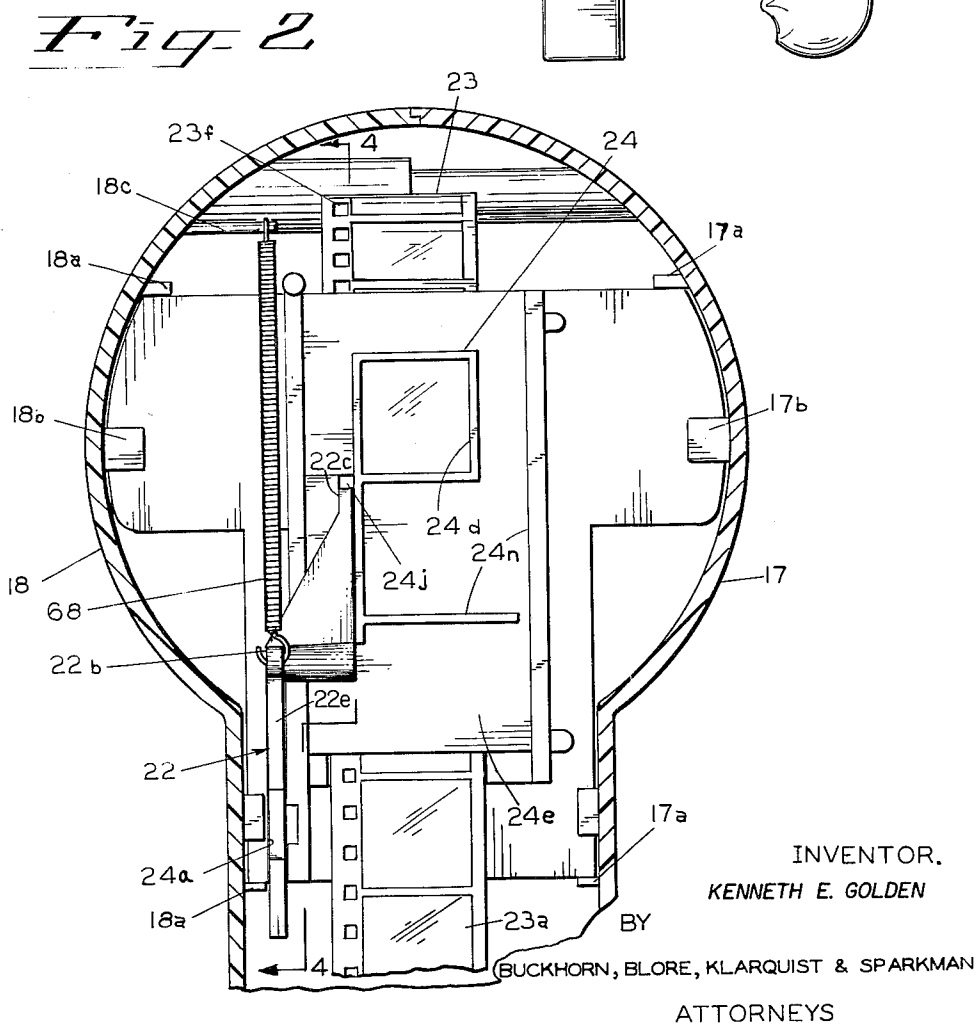
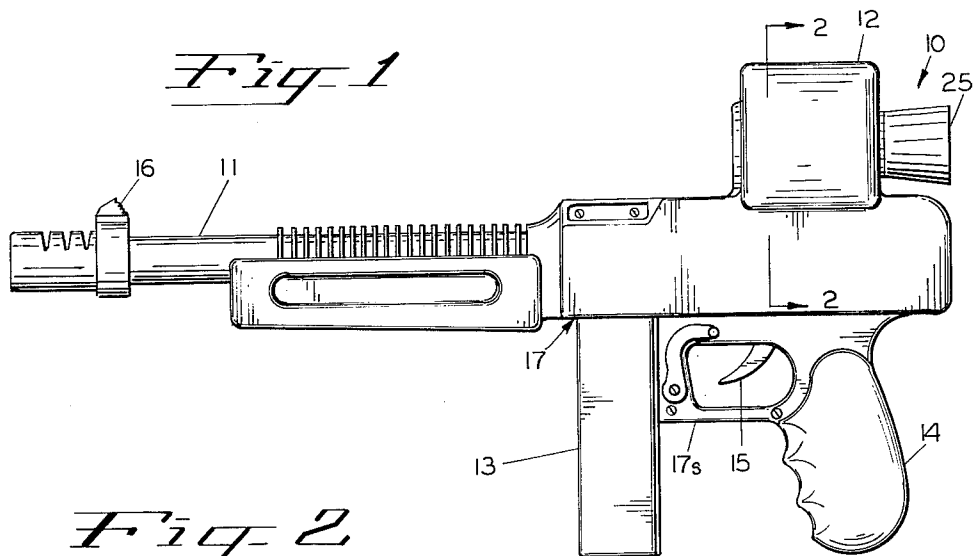


