C. T. GIBNEY.

AUTOMATIC RINGING MACHINE.

APPLICATION FILED AUG. 8, 1918.

1,318,491.

Patented Oct. 14, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

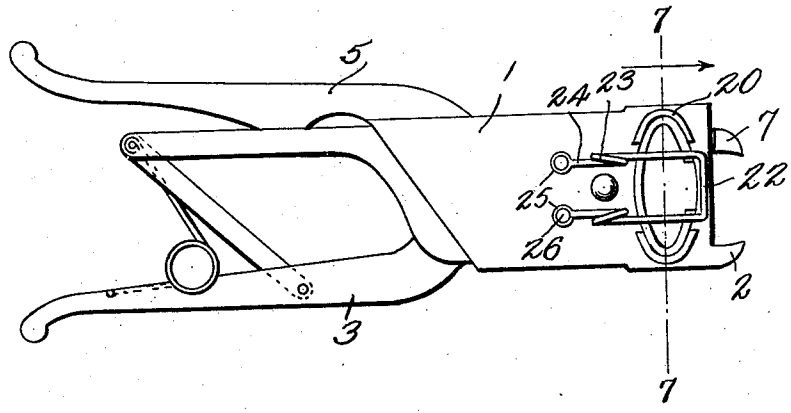


Fig. 2.

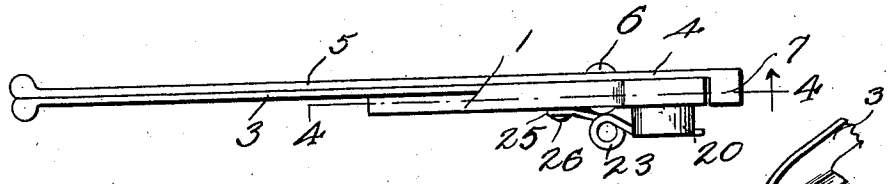


Fig. 8.

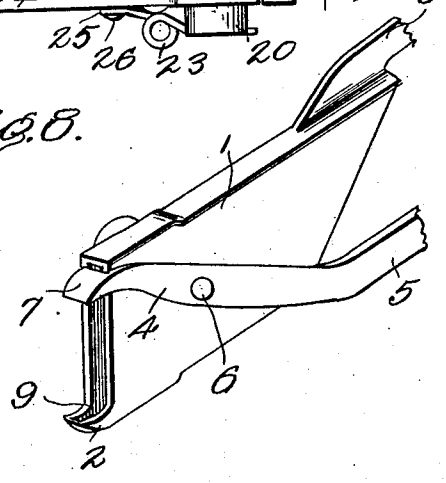
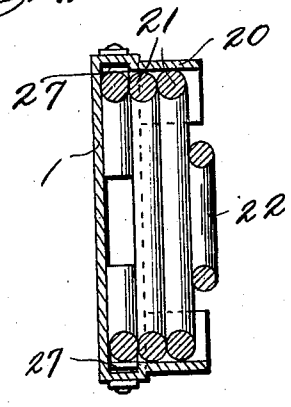


Fig. 7.



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2 SHEETS—SHEET 2.

Fig. 3.

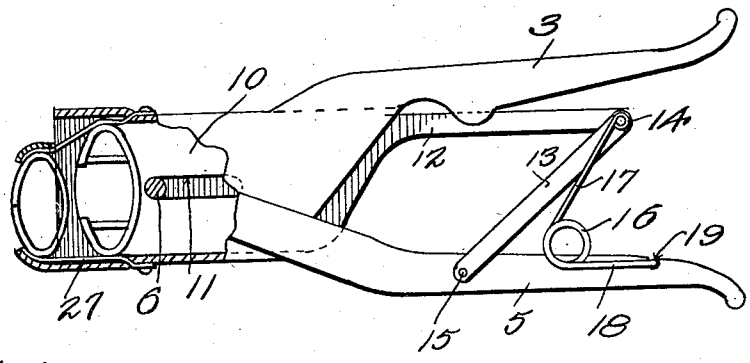


Fig. 5.

