March 1, 1938. H. R. GRAYBILL 2,109,481

MOUSE TRAP

Filed May 10, 1935 2 Sheets-Sheet 1

Fig. 1.

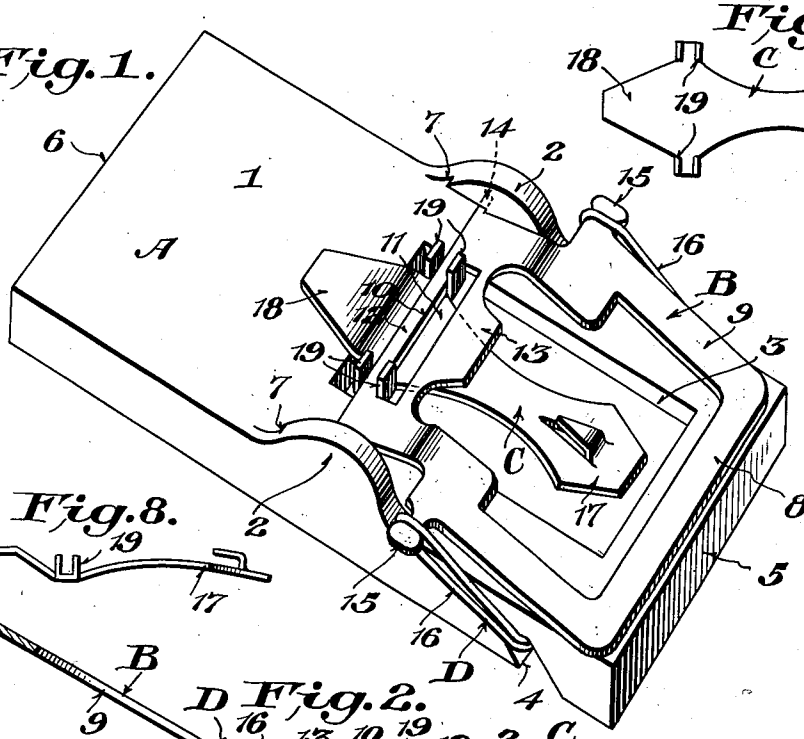


Fig. 7.

Fig. 8.

Fig. 2.

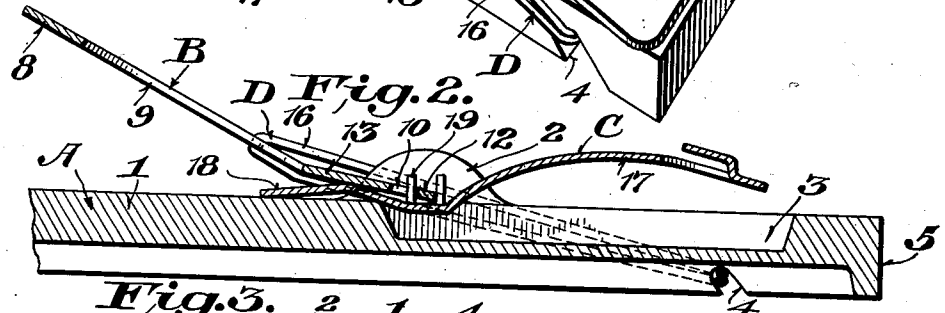


Fig. 3.

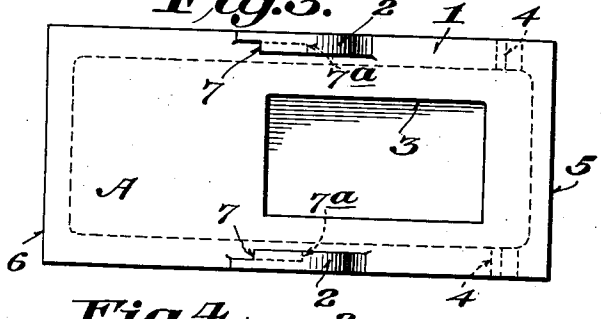


Fig. 6.

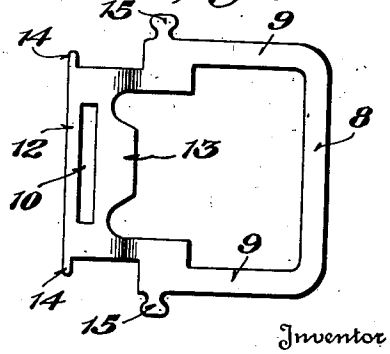


Fig. 4.

