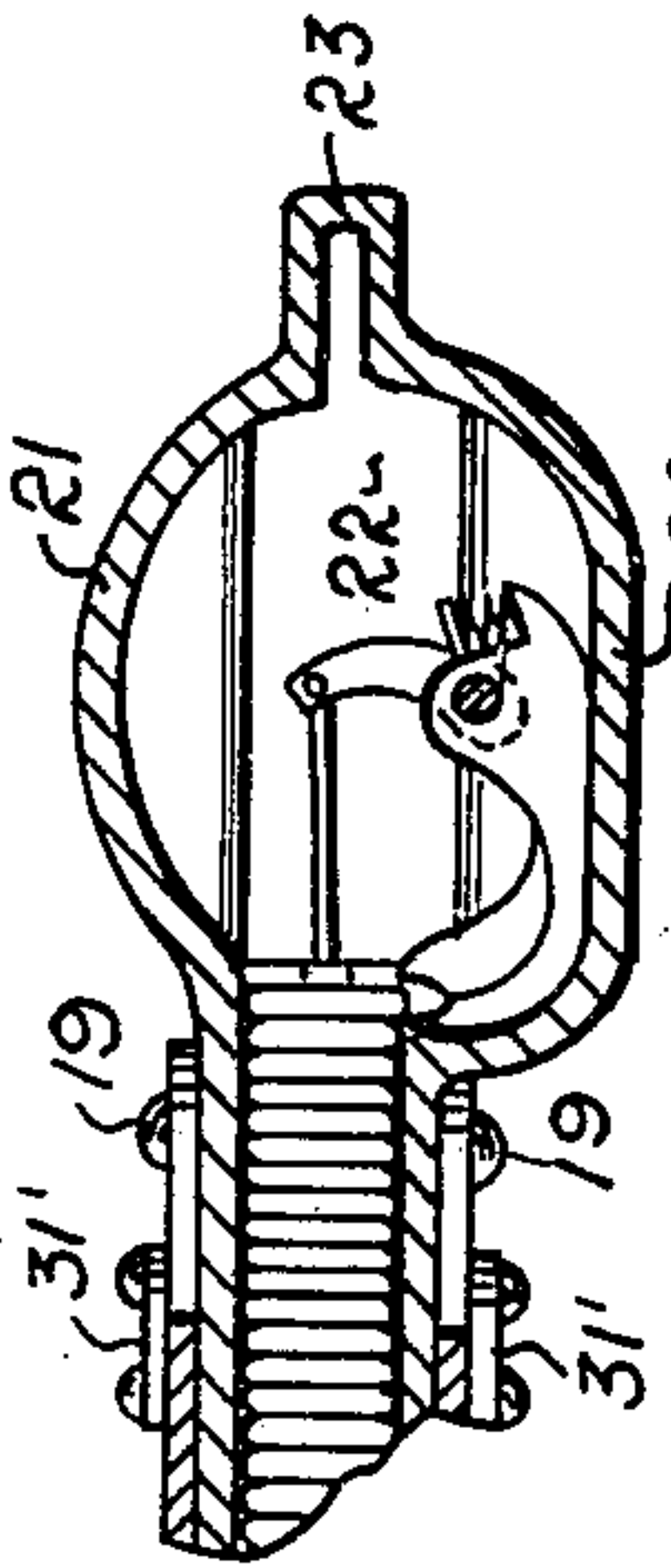


Fig. 6.