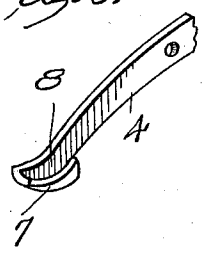
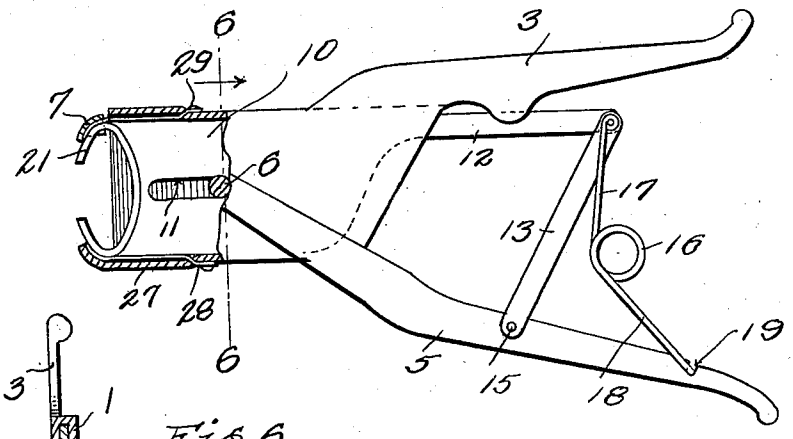


Fig. 4.



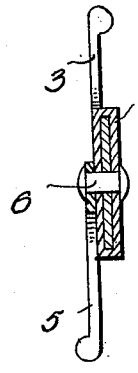


Fig. 6.

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CHARLES T. GIBNEY, OF MOTLEY, MINNESOTA.

AUTOMATIC RINGING-MACHINE.

1,318,491. Specification of Letters Patent. Patented Oct. 14, 1919.

Application filed August 8, 1918. Serial No. 249,040.

To all whom it may concern:

Be it known that I, CHARLES T. GIBNEY, a citizen of the United States of America, residing at Motley, in the county of Morrison and State of Minnesota, have invented certain new and useful Improvements in Automatic Ringing-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an automatic ringing machine and has for its principal object the production of a device which will automatically pass rings of an open condition in between jaws so as to permit the rings to be clamped where desired.

Another object of this invention is the production of an automatic ringing machine which is constructed so as to permit the ring which is being clamped to be held between the jaws for the purpose of accomplishing this object while at the same time a simple and efficient mechanism is operating for permitting a new ring to pass into the frame and then be directed between the jaws as the jaws move to their normal open positions.

Another object of this invention is the production of an automatic ringing machine wherein the plunger is mounted within the frame and is constructed so as to move to a retracted position as the handles are compressed, thereby permitting an open ring to pass in front of the plunger while upon the moving of the handles to their normal open position the plunger will move forwardly for forcing the open ring between the jaws.

A still further object of this invention is the production of an automatic ringing machine which has a housing carried upon the side of the frame whereby the housing may be provided with a number of open rings positioned in such a manner as to permit a spring to exert its influence upon the rings for directing the same into the frame as the plunger is moved to a retracted position.

With these and other objects in view this invention consists of certain novel combinations, constructions and arrangements of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings;—

Figure 1 is a side elevation of the automatic ringing machine;

Fig. 2 is a top plan view of the device;

Fig. 3 is a side elevation of the automatic ringing machine the forward portions thereof being shown in section;

Fig. 4 is a section taken on the line 4—4 of Fig. 2;

Fig. 5 is an enlarged detail perspective view of the auxiliary clamping jaw;

Fig. 6 is a vertical section through the forward portions of the device taken on the line 6—6 of Fig. 4;

Fig. 7 is a vertical section through the frame and ring housing;

Fig. 8 is a detailed perspective view of the forward end of the automatic ringing machine showing the opposite side to the side disclosed in Fig. 1.

Referring to the accompanying drawings by numerals it will be seen that the automatic ringing machine comprises a frame 1 having the primary jaw 2 formed thereon as shown in Figs. 1 and 8. The frame 1 is substantially rectangular in vertical section as illustrated in Fig. 6 although it is of course obvious that sufficient space must be provided for the reception of a ring in an open condition as well as the reciprocating movement of the plunger to be hereinafter described. This frame 1 is elongated and has an open end while the primary jaw 2 projects beyond the forward end of this construction. The handle 3 is formed integral upon the frame 1 and projects rearwardly therefrom although of course it is obvious that any desired manner may be employed for permanently securing the handle 3 upon the frame.