K. E. GOLDEN

PHOTOGRAPHIC TOY GUN

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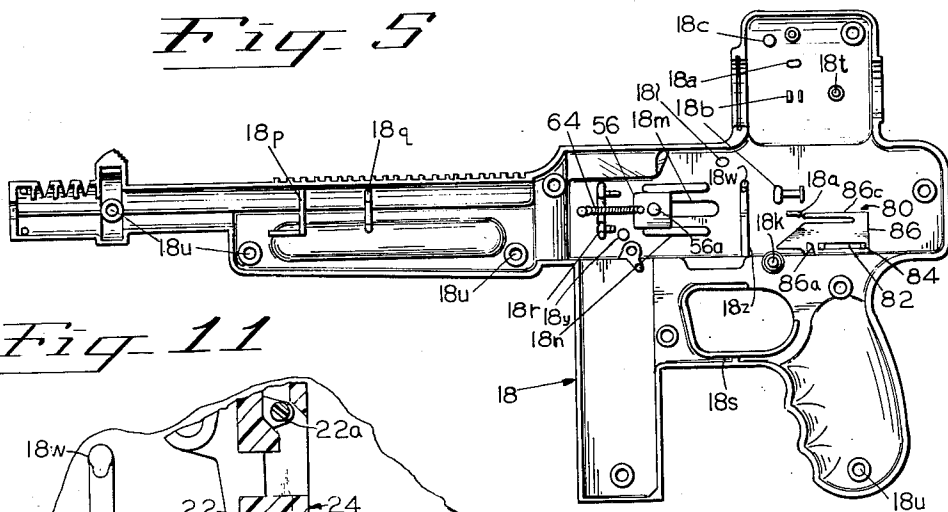
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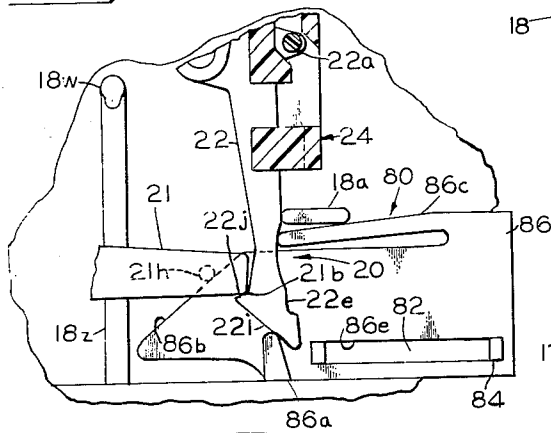
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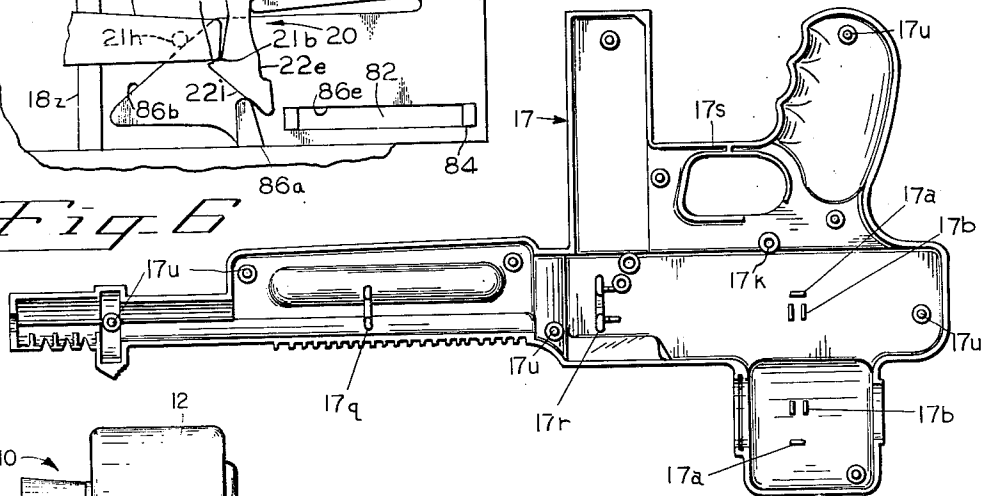
*Fig. 5*



