

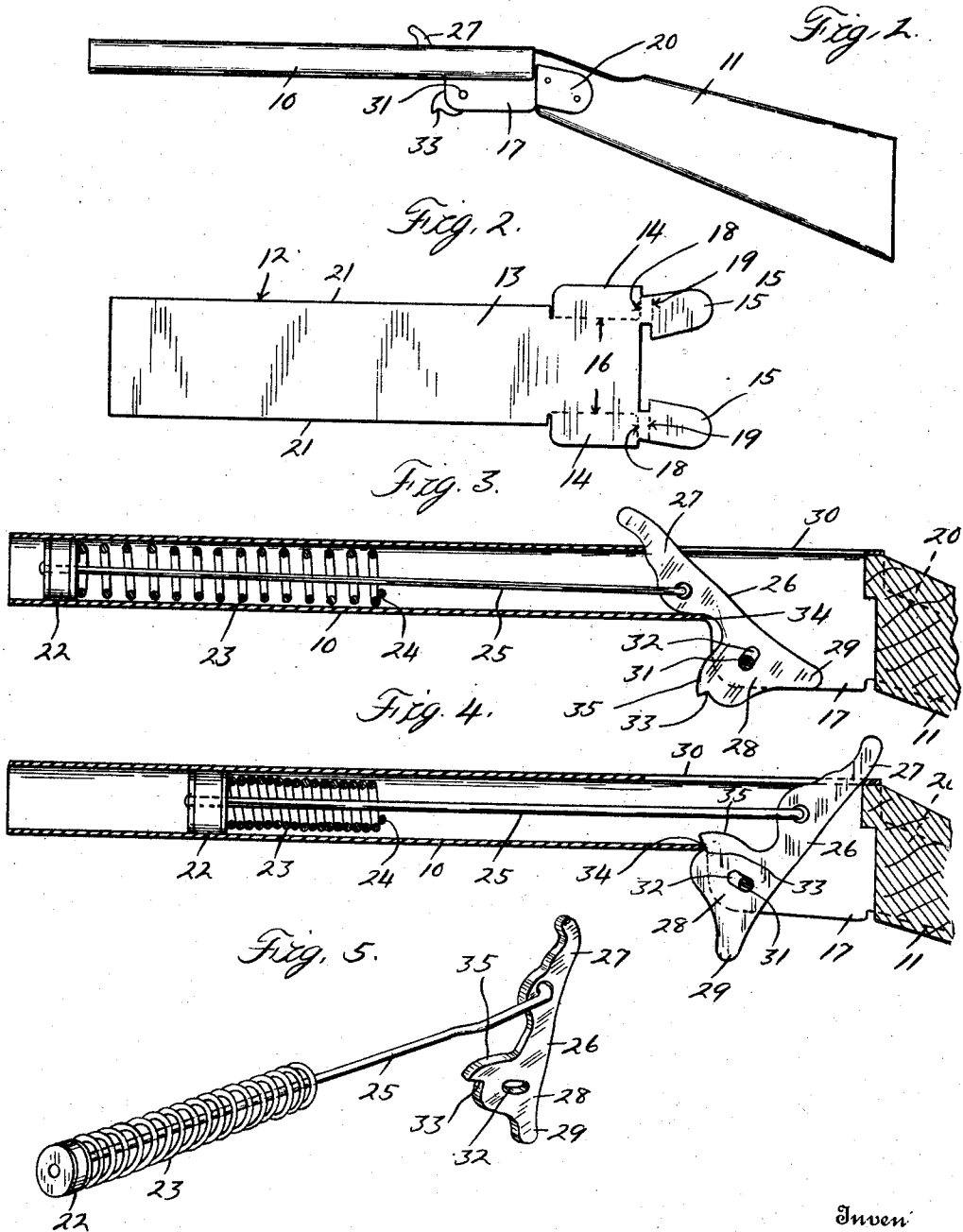
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AIR GUN

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AIR GUN

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This invention relates to air guns and has as one of its primary objects to cheapen the cost of manufacture and facilitate assembly by simplifying the construction of the several parts involved and by reducing the number of such parts to a minimum.

The invention provides for simplifying the method of manufacture and cheapening the cost of production by introducing a barrel construction which may be developed from a single piece of sheet metal. With this invention it is possible to cut and shape the barrel, trigger supporting flanges and stock engaging ears from a flat blank, thus providing a one piece integral structure wherein the only fastening means necessary is along the longitudinal seam of the barrel.

Another novel feature of construction of this invention which contributes materially to the reduction in cost of manufacture is a combined spring cocking lever and trigger which may be conveniently formed from a single piece of material. This element affords means for compressing the plunger operating spring, means for holding the spring in compressed or cocked condition and a trigger for releasing the spring.