The auxiliary jaw 4 has a handle 5 projecting therefrom and this auxiliary jaw 4 is pivotally mounted upon one side of the frame 1 by being carried upon the pivot rivet 6. This rivet 6 projects through the frame 1 as shown in Fig. 6 and as it projects for a spaced distance upon one side of the frame 1 sufficient space is provided for the accommodation of the auxiliary jaw 4. This jaw 4 is provided with a lip 7 formed integral thereon and extending to one side thereof as shown clearly in Figs. 5 and 8. It will be noted that the lip 7 is provided with a curved groove 8 upon its inner surface and this groove 8 registers with the open forward end of the frame 1 for purposes to be hereinafter described. It will also be noted that the primary jaw 2 is provided with a groove 9 which is at all times in alinement with the groove 8 formed in the lip 7 of the auxiliary

jaw 4. The handles 3 and 5 project in substantial alinement with each other thus permitting the operator to easily grip the device with one hand for urging the handles 3 and 5 toward each other and thus moving the jaws toward each other for compressing a ring as will be hereinafter more specifically described.

The plunger 10 is reciprocally mounted within the frame 1 and this plunger 10 has a longitudinal slot 11 formed therein through which the rivets 6 project as illustrated in Figs. 3 and 4. Although the slot 11 will permit the plunger to be reciprocated it is obvious that the rivets 6 will hold the plunger against accidental displacement and will further limit the reciprocal movement of the plunger in either direction. The arm 12 is formed upon the inner end of the plunger 10 and projects rearwardly therefrom and is considerably smaller than the plunger as shown in Figs. 1, 3 and 4. The link 13 is pivotally mounted as indicated at 14 to the outer end of the arm 12 while the opposite end of the link 13 is pivotally mounted as shown at 15 upon the handle 5. The plunger 10 is normally urged forward while the handles 3 and 5 are normally urged apart by the action of the coil spring 16 which has one finger 17 carried upon the pivot 14 of the link and arm while the remaining finger 18 has its end fitting within the notch 19 formed in the handle 5. As a consequence since these fingers 17 and 18 are normally urged apart due to the tension of the coil spring 16 it will be noted that the handles 3 and 5 will be urged apart while the plunger 10 will be urged forwardly.

The U-shaped spring 22 is provided with coils 23 from which project fingers 24 having eyes 25 fixedly mounted upon one side of the frame 1 by the rivets 26. It is therefore obvious that the spring 24 will be normally urged inwardly toward the side of the frame 1 between the sections 20 of the housing as shown in Figs. 1 and 2. As a consequence a pressure will be exerted at all times upon rings which may be positioned within the housing as shown in Fig. 7 for causing the rings to be passed into the frame when such action is permitted by the movement of the plunger 10 as will be hereinafter described. Since the spring 22 is of a U-shaped construction it is obvious that an even pressure will be exerted upon the rings 21 adjacent their ends for directing the rings into the frame without uneven pressure at either end of the ring or without causing the rings to jam within the housing or frame 1.

When the automatic ringing machine is in use it normally assumes the position shown in Fig. 4. At this time the plunger 10 will project forwardly to a point adjacent the jaws while the handles 3 and 5 will be in an expanded position due to the action of the coil spring 16. At this time the U-shaped spring 22 may be pulled outwardly against the tension of the springs 23 thus permitting free access to the outer end of the housing formed upon the frame 1. The housing may be of any length desired so as to accommodate any number of rings and at the time the spring 22 is pulled outwardly the rings may be passed into the housing passing between the sections 20 as shown in Figs. 1 and 7. After the housing has been fed with rings the spring 22 is released thus holding the rings within the housing and at the same time exerting an inward pressure upon these rings. Of course it is obvious that the inner ring will at this time be bearing against the side of the plunger 10 for at this time the plunger is projecting forwardly and is filling the space within the frame thus preventing a ring being passed thereinto. The handles 3 and 5 may be gripped and compressed for the initial operation of the automatic ringing machine. By the compression of the handles it will be noted that the handle 5 will move toward the handle 3 while the frame plunger and frame will retain their same positions with respect to the handle 3. The action however caused by the compression of the handles will cause the link 13 to swing rearwardly. However at all times this link is supported off-center due to its pivotal connections with the handle 5 and the outer end of the frame 12 as shown in Fig. 4. As the link 13 swings to one side the coil spring 16 will be further wound to increase its tension while the arm 12 will be drawn rearwardly for operating the plunger 10 toward the rear portions of the frame 1. The rearward movement of this plunger 10 is limited further by the rivet 6 engaging the forward end of the slot 11 as shown in Fig. 3. This action will cause the U-shaped end of the plunger to be removed from the opening in the side of the frame 1 adjacent the inner end of the housing and as a consequence the urging of the links inwardly by the action of the spring 22 will cause one ring 21 to pass into the frame in front of the plunger 10 as shown in Fig. 3. It will be noted that flat springs 27 are carried by the frame 1 as shown clearly in Figs. 3 and 4. Both flat springs 27 project through the frame 1 as shown at 28 and have their outer ends pivotally secured as shown at 29 to the outer edges of the frame 1. The major portion of each flat spring 27 extends within the frame 1 while the forward ends of these flat springs 27 rest within the grooves 8 and 9 of the lip 7 and the fixed primary jaw 2 respectively. As pressure upon the handles is reduced it is obvious that the tension of the coiled spring 16 will cause the link 13 to be returned to its normal position while the plunger will