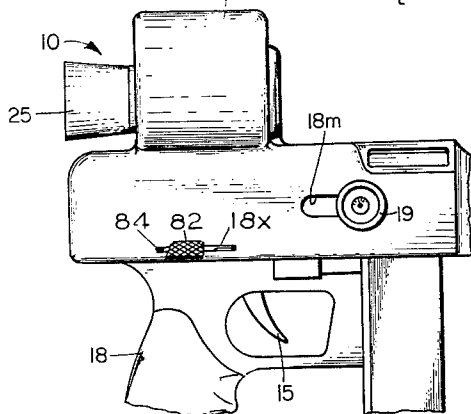
*Fig. 11*



*Fig. 6*



*Fig. 3*



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Nov. 23, 1965

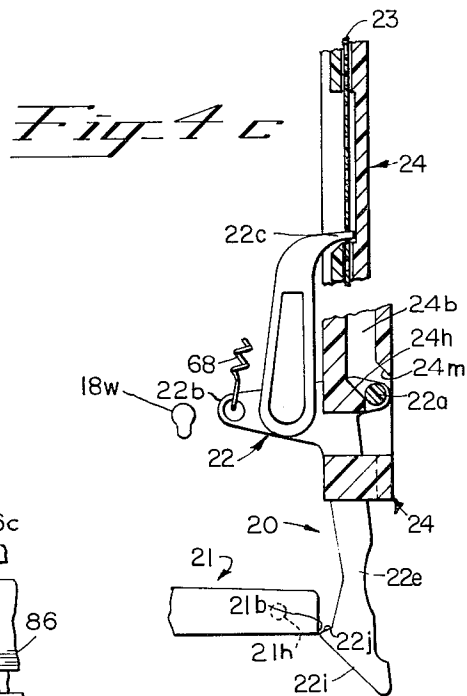
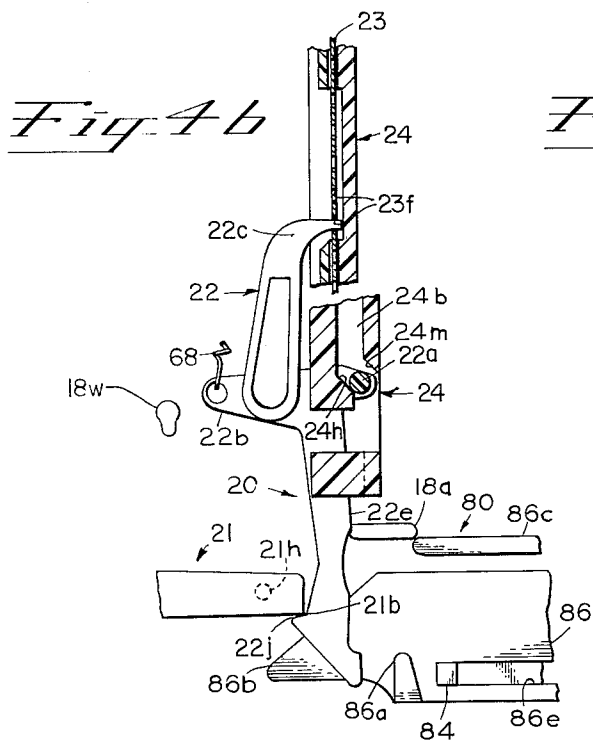
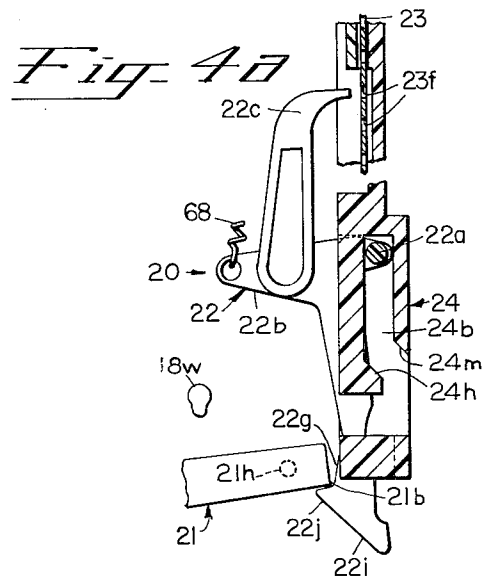
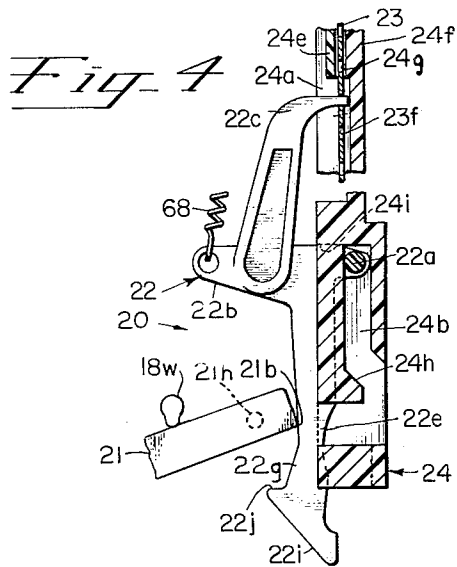
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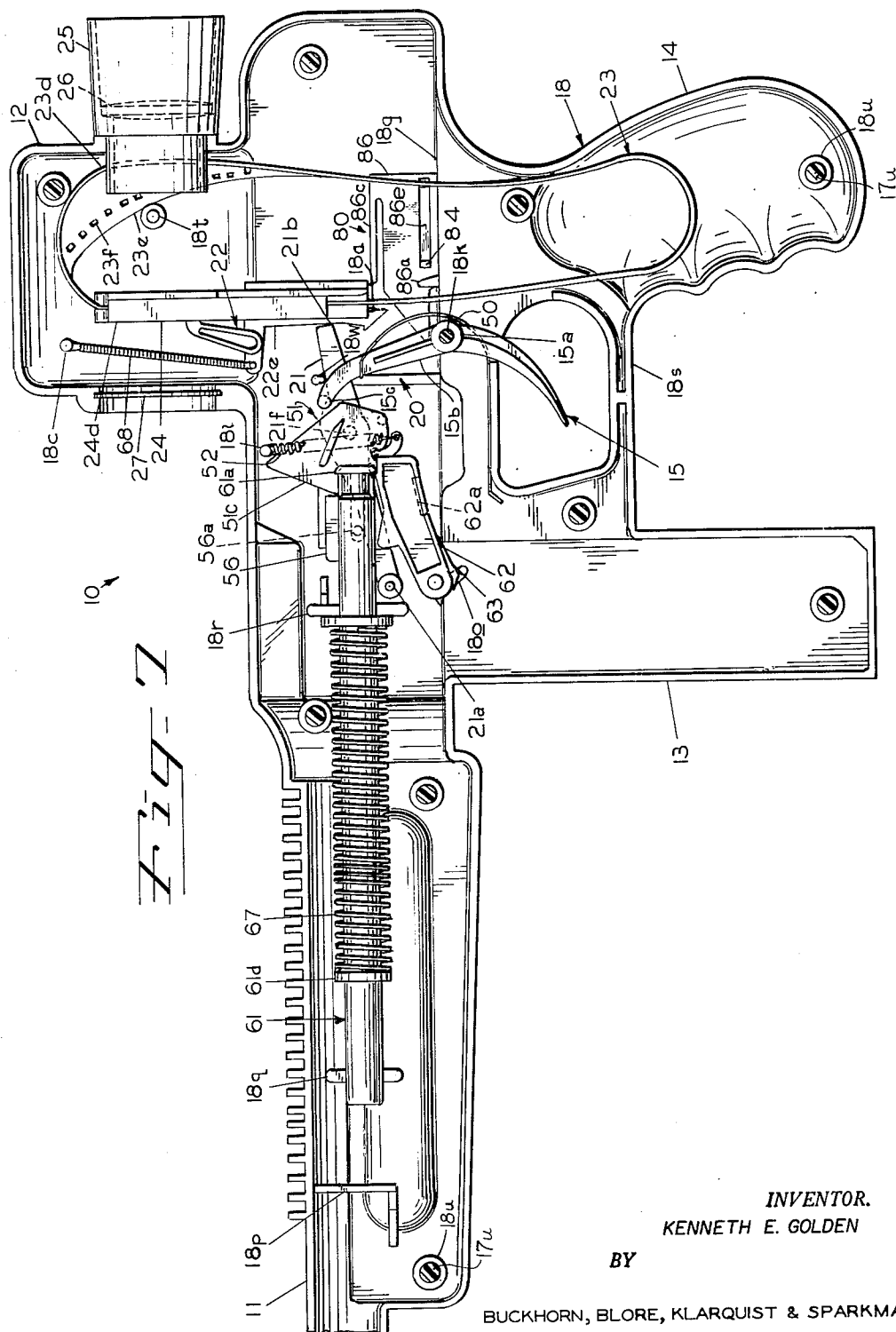
