J. A. BEVERLY.

RAT TRAP.

APPLICATION FILED APR. 29, 1909.

991,128. Patented May 2, 1911.

2 SHEETS—SHEET 1.

Fig. I.

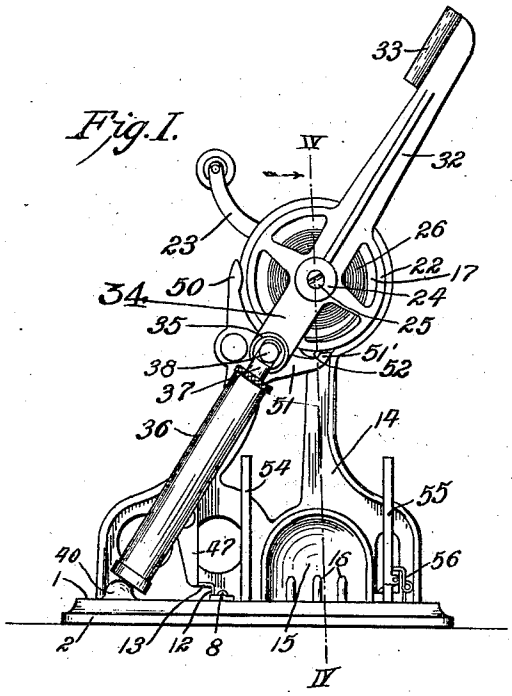


Fig. VI.

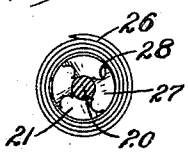


Fig. V.

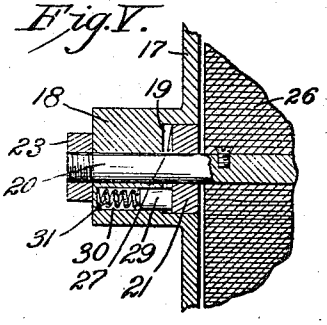


Fig. II.

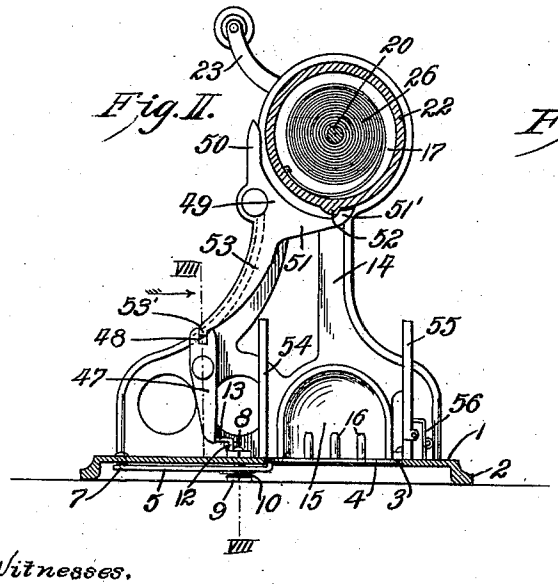
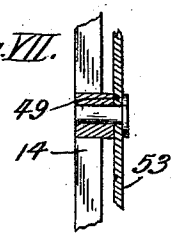


Fig. VII.



Witnesses.

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RAT TRAP.

APPLICATION FILED APR. 29, 1909.

991,128. Patented May 2, 1911.

2 SHEETS—SHEET 2.

Fig. IV.

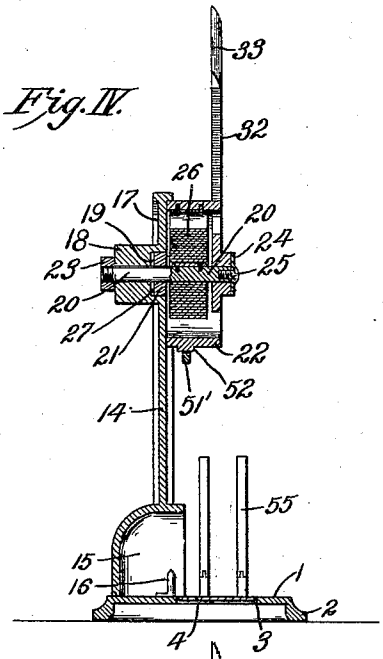


Fig. VIII.