be moved forward by the arm 12. It will however further be noted that the handle 5 will be returned to its normal position and at this time the forward movement of the plunger 12 will move the ring which is carried within the frame 1 in front of the plunger in the flat springs 27 to finally rest within the grooves of the lip and primary jaw respectively. At this time the open appearance of the ring 21 may be positioned over the nose of a hog and then the handles may be compressed so as to move the lip 7 toward the primary jaw 2 thus compressing the ring as illustrated in Fig. 3 for causing the ring to pass into the nose of the hog and be permanently retained. While the ring is being clamped in the manner just specified it is of course obvious that the plunger is being retracted for permitting an additional ring to pass into the frame in front of the plunger. This operation may be continued as long as a ring remains within the housing or within the frame for as rapidly as the handles are compressed and released the ring is clamped upon the nose of the hog while a new ring is being admitted into the frame.

While in the foregoing description a suggestion has been made that the device is used for clamping rings upon the nose of a hog it is of course obvious that the structure may be used for clamping rings upon various articles such for instance as upon a box to which it is desired to attach a tag.

From the foregoing description it will be seen that a very effectual automatic ringing machine has been constructed which has a feed for providing the jaws with a number of rings at intermittent intervals, the action of the machine being such as to cause the rings to be progressively passed into the space between the portions of the device which clamp the same upon an article. It will also be noted that the reciprocal plunger is so carried as to be in position to prevent more than 1 ring passing into the frame at a single time, while the plunger will in turn move this ring to a position to be clamped in a closed position. It will also be noted that the operation of the housing upon the side of the frame will be such as to permit the rings to be readily fed into the frame while the positioning of the handles upon the rim is such as will permit the device to be easily operated simply by the compression and progressive releasing of the handles when the structure is in operation.

What is claimed is;—

1. In a device of the class described the combination of a frame having a fixed jaw, an auxiliary jaw carried upon said frame, handles extending from said frame and said auxiliary jaw whereby said jaws may be moved toward each other as said handles are compressed, a plunger reciprocally mounted within said frame, an arm extending from said plunger, a link pivotally connected to one of said handles and said arm, a coil spring connected to said last mentioned handle and said arm whereby said coil spring will normally urge said plunger forwardly, said plunger being adapted to be retracted as said handles are compressed and means for successively directing rings into said frame whereby when the plunger moves forwardly a ring which has been injected into said frame may be passed in between said jaws so that upon the compression of the jaws the ring will be clamped.

2. In a device of the class described the combination of a frame having a side opening, a housing carried upon said frame, a spring carried by said frame and extending into said housing, a primary jaw fixed upon said frame, an auxiliary jaw pivotally mounted upon said frame, handles extending from said auxiliary jaw and said frame, a plunger reciprocally mounted within said frame and having an arm extending rearwardly therefrom, and means for connecting said arm to one of said handles whereby as said handles are compressed said plunger will be reciprocated thereby causing said spring to inject a ring into said frame so that upon the release of said plunger the ring will be passed in between said jaws thereby causing the jaws when moved to a retracted position to clamp the ring.

In testimony whereof I hereunto affix my signature.

CHARLES T. GIBNEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."