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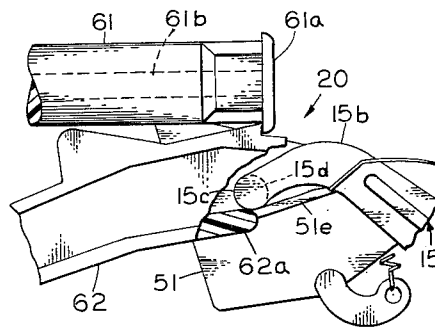
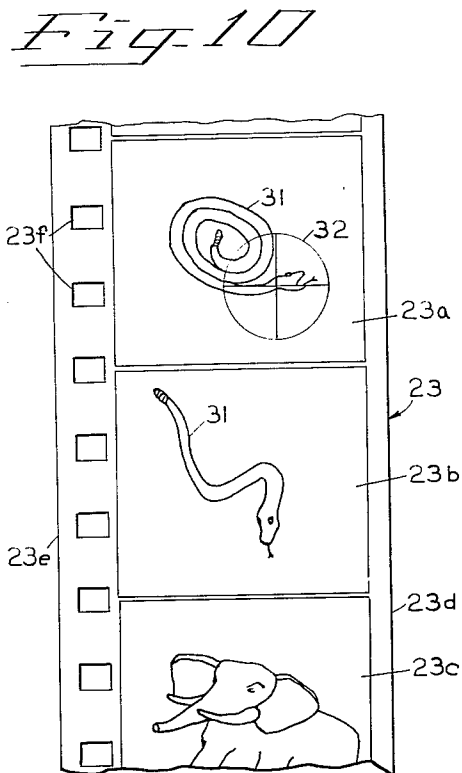
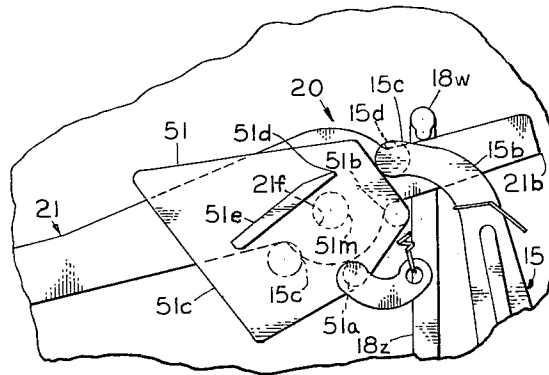
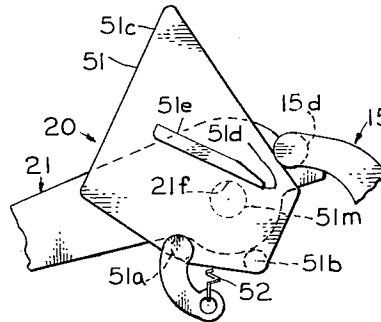
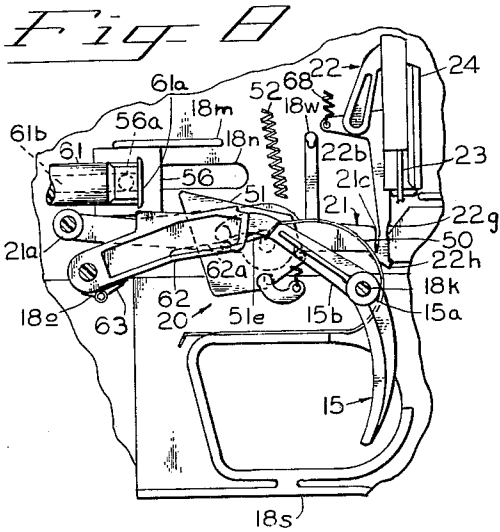
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PHOTOGRAPHIC TOY GUN