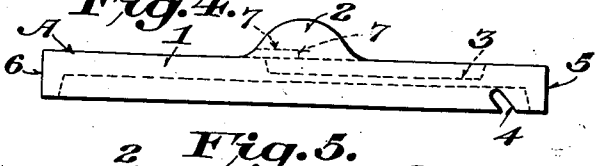
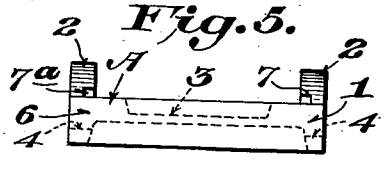


Fig. 5.



Inventor

H. R. Graybill,

By D. P. Williamson

Attorney

March 1, 1938. H. R. GRAYBILL 2,109,481

MOUSE TRAP

Filed May 10, 1935 2 Sheets-Sheet 2

Fig. 9.

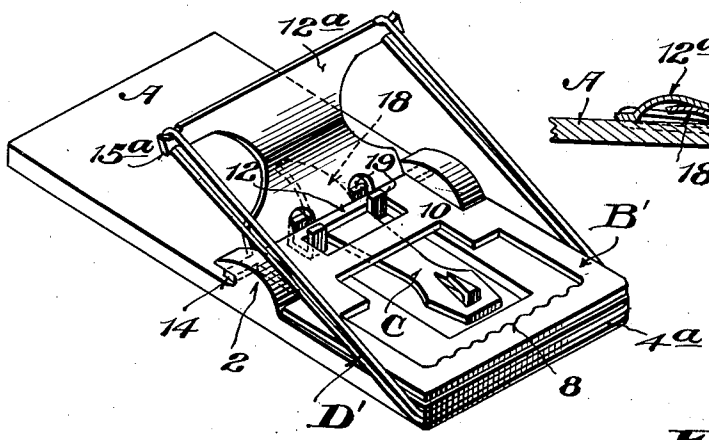


Fig. 10.

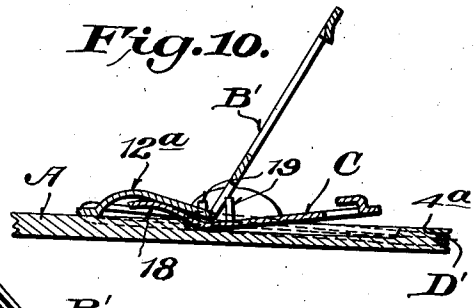


Fig. 11.

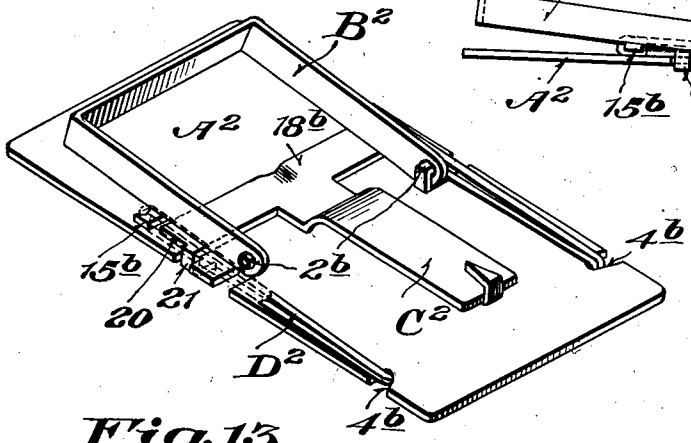


Fig. 12.

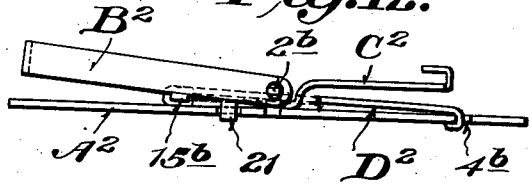


Fig. 13.