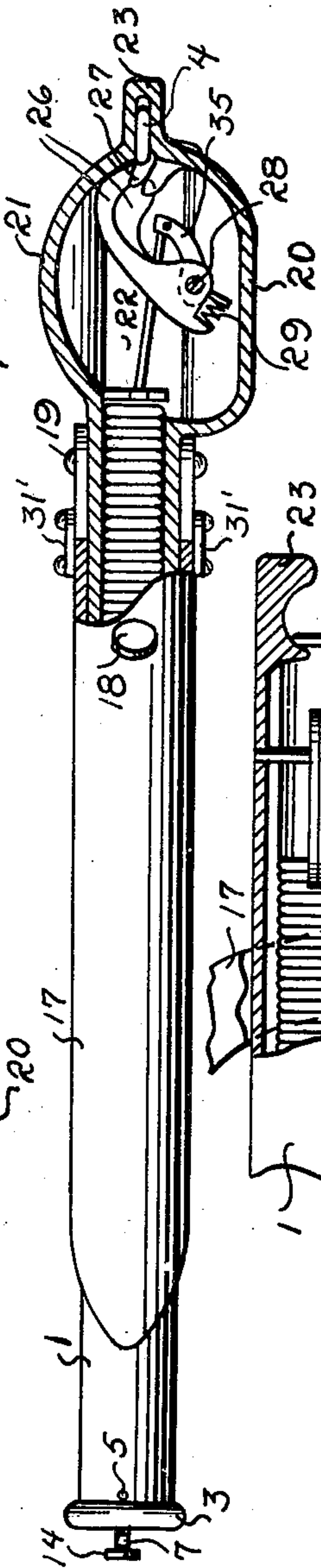
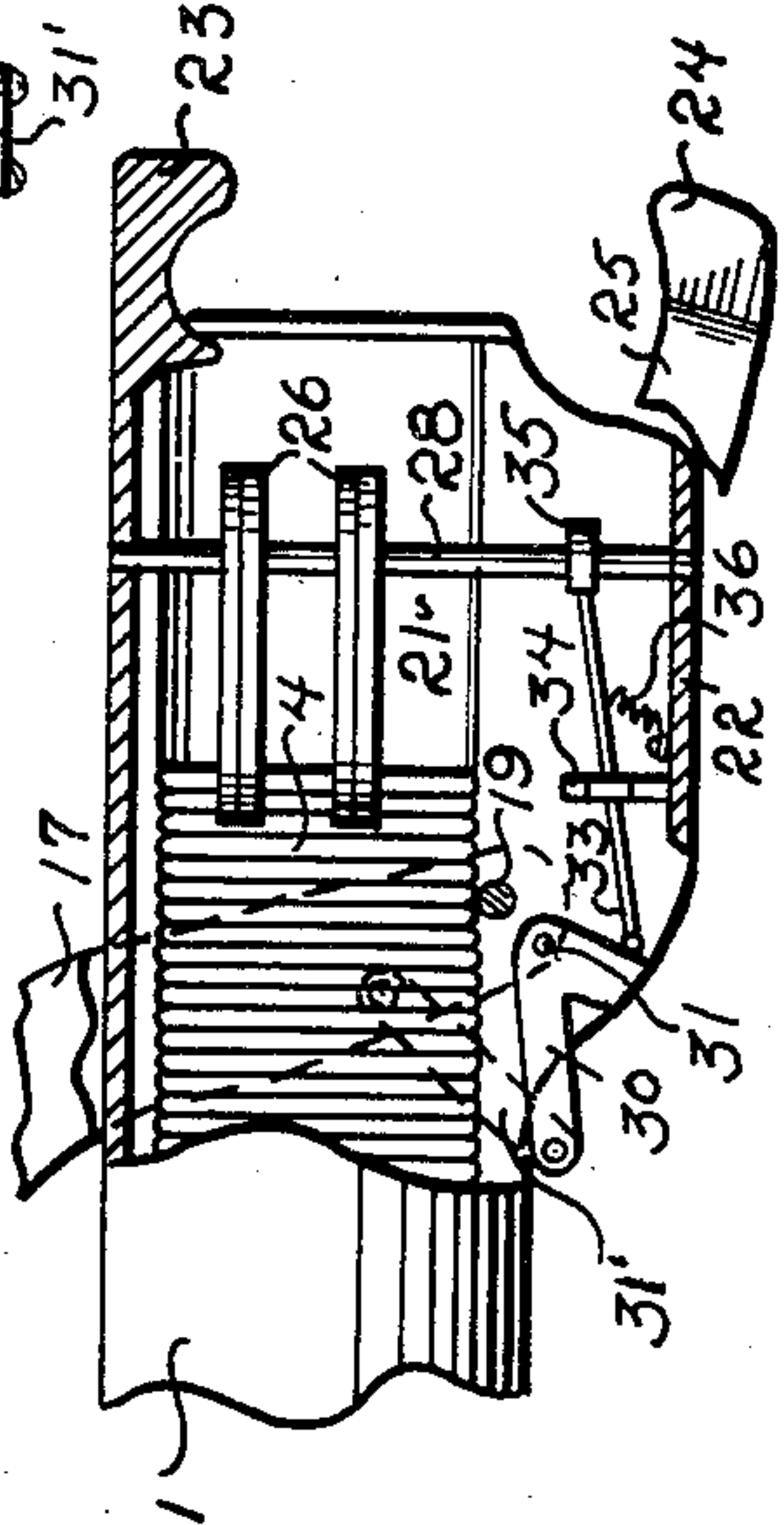


Fig. 7.