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## PHOTOGRAPHIC TOY GUN

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Filed Nov. 30, 1962, Ser. No. 241,266  
9 Claims. (Cl. 40—82)

This invention relates to a photographic toy gun and more particularly to a toy gun having a transparency viewer thereon.

An object of the invention is to provide a photographic viewer gun which sequentially presents a first image of a target with crosshairs superimposed thereon and then an image of the target after being apparently shot.

Another object of the invention is to provide a toy gun having a changeable picture display device and simulating a telescopic gunsight mounted on the rear portion of the barrel.

A further object of the invention is to provide a photographic viewer gun wherein a strip film is moved step-by-step past an aperture to sequentially present to the aperture an image of a target object and an image of the object after a shot is simulated.

Another object of the invention is to provide a toy gun with a changeable picture display viewer, together with a trigger mechanism for changing the pictures to be viewed.

The invention provides a toy gun which has a barrel portion with a picture display device mounted on the upper rear portion of the barrel portion to simulate a telescopic gunsight and a plurality of pictures are provided, together with a trigger mechanism for sequentially locating the pictures in the viewing position. The plurality of pictures may take the form of an endless film strip provided with perforations spaced therealong and an intermittent pawl feed may be provided for sequentially advancing the film strip step-by-step past an aperture plate, together with a trigger mechanism of the gun having actuating means for the intermittent strip advancing means.

A complete understanding of the invention may be obtained from the following detailed description of a photographic toy gun forming a specific embodiment thereof, when read in conjunction with the appended drawing, in which:

FIG. 1 is a side elevation of a photographic toy gun forming one embodiment of the invention;

FIG. 2 is an enlarged vertical section taken along line 2—2 of FIG. 1;

FIG. 3 is a partial side elevation of a portion of the other side of the gun of FIG. 1;

FIGS. 4, 4a, 4b and 4c are enlarged vertical sections taken along line 4—4 of FIG. 2 and showing a film-feeding mechanism in different positions during a cycle of operations;

FIG. 5 is a side elevation of one housing section of the gun of FIG. 1 showing the interior of such section;

FIG. 6 is a side elevation of the other housing section of the gun of FIG. 1 showing the interior of such section;

FIG. 7 is an enlarged, partially sectional, side elevation of the housing section of FIG. 5 showing operating parts of the gun mounted therein;

FIG. 8 is a fragmentary view similar to FIG. 7 but with parts thereof in different positions;

FIGS. 9, 9a and 9b are elevational views on a further enlarged scale showing a portion of the mechanism shown in FIGS. 7 and 8;

FIG. 10 is an enlarged, fragmentary, front elevation of a film strip constructed in accordance with the invention; and

FIG. 11 is an enlarged, vertical section similar to FIG. 4b and including a framing mechanism.

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Referring now in detail to the drawings, there is shown therein a photographic toy gun 10 (FIG. 1) having a barrel 11, a viewer 12 positioned on the rear end of the barrel and simulating a telescopic gunsight, a simulated magazine portion 13, a handle 14 and a movable trigger 15. The gun also has a front sight 16 on housing sections 17 and 18 which are preferably composed of injection molded plastic material and are secured together by fusing spots thereof together to form the gun housing. The gun is provided with a cocking bolt handle 19 (FIG. 3) and a trigger mechanism 20, both capable of moving an actuating arm 21 (FIG. 7) to actuate a pawl 22 to advance an endless film strip 23 to and past viewing apertures 23d (FIG. 2) in an aperture plate member 24 for viewing by an eyepiece or magnifier 25 (FIG. 7) against light, illumination being provided from a translucent, ground glass, light-dispersing member 27. The eyepiece 25 has a magnifying lens 26 therein.

The trigger mechanism 20 is analogous to the so-called single-action trigger mechanism well known in the gun and toy gun arts, and the bolt handle 19 and device associated therewith, to be described below, must be actuated after each actuation of the trigger 15 in order to permit the trigger mechanism 20 to be actuated again by the trigger 15. The film strip 23 carries a number of frames or transparencies illustrated by frames 23a, 23b and 23c (FIG. 10), and has pairs of the frames arranged in adjacent positions as illustrated by frames 23a and 23b in which an image of a target object or wild animal, such as, for example, a snake 31, is shown in a position ready to attack with an image or picture of a crosshairs 32 simulating the crosshairs of a gunsight superimposed on the animal and the picture of the succeeding frame which is presented upon actuation of the trigger mechanism shows the animal 31 after being theoretically struck by a bullet from the gun. The viewer 12 may be, of course, provided with an actual reticle which is superimposed on each picture being shown if it is so desired, but the effect of the reticle on the animal just before shooting thereof with the gun is simulated and with no reticle in the picture presented after the so-called shot gives a realistic effect.

The lens holder 25 is composed of plastic material and is fused to the housing sections 17 and 18 by positioning a solvent therebetween which fuses the lens holder to the housing in a position in which the forward end of the lens holder projects a substantial distance into the housing portion of the viewer 12, and the film strip is twisted slightly in its return path from the aperture plate member 24 with one edge 23d (FIG. 7) trapped under the forward end of the lens holder 25 and a second edge 23e bearing against a pin 18t formed on the housing section 18. This keeps the portion of the film in the return path out of the light path from the aperture to the lens. The film then travels down into a loop in the hollow handle portion of the gun.