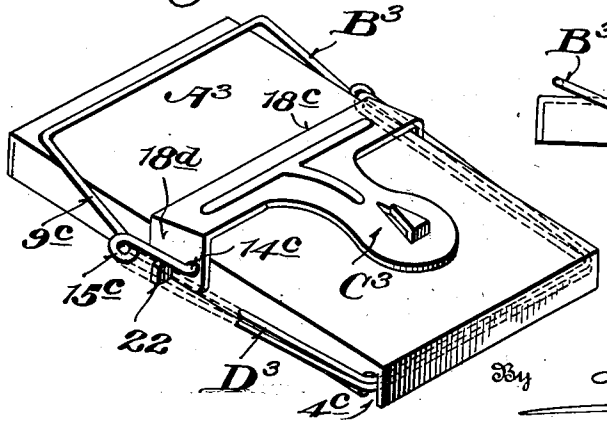
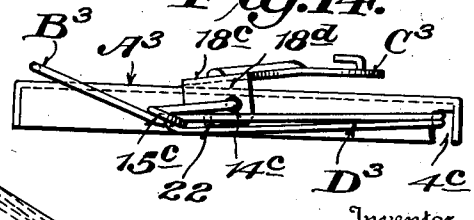


Fig. 14.



Inventor

H. R. Graybill,

By D. P. Wareham

Attorney

Patented Mar. 1, 1938 2,109,481

UNITED STATES PATENT OFFICE

2,109,481

MOUSE TRAP

Hershey Roy Graybill, Manheim, Pa., assignor to Animal Trap Company of America, Lititz, Pa.

Application May 10, 1935, Serial No. 20,840

15 Claims. (Cl. 43—81)

This invention relates to mouse traps.

A primary object of the invention is to provide a construction which greatly facilitates manufacture and assembly of the several parts of the device in the respect that no fastenings such as nails, staples, screws or the like are used, and wherein all of the parts may be separately made or pre-formed and subsequently assembled on a base, all of the said parts being held in operative position by a single element, namely an elastic member which also provides the necessary spring for controlling the snapping of the bow or jaw of the trap.

Another object of the invention is to provide a construction which lends itself to methods of manufacture involving molding or stamping operations, thereby greatly reducing the cost of original manufacture. In that connection, it is proposed to provide a structure wherein the parts may be molded or die cast from any suitable material such as a phenolic condensation product, porcelain, glass, celluloid, vegetable fibre or any material that may be die cast or molded.

A further object of the invention is to provide a trap wherein the power means for actuating the bow or jaw is located at the forward end of the base, namely the end where the animal is caught, and acts with a forward pull.

A further object is to provide a trap construction which requires no special locking device for holding the bow or jaw in its set position. That is to say, the bow or jaw is so mounted on the base that the elastic means is connected eccentrically thereto, and when the bow or jaw is manually moved toward the rear of the base it is automatically held in its set position. The mere act of thus setting the bow or jaw also simultaneously positions the combined trigger and bait pan so that when the rodent actuates the same, movement of the bow or jaw is initiated and subsequently completed by the elastic means.

A still further object of the invention is to provide a construction wherein all of the parts are readily detachable, and which also permits of an elastic band such as a rubber band being used as the spring means or power means for actuating or controlling the bow.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel features of construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and defined in the appended claims.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:—

Figure 1 is a perspective view of the trap in its sprung position.

Figure 2 is a transverse sectional view of the trap in its set position.

Figure 3 is a plan view of the base.

Figure 4 is a side elevation of the base.

Figure 5 is a rear end elevation of the base.

Figure 6 is a plan view of the jaw or bow.

Figures 7 and 8 are respectively plan and side views of the combined bait pan and trigger.

Figure 9 is a perspective view of a modified form of construction.

Figure 10 is a detail longitudinal sectional view of the construction shown in Figure 9.

Figure 11 is a perspective view of another modification of the invention.

Figure 12 is a side elevation of the construction shown in Figure 11.

Figure 13 is a perspective view of a still further modified form of the invention.

Figure 14 is a side elevation of the construction shown in Figure 13.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

According to the embodiment of the invention illustrated in Figs. 1 to 8 of the drawings, the trap includes in its organization, a base designated generally as A, a bow or jaw B, an actuator C and a power element D.

The base is preferably made of any suitable moldable material, that is a plastic material which may be made by a molding or die casting operation. Medially of the base, adjacent the sides thereof, there is provided the upstanding pivot lugs 2—2 while at one side of the lugs, namely toward the forward end of the base, the upper surface thereof is recessed as indicated at 3. The lower side of the base may be provided with a transverse bottom groove 4 adjacent the front or anvil end 5.