INVENTOR.

Carl Forst

BY Victor J. Evans & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE

2,485,874

AUTOMATIC HOG RINGER

Carl Forst, Linneus, Mo.

Application March 5, 1947, Serial No. 732,415

2 Claims. (Cl. 128—332)

1

My present invention relates to the general class of animal surgery, and more specifically to an improved automatic hog ringer or manually operated instrument for inserting in or attaching a ring to the nose of an animal.

The primary object of the invention is the provision of an instrument of this type having a magazine feed for the rings, together with feeding mechanism for a single ring, and a lever-operated jaw co-acting with a fixed jaw for securing the ring in place; and in which a minimum number of parts are employed. The parts may with facility be manufactured at low cost of production and conveniently assembled to insure an instrument that is speedy and accurate in the performance of its functions, and which may be manipulated with ease by one skilled in this particular art.

The invention consists in certain novel features of construction and combinations and arrangements of parts as will hereinafter be described and more specifically set forth in detail in the appended claims.

In the accompanying drawings I have illustrated a complete example of a physical embodiment of my invention in which the parts are combined and arranged in accord with one mode I have devised for the practical application of the principles of my invention. It will, however be understood that changes and alterations are contemplated and may be made in these exemplifying drawings, within the scope of my claims, without departing from the principles of the invention.

Figure 1 is a view in side elevation of an instrument or hog ringer, partly broken away for convenience of illustration, and in which my invention is physically embodied.

Figure 2 is a top plan view of the instrument in position reversed from that of Fig. 1.

Figure 3 is a side view of the instrument shown in Fig. 2, partly broken away to show the retracting spring and the adjustable stop for the operating lever.

Figure 4 is a front end view of the instrument.

Figure 5 is a longitudinal vertical sectional detail view of the instrument, showing its interior operating parts.

Figure 6 is a partial top plan view and partial horizontal sectional view as at line 6—6 of Fig. 5.

Figure 7 is a horizontal sectional detail view similar to Fig. 6 with the ring carrier in initial position.

Fig. 8 is a vertical longitudinal sectional view

2

showing the ring carrier or feed device in elevation.

In carrying out my invention I utilize a barrel or tube 1, forming a housing and magazine for the rings, and in cross section the tubular housing conforms to the shape of the open or split rings; in this instance the rings are illustrated as of flattened elliptical shape, and the interior of the tubular housing conforms to this shape.

The rear end of the tubular housing or barrel is closed by a removable plug 2 of hollow construction, having an exterior head 3 fitted against the open end of the housing.

The tubular housing forms a magazine for a number of the split or open rings 4, and the rear end of the removable plug is locked within the housing by means of a radially arranged latch pin or bolt 5 mounted within the plug and pressed by spring 6 into a keeper or hole in the housing. For removal of the plug an arm 7 of the latch pin or bolt projects through an opening in the head 3 of the plug, where it is readily accessible to a finger or thumb for unlatching the plug.

The rings 4 confined within the tubular housing are mounted upon a removable spring-feed magazine that includes a pair of vertically spaced rods 8, 8, each of which at its rear or outer end is secured by a lock nut 9 on the inner plate 10 of the removable plug, into which plate the rods are threaded, and these rods pass through a transversely arranged guide plate or follower 11. The plate or follower conforms to the interior bore of the tubular housing and it fits neatly therein for a sliding engagement in upright position with the inner surfaces of the tubular walls.

The follower acts as a feed plate for the rings, and it is pressed by springs 12, 12 on the rods 8, 8, to feed the row of rings toward the mouth of the tubular housing.

For controlling and regulating the feed of the rings a central rod 13 is slidably mounted in the plug 2—10 and passed through the follower plate 11, and an exterior handle or knob 14 may be utilized for this purpose. The control rod or bar is provided with an annular groove or notch 15 for co-action with the wall of the opening in the plug plate 10 to retain the bar in set position, and an enlarged head 16 is mounted on the inner or front end of the bar to prevent displacement of the rings from the magazine.