The feed of the film strip is effected by the pawl 22 which is mounted for vertical sliding movement in the molded plastic aperture plate member 24. The aperture plate member 24 is held between stops 17a, 18a, 17b and 18b molded on the housing sections 17 and 18. The pawl is provided with a pivot pin 22a (FIG. 4) which projects into a slot or guideway 24b and the pawl projects through a pawl-guiding slot 24a. The pin 22a and the slots 24a and 24b mount the pawl 22 for vertical sliding movement and also for pivotal movement about the pin 22a. A tension spring 68 secured to an arm 22b at one end and to a pin 18c (FIG. 7) at the other end biases a claw or film strip engaging pawl portion 22c (FIGS. 4 to 4c) toward engagement with the film strip 23 which has standard perforations 23f formed therein.

The actuator arm 21 has a bearing portion 21a pivoted on pin 18y of the section 18. When the actuator arm 21

is pivoted from the position thereof shown in FIG. 7, an end portion 21b thereof engages a cam surface 22g on an arm 22e of the pawl 22 and moves the pawl first in a pivotal, counterclockwise direction to retract the claw 22c from the film strip to a position thereof shown in FIG. 4a by the portion 21b riding along the cam surface 22g of the arm 22e. Then the surface 21b engages projection 22j and pulls the pawl 22 downwardly relative to the film 23. During the lower end portion of the movement of the arm 21, as illustrated in FIG. 4b, a cam portion 24h of the aperture plate member 24 pushes the pin 22a to the right to swing the pawl 22 clockwise to move the pawl portion 22c into one of the perforations 23f. Continued movement of the arm 21 causes the cam portion 24h to move the pawl 22 slightly counterclockwise to the position thereof shown in FIG. 4c. This is aided by the end portion 21b moving along the upper surface of the projection 22j to trigger the pawl 22. During the trigger action, the pawl 22 is rapidly pivoted and the projecting portion 22j snaps out from under the arm 21, a relieved portion 22i, providing clearance. The arm 21 continues to move downwardly while the spring 68 snaps the pawl 22 upwardly to pull the film strip 23 upwardly to present the next frame to the aperture, a cam portion 24m guiding the pin 22a into the guideway 24b. The upward movement of the pawl is limited by a stop portion 24i. The drive of the pawl 22 by the arm 21 may be effected continuously by the bolt handle member 19 or may be effected alternately by the bolt handle 19 and the trigger 15.

The aperture plate member 24 is composed of molded plastic material and has the slots 24a and 24b provided therein and also has aligned apertures illustrated by the aperture 24d in plate-like portions 24e and 24f as illustrated in FIGS. 2 and 4. A guide passage 24g is formed between the plate-like portions 24e and 24f. The aperture plate member 24 also has a guide slot 24j therein for the claw 22c, and is provided with ribs 24n for strength.

The finger member or trigger (FIGS. 7 to 9a) is composed of molded plastic material, has a journal portion 15a along with a curved arm 15b having a rounded end portion 15c, and is mounted pivotally on pin 18k of housing section 18. The pin 18k fits into sleeve portion 17k in housing section 17. Spring 50 urges the trigger 15 toward its retracted position. An actuator plate 51 is pivotally mounted on and is carried by the arm 21, the plate 51 being pivotally mounted on a pin 51m extending through and riveted over the end of a bearing opening 21f formed on the arm 21. The plate 51 is urged upwardly and to either an overcenter position in which a pin 51a engages the arm 21 or a second overcenter position in which a pin 51b engages the arm 21 by a spring 52 secured at its upper end to a lateral projection 18l.

When the bolt handle 19 is slid from its normal position, back to the left as viewed in FIG. 3, a pin 56a (FIGS. 5 and 7) carried by a slide 56 to which the handle 19 is secured, is slid along a slot 18m, the slide 56 being slid along a guideway 18n paralleling the slot 18m. The pin 56a initially engages the upper edge of the arm 21 to swing the free end of the arm 21 downwardly, then engages edge 15c of plate 51 and pivots the plate 51 in a clockwise direction as viewed in FIG. 7 until the pin 51a engages the arm 21 and then rides along the edge 51c to push the arm 21 further downwardly to actuate the pawl through its retraction and feed strokes as described above. When the plate 51 is so pressed by the pin 56a, it swings the spring 52 to an overcenter position relative to the pivot pin 21f so that the spring 52 tends to maintain the plate 51 in the position shown in FIG. 7 relative to the arm 21.

During the movement of the bolt handle 19 to the right, the pin 56a engages a head 61a on a noise-making or clapper rod 61 and moves the head 61a of the rod over a latch arm 62. The latch arms 62 is urged counterclockwise as viewed in FIG. 7, by a torsion spring 63 bearing against the arm 62 at one end and against portion 18o of the housing section 18. After the bolt handle 19 and the slide

56 are so moved to, in effect, cock the trigger mechanism 20 and also cause the advance of the film strip 23 a distance of one frame through the aperture plate member 24, the bolt handle 19 is related and is returned to the left, as viewed in FIG. 7, by a spring 64, a clearance slot 61b being provided for the pin 56a. The trigger member 15 then can be actuated manually to release the trigger mechanism and cause the film strip 23 to be advanced a distance of one frame through the aperture plate member 24 and also release the clapper rod 61 for impingement on the plate 18p formed on the housing section 18 to make a noise like a shot from a gun. The lefthand end of the clapper rod 61 is journaled in notched webs 17q and 18q in the housing sections 17 and 18. A compression spring 67 bears against a collar portion 61d of the rod 61 to give it its striking force. The other end of the spring 67 bears against plate members 17r and 18r. The housing sections 17 and 18 are formed with trigger guard portions 17s and 18s molded integrally therewith. The housing section 17 has aligning and securing pins 17u (FIG. 6) which fit into hollow boss portions 18u (FIG. 7), and the pins 17u are coated with a solvent during assembly of the two housing sections to adhere the sections together.