The upstanding medial lugs 2—2 are provided at their inner sides with slots or sockets which open toward the rear end 6 of the base. These slots are designated as 7—7 and have blind or socket forward ends.

The bow or jaw B consists of an open frame-like member including the rodent engaging or hammer portion 8, side arms 9 and a transverse bottom web 10 which is provided with a slot 11 which separates the bait pan engaging cross piece 12 from the offset tongue portion 13 which is intended to be engaged by the bait pan when

the trap is set to initiate movement of the bow or jaw. The web portion 10 of the bow or jaw is provided with the laterally extending pivot lugs 14 which engage in the socket ends of the slots 7—7. Also, the side arms 9 of the bow are provided, eccentrically with reference to the pivots 14, with the laterally offset anchoring lugs 15 for receiving an elastic member 16 whose intermediate portion is preferably located in the slot 4 at the under side of the base.

The jaw actuator is designated generally as C and preferably includes a bait pan 17 having a suitable impaling portion and a bow actuating or trigger portion 18. Intermediate the portions 17 and 18 the member C is provided with opposite pairs of upstanding lugs 19—19 for engaging and interlocking with the cross piece 12 of the web 10.

In practice, the base A, bow or jaw B and actuator C including the combined trigger and bait pan, are made according to suitable manufacturing practices and the unit C is assembled with the bow B by reason of the fact that the upstanding pairs of lugs 19—19 engage and interlock with the cross piece 12 of the web. When thus interlocked, the bow or jaw is ready to have its pivot lugs 14 inserted in the socket ends of the slots 7. When this part of the assembly is completed, it is only necessary to assemble the elastic member D in place. This elastic member is preferably a rubber band 16 whose looped ends may be fitted around the lugs 15 on the arms 9, while the intermediate portion of the band may be fitted in the keeper groove 4 at the under side of the base. It will, of course, be understood that the elastic member D may be a spring instead of a rubber band but the latter is preferable because of its ready availability and its ease of application.

When the parts are assembled as above set forth, it will be apparent that all of the moving parts of the trap are held in assembled position without the aid of any fastenings whatever. The pull of the elastic member D toward the front end of the base holds the bow B as well as the actuator C including the bait pan assembled to the base because the actuator is interlocked with the bow and positioned between the same and the base.

When it is desired to set the trap, it is only necessary to move the bow B toward the rear end 6 of the base. The bow will stay in the set position due to the fact that the elastic member D is connected eccentrically to the arms of the bow. In other words, when the bow is in its rearward set position the lugs 15 will be on the rear side of the pivots 14 and the spring or elastic member D will hold the bow down toward the rear of the base. In this position, the tongue 13 of the bow overlies the trigger portion 18 of the actuator or movement initiator C which is loosely interlocked therewith. The bait carrying portion 17 of the bait pan is bent at an angle, or elevated as shown in Figure 2, with respect to the trigger 18. Accordingly, when an animal or rodent tugs or pulls at the bait on the pan, the same will be either raised or depressed by the rodent which will cause the trigger portion 18 to press upwardly against the tongue 13 of the bow. This movement will initiate upward movement of the bow to spring the trap. Obviously, as soon as upward movement of the bow or jaw B results in the side portions of the rubber band D rising above the pivots 14, the bow will be snapped toward the front end of the trap, and the hammer portion 8 will descend toward the anvil portion of the base to catch the rodent.

From the foregoing, it will be apparent that the present invention provides a trap whose parts may be readily assembled and disconnected by simply positioning and removing the elastic member D, and which may be readily set by simply moving the bow backwardly without the aid of any special locking device. When the rodent depresses the bait pan, the trigger portion 18 of the actuator will initiate movement of the bow under spring tension and consequently snap the bow forwardly to trap the rodent. All of the elastic force or spring pull is toward the forward end of the base and performs the dual function of trapping the rodent and holding all of the parts in assembled position.