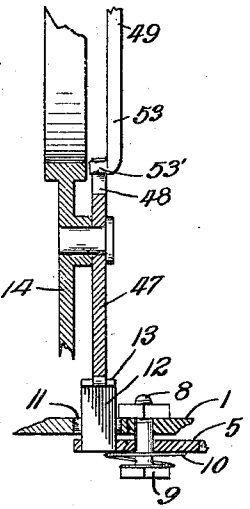


Fig. IX.

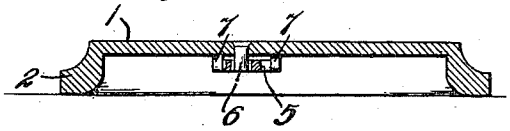


Fig. III.

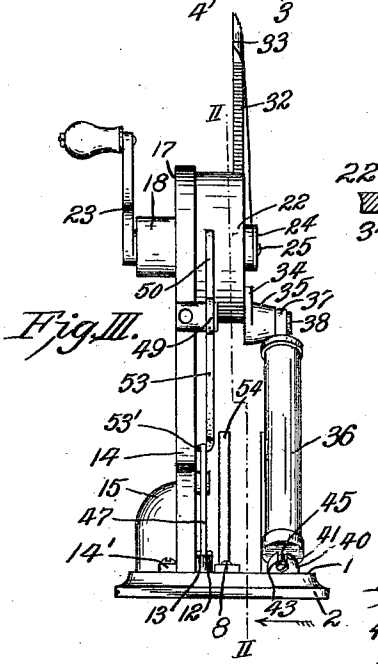


Fig. X.

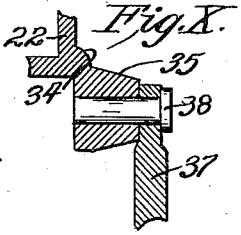


Fig. XI.

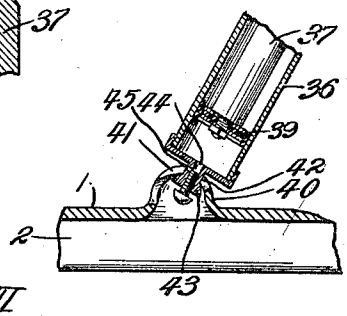
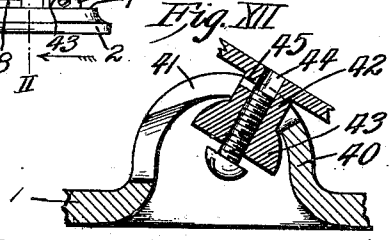


Fig. XII



Witnesses.

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UNITED STATES PATENT OFFICE.

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RAT-TRAP.

991,128. Specification of Letters Patent. Patented May 2, 1911.

Application filed April 29, 1909. Serial No. 492,813.

To all whom it may concern:

Be it known that I, JAMES A. BEVERLY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Rat-Traps; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to rat traps, and more particularly to a device of that class comprising a spring actuated striking arm, a tripping platform, and automatic resetting parts.

It is the object of my invention to provide a rat trap of this class, which is simple in construction and operation and comprises the improved details of structure hereinafter described and pointed out in the claims, reference being had to the accompanying drawings, in which:—

Figure I is a side elevation of a rat trap constructed according to my invention and set. Fig. II is a vertical section on the line II—II, Fig. III. Fig. III is an end view of the trap. Fig. IV is a cross section on the line IV—IV, Fig. I. Fig. V is an enlarged cross section of a portion of the main spring and the winding ratchet. Fig. VI is a side view of the winding ratchet, the main shaft, and a portion of the spring. Fig. VII is a sectional view of a portion of the trigger, with its mounting. Fig. VIII is an enlarged vertical section on the line VIII—VIII, Fig. II. Fig. IX is an enlarged end view of the step mounting, the top platform being in cross section. Fig. X is an enlarged detail view of the connection between the arm 34 and piston rod. Fig. XI is a central section of the cylinder and its mounting. Fig. XII is an enlarged detail view of the cylinder mounting.