While the trigger mechanism 20 is being actuated by the trigger member 15, assuming the plate 51 to be in its cocked position as shown in FIG. 9a, laterally extending pin 15d integral with the end 15c of the trigger travels up over upper corner 51d of cam ledge 51e and swings the plate 51 in a counterclockwise direction to bring the pin 51b into engagement with the lever 21 (FIG. 8). Then on movement of the trigger 15, the pin 15d on the curved end portion 15c of the arm 15b presses the plate 51 downwardly in a film strip feeding stroke, and the end portion 15c engages a ledge 62a of the latching arm 62 and presses the ledge 62a downwardly to move the lever 62 out of engagement with the clapper rod 61. This causes the clapper rod to strike the plate 18p to make a bang. Also, the arm 21 is moved downwardly by the pressure of the trigger member 15 pressing downwardly against the cam ledge 51e, and the downward movement of the arm 21 moves the pawl 22 downwardly in a retraction stroke and then releases the pawl 22 for a feed stroke. The film strip then is advanced one frame through the aperture plate member 24. The trigger member 15 then is released and the spring 52 raises the plate 51 and the arm 21 to their retracted positions and swings the trigger member 15 back to its normal position. However, at this time the plate 51 is held by the spring 52 in the overcenter position in which the pin 51b engages the arm 21, and in this position of the plate 51, the ledge 51e is above the path of the trigger member 15 so that the trigger member cannot actuate the trigger mechanism until it is again cocked by the bolt handle 19 and associated elements.

While the trigger mechanism 20 is single-action, obviously a double-action trigger mechanism may be substituted therefor, with or without the bolt mechanism for cocking the trigger and advancing the film. With the double-action trigger mechanism, the film strip may be fed by the trigger as often as desired without any cocking of the trigger mechanism by the bolt mechanism.

As illustrated in FIG. 10, the film 23 has three equally spaced perforations 23f per frame and, to initially frame the transparencies or frames 23a-23c correctly, a framing mechanism 80 (FIGS. 3, 4b and 11) is provided. The framing mechanism when set by the user, modifies the feeding action of the trigger mechanism to feed the film strip only one-third of a frame instead of its normal feed of a full frame. The framing mechanism includes a finger plate 82 accessible at the outside of the housing section 18 and slidable parallel to a slot 18x with connecting webs 84 slidable in the slot 18x and connecting the finger plate 82 to a triggering plate 86 composed of tough, resilient plastic material inside the housing. The plate 86 may be moved manually between a retracted

position shown in FIG. 4b and an operative or feed-stroke-modifying position shown in FIG. 11. When the plate 86 is in its retracted position, a pin 86a is completely out of the path of the arm 22e of the pawl 22. However, when the plate 86 is in its operative position, the pin 86a is in the path of relieved or wedging portion 22i of the pawl 22 during the retracting stroke and cams the pawl 22 in a counterclockwise direction to move the projection 22j out from under the actuator arm 21 to release the pawl 22 at a point at which only one-third of a frame of the film strip is fed upwardly by the pawl. During this premature or framing triggering of the pawl, a pin 21h of the arm 21 presses against a wedge or cam surface 86b to push the plate 86 with the pin 86a to the right to accelerate the triggering action, and then, after the triggering occurs, moves the plate 86 back to its retracted position by follow-through movement of the arm 21. A spring arm 86c is adapted to wedge under stop 18a to frictionally hold the plate 86 in its operative position after the plate 86 is moved to that position, and also resiliently retains the plate 86 in its retracted position after the plate 86 is moved to its retracted position. The slot 18x and web 84 (FIG. 3) limit movement of the retracting direction and a reinforcing rib 18z limits movement of the plate 86 to the left, as viewed in FIG. 11.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of the invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. In a picture gun,
  - a barrel portion,
  - a grip portion,
  - a manually operable trigger mechanism,
  - a viewing device positioned above the barrel portion,
  - a film,
  - feed means operable by the trigger mechanism for advancing the film,
  - bolt means for cocking the trigger mechanism and actuating the feed means,
  - and a trigger member adapted to trigger the trigger mechanism to again actuate the feed means.
2. The picture gun of claim 1 wherein the trigger mechanism includes
  - deactuating means operable by action of the trigger mechanism for preventing a second actuation of the trigger mechanism, and
  - means operable by the bolt means for rendering the deactuating means inoperable.
3. In a picture gun,
  - a hollow housing having at the front end thereof a barrel portion and also having at the rear end thereof a hollow handle portion projecting below the barrel portion and a hollow viewer portion projecting above the barrel portion and shaped to simulate a telescopic sight,
  - film strip guide means including an aperture plate positioned in the viewer portion of the housing,
  - a flexible endless film strip in the housing extending along the aperture plate and looped down into the hollow handle portion,
  - lens means forming an optical path with a portion of the film at the aperture plate,
  - the guide means including means deflecting a return portion of the flexible strip out of the optical path,
  - feed means for advancing the film strip along and past the aperture plate,
  - drive means for driving the feed means,
  - and manually operable trigger means mounted movably on the housing for actuating the drive means.
4. In a picture gun,
  - a hollow housing having at the front end thereof a barrel portion and also having at the rear end thereof