In the modification shown in Figures 9 and 10, all of the essential features and characteristics shown in Figure 1 are preserved, the only substantial difference being in the change in position of the point of anchorage of the resilient member D′ to the bow or jaw B′. The cross piece 12 of the web 10 is provided with an angular or inclined extension 12^a having the laterally offset lugs 15^a which form a connection for one end of the elastic member D′ which is looped about the forward end of the base A′ and held in a groove or slot 4^a. By positioning the lugs 15^a at a greater distance from the front edge of the base A′, it will be apparent that the elastic means D′ is placed under greater tension and, therefore, imparts more power to the bow or jaw when it is snapped forward. Figures 9 and 10 also illustrate that the inner edge of the cross bar or hammer portion of the bow B′ may have serrations which either are confined between the planes of the top and bottom faces of said cross bar or hammer portion, or which extend downwardly only slightly beyond the bottom face of said cross bar or hammer portion. Such serrations are not dangerous to a person setting the trap and do not penetrate or cause pain in a member of an animal which is caught in the trap. At the same time they serve effectively to prevent an animal which may be trapped from pulling itself out of the trap.

In Figures 11 and 12, the base A^2 is in the form of a flat sheet provided medially of its side edges with the struck-up pivot elements 2^b and provided adjacent its forward end with the side notches 4^b. The bow or jaw B^2 has its side arms provided with the laterally projecting lugs 15^b which provide an anchorage for one end of the elastic member D^2 which is held in the notches 4^b. It will, of course, be understood that the lower ends of the side arms of the bow B^2 are pivotally mounted on the struck up lugs 2^b of the base. The bait pan or trigger unit C^2 includes a transverse portion 18^b which extends substantially across the base A^2 to provide jaw actuating portions 20 adapted to lie at one side of the side arms of the bow or jaw B^2 as shown in Figure 11. The part 18^b is held loosely pivoted to the base by the downwardly and inwardly turned lugs 21 so that it may have a slight pivotal or rocking movement on the base sufficient to tilt the jaw B^2 when it is set and cause it to spring past center under the influence of the tensioned elastic member D^2. In this connection it will be observed that the lugs 21 extend below the bottom of the base A^2 and that they are engageable with a surface on which the trap rests to support the medial portion of the base slightly above said surface. When the jaw B^2 is in its "set" position

shown in the drawings the preponderance of weight of the trap is rearwardly of the lugs 21. Consequently, the rear end of the base A^2 rests on the trap supporting surface and the forward end of said base is disposed above said surface. It follows, therefore, that the trap may be sprung not only by downward movement of the trigger C^2 relative to the base A^2, but also by downward movement of the forward end of the base, since this latter movement will result in the lugs 21, and consequently the trigger, being moved upward to initiate springing of the jaw B^2.

Figures 13 and 14 illustrate an embodiment of the invention wherein the base A^3 is formed with downturned side and end flanges, the former being provided with notches 4^c which provide a front anchorage for the elastic member D^3. The bow or jaw B^3 is preferably made of wire having the side arm portions 9^c formed with the loops or eyes 15^c which provide a point of connection for the elastic member D^3 with the jaw. The lower ends of the arms 9^c are provided with the inturned pivot portions 14^c which enter suitable openings in the side flanges of the base, thereby to pivotally mount the jaw on the base and also provide means for pivotally connecting the bait pan or trigger C^3 with the base. The bait pan or trigger C^3 is provided with a transverse portion 18^c which includes the downturned flanges 18^d having the laterally offset jaw engaging lugs 22. When the trap is set, as shown in Figure 13, the side arms 9^c of the jaw rest on the upper sides of the lug 22 and the bait pan is lifted at its forward end as shown in Figure 14. When the rodent weights down the forward end of the bait pan C^3, the lugs 22 will shift the side arms of the jaw B^3 upwardly and move them over center, so that the jaw will snap down against the forward end of the base.

In all of the foregoing modifications, it will be apparent that the essential features and characteristics of the invention are preserved, and the changes in detail illustrated constitute permissible variations of the underlying principles and features of the invention.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood, that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

I claim:—

1. A trap including a base, a bow pivotally mounted on the base, elastic means connected to the base and also connected to the bow eccentrically to its pivotal connection with the base whereby said bow may be held in its set position or shifted to and held in its sprung position, and a trigger loosely interconnected with the bow and held in assembly with the bow and the base by the bow and adapted to initiate movement of the bow from its set position.

2. A trap including a base formed with lugs on its upper face and having a transverse groove in its bottom face at one side of the lugs, a bow pivotally mounted in said lugs, a resilient member connected with the bow and held in said groove, and an actuating member interlocked with said bow and held in assembled relation to the base and bow by said resilient member.