Referring more in detail to the parts:—

1 designates the trap platform, which is preferably rectangular, and is supported on the depending flanges 2 in order to slightly elevate the horizontal base and provide space for mounting a trip step therebeneath. The platform is provided, near one end, with an aperture 3.

4 designates the trip step, which fits within the aperture 3 with sufficient clearance to permit free vertical movement from and to its set position.

Step 4 has a shank 5 which is offset downwardly therefrom and extends rearwardly to near the end of the platform, and is provided near the rear end with an aperture through which a pin 6, carried by the platform, is projected.

7 designates teeth which project upwardly from the rear end of the shank 5 and have knife edges that contact with the under side of the platform to provide a fulcrum for the step.

Extending through apertures in the platform and step shank 5 is a bolt 8, having a lower head 9. Surrounding said bolt and bearing against the head 9 and under side of the step shank, is a coil spring 10, which is adapted to normally retain the step 4 on a level with the platform 1, but to yield when the step is weighted from above.

Rising from platform 1 is a standard 14, the base 14′ of which extends substantially throughout the length of the platform.

15 designates a bait cup which is preferably formed integral with the standard base and has a side opening directly adjacent to the step 4, and extending substantially throughout the length of the step.

16 designates studs which are carried on the platform and project upwardly into the cup to retain the bait therein.

On the upper end of the standard is a hub plate 17, having a backwardly directed boss 18 and cam socket 19. Revolubly mounted in boss 18 is a shaft 20. Fixed on shaft 20 is a ratchet disk 21 and revolubly mounted thereon is a drum 22. The cam being located in the socket 19 and the back edge of the drum being in impingement with the forward face of the hub plate 17.

The shaft and parts are held to the standard by the winding crank 23, which is rigid on the back end of the shaft, and by the washer 24, which is held against the front face of the drum by a screw 25 that is carried on the front end of the shaft.

26 designates a clock spring which is contained within the drum 22 and fixed, at its respective ends, to the shaft and drum.

The back face of disk 21 is provided with a plurality of ratchet faces 27, which are inclined outwardly in the direction opposite to that in which the shaft 20 revolves under tension of the clock spring, and have

the semi-circular sockets 28 at their base ends.

29 designates a lock pawl which is adapted to move laterally in a socket 30 in boss 18 and is yieldingly held toward the ratchet disk by a spring 31, so that it will be projected into the disk sockets 28 when the spring is to be tensioned, or slide on the ratchet faces when the trap is in operation.

Projecting radially from the outer face of the drum 22 is a striking arm 32, the outer end of which is provided with a knife head 33. Projecting radially from the drum, opposite the striking arm, is a short arm 34, which is provided with a laterally extending boss 35.

36 designates a check cylinder, the lower end of which is pivotally mounted on the trap platform.

37 is the piston rod, the upper end of which is pivotally connected with the drum boss 35 by a pin 38, and the lower end of which is provided with a piston 39.

My preferred form of mounting for the check cylinder comprises a cup 40, which may be expanded from the trap platform and has a slot 41, one end of which is enlarged to admit a button.

The lower cap of the cylinder is provided with a neck 42 which is of less diameter than the cup slot 41, so that it may move freely therein. On the end of neck 42 is a button 43 which is adapted to pass through the enlarged portion of the cup slot and hold against the inner surface of the cup to anchor the cylinder and permit rocking movement thereof. Extending through the button and neck is a channel 44, and extending through one side of the neck is a port 45, through which air may be admitted to and expelled from the cylinder.

46 is a screw which is threaded into the channel 44 and is adapted to regulate the passage of air through the port 45.

Near the longitudinal center of the platform is an aperture 11. On the shank 5 is a post 12 which projects upwardly through said aperture and is preferably provided with a rearwardly directed lip 13.

Pivoted on the standard 14 is a trip lever 47, the lower arm of which is adapted for frictional engagement with the rear edge of the lip 13 on the step post 12, the upper arm of said lever being provided with a slot 48. Pivoted to the standard 14, is a three arm trigger 49, one arm 50, of which, is extended vertically, adjacent to the spring drum, and is beveled at its free end. A second arm 51, is extended laterally and provided with a tooth 51′ which is adapted for engagement with a lug 52 on the periphery of drum 22. The third arm 53 extends downwardly to the trip lever and has a tooth 53′ projected into the lever slot 48.