A single ring is removed from the front end of the row of rings in the magazine, carried to operative position, and then clamped in the nose of the animal, by the manipulation of an operating handle or lever 17 that is automatically re-

tracted by spring 18' interposed between the handle 17 and the tubular housing, and an adjustable set screw or stop 18 is mounted in the handle, which is pivoted at 19 on the housing, to regulate the movement of the hand lever.

To accommodate the operating parts of the instrument, the open front end or head of the instrument is provided with two lateral compartments or casings 20 and 21, and a bottom casing 22; and the open front end of the head or mouth of the instrument is fashioned with an upper fixed jaw 23 shaped to receive and fit over one end of the ring. With this fixed jaw, a movable jaw 24 co-acts to squeeze the two spaced ends of the split ring, as indicated in Fig. 5.

The movable jaw 24 is provided with a pair of spaced arms 25 located within the casing 22 and the inner ends of the arms are fixed rigidly on the pivot bolt or pin 19 of the operating lever 17, so that the movable jaw will swing upwardly as the operating lever is pressed downwardly toward the tubular housing, for clamping the ring in place.

The front ring is picked from the magazine and carried to position for clamping between the jaws by means of two pairs of gripping fingers 26, 26, that form gripping notches 27 at their free ends to grip and carry the ring. One finger of each pair is rigidly mounted upon a rock shaft 28 that is journaled in the opposite side walls of the hollow head of the tubular housing. The other gripping finger of each pair is loosely mounted on the rock shaft in close relationship with the rigid finger, and a spring 29 is interposed between parts of the two fingers for resiliently holding the loose finger in operative and gripping relation with the rigidly supported finger, for carrying the ring.

The rock shaft is rocked or actuated by movement of the operating lever or handle, through the instrumentality of two bell crank levers 30 that are pivoted at 31 in the walls of the casing 22 of the hollow head of the tubular housing, and the bell crank levers are actuated by a pair of exterior links 31', 31' that pivotally connect the bell crank levers with the operating lever or handle.

One of the bell crank levers 30 is located in position to swing and contact against a push rod 33 that is mounted to slide in a bracket 34 located within the housing or rather within its hollow head, and the push rod is pivotally connected to a crank arm or rocker arm 35 rigid with the rock shaft 28, a spring 36 being anchored to a wall of the head and to the push bar for swinging the carrier arms or fingers back to the row of rings, to grip another ring.

The pairs of carrier fingers are normally and resiliently held in gripping position against the front ring of the row of rings in the magazine,

as in Figs. 7 and 8, and the initial movement of the operating lever, through the bell-crank connection and push rod connections to the rock shaft, swings the fingers to carry the selected ring to the position of Figs. 5 and 6. The spring 36 then retracts the push rod and rockshaft to swing the carrier fingers back again to the front ring of the magazine row, thus clearing the mouth of the head of the instrument for the clamping movement of the movable jaw against the ring, as the latter is pushed into engagement with the nose of the animal for clamping thereon.

For replenishing the supply of rings within the magazine the latter may be withdrawn from the tubular housing by means of the headed plug; the additional supply of rings may be slipped onto the spring rods of the magazine, and then the reloaded magazine may again be slipped into the tubular housing for further use of the instrument.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a ringing instrument including a tubular housing and hollow head having clamping jaws at the mouth of the head, and a spring pressed magazine for a row of rings, the combination with a rock-shaft journaled in the head and a pair of gripping fingers mounted thereon for gripping a ring from said row, of lever operating mechanism for clamping the jaws on a ring, and means actuated by the lever operating mechanism for rocking said shaft, for the purpose described.

2. In a ringing instrument including a tubular housing containing a spring-pressed row of rings, a hollow head having clamping jaws at the mouth of the head, and lever operated mechanism for clamping the jaws on a ring, the combination with a rockshaft journaled in the head, of a finger rigid with the shaft, a finger loosely mounted on the shaft, and a spring co-acting with said fingers to grip a ring, and means actuated by the lever operating mechanism for rocking said shaft, for the purpose described.

CARL FORST.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
684,721	Holland	Dec. 26, 1901
1,136,149	McGowan	Apr. 30, 1915
1,306,714	Parker	June 17, 1919
1,318,491	Gibney	Oct. 14, 1919
1,594,998	Burns	Aug. 3, 1926
1,710,742	McNabb	Apr. 30, 1929