3. A trap including a base provided with pivot slots therein, said pivot slots being blind at one end to provide sockets and having their open ends directed toward the rear of the base, a bow having offset pivot portions fitting in said sockets, an elastic member connected to said bow at a point eccentric to said offset pivot portions and anchored to the base at a point between the blind ends of the pivot slots and the front of the base, and means for initiating movement of the bow when the elastic member is under tension.

4. A trap including a base, a bow pivoted to the base, an elastic member connected with the bow eccentric to its pivot and also connected with the base adjacent the forward end thereof, and a bow actuating trigger detachably and pivotally engaged with said bow and held in assembly therewith between the bow and the base.

5. A trap including a base, a substantially bail-shaped jaw member including a cross portion and side arms, the ends of the latter being pivotally connected to the base, elastic means connecting the side arm portions of the jaw between their free and their pivoted ends with the base, and a bow releasing trigger pivotally connected with said bow and rockably engaging the base.

6. A trap comprising a base, a bow including a pair of side arms connected together at their outer ends and pivoted to the base at their inner ends, elastic means connected with said side arms between their outer ends and their points of pivotal connection with the base and extending forwardly from said arms and connected with the base forwardly of the pivots of said arms, and a trigger for initiating upward and forward swinging movement of said bow from a rearwardly swung position thereof in which its pivots are disposed above the line of pull of said elastic means.

7. A trap comprising a base, a bow pivotally engaged at one end with said base and separable therefrom by rearward movement relative to the base, elastic means connected with the base forwardly of the pivotal connection of the bow therewith and connected with said bow between its pivoted and free ends, whereby it maintains the bow assembled with the base and is effective to swing the bow forwardly and downwardly, said bow being swingable rearwardly to a position in which its pivotal axis is disposed above the line of pull of said elastic means, and a trigger for initiating upward and forward swinging movement of said bow from its last mentioned position.

8. A trap as set forth in claim 7 in which the trigger is rockably mounted against the base and is separably connected with the bow and held by the latter in operative position between the bow and the base.

9. A trap as set forth in claim 6 in which the trigger is rockably mounted against the base and is retained in assembly with the trap by the bow.

10. A trap as set forth in claim 6 in which the trigger is rockably mounted against the base and is provided with upstanding lugs engaging a portion of the bow, coaxial with its pivotal axis, whereby it is retained in assembly with the trap.

11. A trap as set forth in claim 6 in which the trigger is rockably mounted against the base and is separably connected with the bow at a point coaxial with the pivotal axis of the bow and is retained in assembly with the trap by the bow and in which a portion of said trigger extends rearwardly of said pivotal axis to underlie a portion of the bow which is disposed rearwardly of said pivotal axis when the bow is in a rearwardly swung position.

12. A trap comprising a base, a bow pivoted at one end to said base, elastic means connected

with the base forwardly of the pivotal axis of said bow and connected with the bow between its pivoted and free ends, said bow being swingable rearwardly to a set position in which its pivotal axis is disposed above the line of pull of said elastic means, a trigger rockably mounted on the base for tilting movement to initiate upward swinging movement of said bow from its rearwardly swung set position, and lug means extending from said trigger below the bottom of the base whereby the trigger may be raised relative to the base to initiate upward swinging movement of the bow from its set position by downward movement of the base.

13. A trap comprising a base, a bow pivoted at one end to said base, elastic means connected to the base forwardly of the pivotal axis of said bow and connected with the bow between its pivoted and its free ends, said bow being rearwardly swingable to a position in which its pivotal axis is disposed above the line of pull of said elastic means, and a trigger rockably engaged with the base at forwardly and rearwardly spaced points and having a portion thereof between said points underlying a portion of the bow when the latter is in its aforesaid rearwardly swung position whereby said trigger is effective by either upward or downward rocking movement to initiate upward swinging movement of the bow from its rearwardly swung position.

14. A trap comprising a base, a bow pivoted to the base, an elastic tensioned element anchored at its ends to opposite side portions of said bow at points spaced from the pivotal connections of the bow with the base, the intermediate portion of said elastic element being disposed forwardly of the pivotal connections of the bow with the base and extending across the base and being anchored to the latter, and a trigger for initiating closing swinging movement of said bow from an open or set position in which its pivots are disposed above the lines of pull of the side portions of said elastic element.

15. A trap as set forth in claim 14 in which the elastic element comprises a rubber band.

H. ROY GRAYBILL.