54 designates posts which are mounted on the trap platform to the rear of the bait cup and outside of the path of the striking arm. 55 designates posts which are mounted near the forward end of the bait cup and are hinged near their base and provided with a spring 56 for yieldingly holding it in a vertical position. With the parts located as described, the animal must approach the bait cup from the front, and the hinged post will yield to enable the arm to throw the animal from the trap when struck.

In using my improved trap, the main spring is tensioned through the crank 23, the pin 29 sliding over the ratchet disk during the winding operation and holding in one of the disk sockets 28 when the shaft 20 is released to the tension of the spring.

When the trap is set, should an animal place its foot on the step 4, in approaching the bait cup, the step will be depressed against the tension of the spring 10, and lower the post 12 out of its frictional contact with the trip lever 47. With the trip lever released the force of the main spring will rock the trigger 49 so that the lug 52 is released from the lever tooth 51′ and the drum freed to the action of the spring. The striking arm, being rigid on the drum 22, is then revolved rapidly and strikes the animal a killing blow, the force of which will throw the same forwardly from the platform. The piston rod 37, which is also rigidly connected with the drum 22, has sufficient clearance in the upper cylinder cap to permit air to be expelled freely from the cylinder around the piston rod during the down stroke of the striker, and the up stroke of the piston, and the air channel in the lower cap is so adjusted that the force of the striker is decreased during the subsequent down stroke of the piston, to prevent damage to the setting mechanism. As the striker approaches its set position, the lug 52 engages the beveled end of the trigger arm 50 and rocks the lever trigger arm 53 forwardly. When the trigger arm 53 is moved forwardly the lower trip lever arm is moved backwardly so that the post 12 may be elevated by the spring 10, and again lock the trip lever. As the drum continues to revolve, after the engagement of the lug 52 with the trigger arm 50, the lug is again brought into engagement with the trigger tooth 51′, and the drum and striker locked as previously described.

It is apparent that, with the mechanism described the trap will operate successively until the spring tension is exhausted.

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

1. A rat trap comprising a platform, a standard on said platform, having a drum plate and a socketed boss, a shaft revolubly mounted in said boss, a drum revoluble on

the shaft and bearing against said plate, a clock spring connected with the shaft and drum, a ratchet disk fixed to the shaft and located in a socket in said boss, a lock pin located in a socket in said boss and yieldingly tensioned toward the ratchet disk, a striking arm mounted on the drum, a trigger mechanism adapted for holding engagement with the drum, and means for rocking said trigger mechanism.

2. A rat trap comprising a platform and standard, a drum revoluble on the standard, a striking arm on said drum, a lug on the periphery of said drum, a downwardly movable step member, having a post, a trip lever pivoted to the standard and adapted for engagement with the step post and having a slotted arm, and a trigger provided with a toothed arm adapted for holding engagement with the drum lug, with an arm adapted for frictional engagement with the drum periphery, and with an arm having a tooth projected into the slot in the trip lever slot, for the purpose set forth.

3. In a rat trap, a platform and standard, a drum rotatable on the standard, means to actuate the drum, a striking arm projecting from the drum, a short arm projecting from the drum, opposite the striking arm, a slotted cup on the platform, a check cylinder, the lower head of which is provided with a button, said button being within said cup and having a narrow neck passing through the slot of the cup; a piston rod projecting from said cylinder, and connected with said short arm; and trigger means for controlling said drum.

4. A rat trap comprising an apertured platform, a standard, a striking arm revoluble on the standard, means for actuating said arm, a trigger mechanism adapted for holding said arm, a trip step set in the platform aperture and having a shank extended beneath the platform and provided with an upwardly turned knife edge contacting the platform, a pin projected through an aperture adjacent said knife edge and provided with a head for supporting said shank, a headed pin carried by the platform and extended through an aperture in the step shank, a spring carried by the head of said pin and yieldingly supporting said shank, and a post on said shank having a lip adapted for engagement with the trigger mechanism.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. BEVERLY.

Witnesses:
MYRTLE M. JACKSON,
E. A. CAHILL.