- a handle portion projecting below the barrel portion and a hollow viewer portion shaped as a telescopic sight and projecting above the barrel portion,
  - a film guide including an aperture plate having an aperture positioned in the viewer portion of the housing,
  - a flexible endless film in the housing extending along the aperture plate,
  - an eyepiece mounted at the rear of the viewer and optically aligned with the aperture,
  - light supplying means mounted at the front of the viewer and forming an optical path with the aperture and the eyepiece,
  - means for deflecting a return course of the flexible endless film out of the optical path,
  - feed means for advancing the film along and past the aperture,
  - drive means for driving the feed means,
  - and a manually operable trigger mounted movably on the housing for actuating the drive means.
5. In a picture gun,
    - a hollow housing having at the front end thereof a barrel portion and also having at the rear end thereof a handle portion and a hollow viewer portion projecting above the barrel portion and having an exterior shaped to simulate a telescopic sight,
    - an aperture plate having an aperture positioned in the viewer portion of the housing,
    - lens means in the viewer portion of the housing,
    - a flexible endless film strip wholly enclosed in the housing,
    - means for guiding a portion of the film strip past the aperture and deflecting a return portion of the film strip out of the path of the aperture,
    - feed means for advancing the film strip along and past the aperture,
    - drive means for driving the feed means,
    - and a manually operable trigger mounted movably on the housing for actuating the drive means.
  6. In a picture gun,
    - a hollow housing,
    - viewing means in the housing,
    - a film strip having a plurality of feed perforations per frame,
    - guide means in the housing for guiding the film strip through the viewing means,
    - pawl means for engaging one of the perforations to feed the film along the guide means,
    - feed means operable normally to actuate the pawl means to feed the strip one frame,
    - and means operable manually to actuate the feed means to feed the strip a fraction of one frame.
  7. In a picture gun,
    - a viewer,
    - a hollow housing,
    - an endless film strip having a plurality of frames and a plurality of feed perforations per frame,
    - guide means for guiding the film strip through the viewer,
    - pawl means reciprocable along the guide means,
    - spring means urging the pawl means in a feed direction,
    - trigger means normally operable to move the pawl means in a retracting stroke a first distance such as to provide a feed of the film strip the distance of one frame when the pawl means is released from the trigger means,
    - and framing means adapted to cause the trigger means to retract the pawl means a second distance which is less than said first distance to provide a feed of a fraction of the distance of one frame.
  8. In a picture gun,
    - a gun-like housing,
    - viewing means carried by the housing,
    - a strip film,
    - a spring pressed, cockable clapper,

trigger means in the housing for advancing the strip film past the viewing means and release the clapper, a bolt mechanism manually operable to cock the clapper and the trigger means, and a trigger member operable by the finger of the user to trigger the trigger means. 5

9. In a picture gun, a pair of longitudinal hollow plastic housing sections attached together to form a hollow housing having a handle portion, a barrel portion and a viewer portion at the rear of the barrel portion, 10

an eyepiece cemented in the rear of the viewer portion, an aperture plate member mounted in the housing in the rear portion of the barrel portion and the viewer portion and having an aperture aligned with the eyepiece and a retaining guide slot extending therealong, 15

a film strip slidable along the aperture plate, a pawl member having a pin slidable along the guide slot and also having a trigger portion, 20

an actuator arm having a trigger portion adapted to engage the trigger portion of the pawl and movable through a triggering stroke, 25

a plate having a cam ledge and pivotally mounted on the actuator arm and having a pair of stops permitting movement of the plate on the arm between a cocked position and a fired position, 30

overcenter spring means for holding the plate in the position to which the plate has been moved, bolt means operable manually from the exterior of the housing to move the plate to its cocked position and to move the actuator arm in a stroke retracting the pawl member and triggering the pawl member, spring pressed noise-making means movable to a cocked position by the bolt means,

latch means holding the noise-making means in cocked position, a trigger member operable by a finger and having a pin for engaging the cam ledge and pivoting the plate to a fired position and moving the actuator arm through the triggering stroke thereof and also having means for simultaneously therewith releasing the latching means, framing means movable from the exterior of the housing and including a slide member having a pin, means holding the pin of the framing means out of the path of the pawl member, and means for moving the slide member to a position in which the pin of the slide member cams the pawl member out of engagement with the actuator arm at a point prior to the normal disengagement thereof, the slide having a cam portion and the actuator arm having a pin adapted to engage the cam portion and move the slide to its retracted position and simultaneously accelerate the disengagement of the pawl member and the actuator arm.

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JEROME SCHNALL, *Primary Examiner.*RICHARD C. PINKHAM, LEONARD W. VARNER,  
*Examiners.*

**UNITED STATES PATENT OFFICE**  
**CERTIFICATE OF CORRECTION**

Patent No. 3,218,745

November 23, 1965

Kenneth E. Golden

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 14, for "23d" read -- 24d --; column 3, line 60, for "15c" read -- 51c --; line 72, for "arms" read -- arm --; column 4, line 4, for "related" read -- released --; column 5, line 23, after "the" insert -- plate 86 in the --; column 8, line 1, after "means", first occurrence, insert -- for --.

Signed and sealed this 20th day of September 1966.

**(SEAL)**

**Attest:**

**ERNEST W. SWIDER**

**Attesting Officer**

**EDWARD J. BRENNER**

**Commissioner of Patents**