The several objects, advantages and novel details of construction of this invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings, wherein:

Figure 1 is an elevational view of an air gun constructed in accordance with this invention.

Figure 2 is a plan view of the blank from which the barrel structure is developed.

Figure 3 is an enlarged longitudinal sectional view through the barrel showing the trigger and spring compressing element in released position.

Figure 4 is a similar view showing these parts in cocked position, and

Figure 5 is a separate perspective view of certain parts of the air gun.

Referring now more particularly to the drawings wherein like reference characters indicate like parts, it will be noted that in

Figure 1 there is illustrated an air gun consisting of a barrel 10 and a stock 11. The barrel structure is developed from a blank 12, see particularly Figure 2, of substantially rectangular shape, which blank comprises a portion 13 which is bent or rolled to form the barrel 10, with portions 14 and with portions 15. The portions 14 are bent along the dotted lines 16 to provide downwardly extending spaced flanges or ears 17 adapted to pivotally support the trigger, yet to be referred to. The blank is further bent laterally outwardly along the dotted lines 18 and then rearwardly along the dotted lines 19 so that the portions 15 extend rearwardly in spaced parallel relation to form the stock embracing ears 20. The edges 21 of the portion 13 of the blank are arranged in overlapping relation and may be spot-welded at suitable intervals. Thus an integral structure including the tubular barrel 10, trigger supporting ears 17 and stock engaging ears 20 is developed from a single blank to produce a unitary structure involving the use of securing means only along the seam of the barrel.

Arranged within the barrel 10 is a plunger 22 normally urged to the position illustrated in Figure 3 by means of a spring 23 which engages at its rear end a stop pin 24 fixed within the barrel. The plunger 22 is connected by means of a rod 25 to an element 26 which constitutes a spring compressing or cocking lever and a trigger. The upper end 27 constitutes the cocking lever and the lower end 28 the trigger proper which is provided with a finger portion 29. The lever portion 27 extends upwardly through a slot 30 formed in the barrel while the trigger portion is located between the trigger supporting ears 17. The element 26 is mounted for both a pivotal and shiftable movement by means of a pin and slot connection which includes a pin 31 extending between the ears 17 and a slot 32 formed in the element 26. The element 26 is provided with a sear portion which comprises a notch or shoulder 33 which is adapted to engage the shoulder or edge 34 of the gun barrel. Arranged immediately adjacent the notch 33 is a cam surface 35 which during

the cocking movement of the element is adapted to engage the shoulder 34 and shift the element with reference to its pivot pin 31, in a rearward direction, so that the notch 33 may be brought into registration with the shoulder 34 to permit an engagement between these parts which holds the element 26 in cocked position. This position of the parts is illustrated in Figure 4.

In practice, in cocking the gun, the upper end of lever 27 is grasped and the element 26 swung rearwardly about its pivot 31 against the action of plunger spring 23. As the element 26 is swung rearwardly the element remains in its forwardmost position, that is with the pin 31 located in the end of slot 32 nearest the gun stock. However during this swinging movement of the cocking lever the cam surface 35 engages the shoulder 34 and shifts the element 26 rearwardly during which time the slot 32 moves until the pin is adjacent the front end thereof. Thereafter, when the cam surface 35 has cleared the edge 34 the pressure of spring 23 moves the element 26 bodily forwardly to cause an engagement between the sear portion or notch 33 and the edge 34. The parts are thereupon in the position illustrated in Figure 4 in which the plunger spring 23 is compressed and the gun is cocked. In releasing the spring 23 the trigger portion of the element 26 is engaged by the finger portion 29 to shift the element 26 rearwardly sufficiently to move the notch 33 out of engagement with the shoulder 34 whereupon the plunger 22 is released and the gun discharged.

From the foregoing it will be apparent that the present invention not only provides a structure which may be manufactured with facility but one in which the cost of manufacture is reduced to a minimum. The cost of production and of assembly is materially reduced by reason of the fact that the air gun structure herein described comprises a minimum number of parts.

In view of the obvious changes which may be resorted to without departing from the spirit and scope of this invention, reservation is made to make such changes in the details of construction as may come within the purview of the accompanying claims.

What I claim as my invention is:

1. In an air gun, the combination with a barrel and a plunger and spring therein, of an element constituting a spring compressing lever and trigger, means for loosely pivotally mounting said element and a notch in said element engageable with the barrel for holding the parts in cocked position.

2. In an air gun, a barrel, a spring actuated plunger therein, a combined trigger and cocking lever, means loosely pivotally supporting said trigger lever, means connecting said trigger lever to said plunger and a notch on said trigger lever engageable with the edge of the

barrel when said gun is cocked, said trigger lever being shifted during cocking against the action of the plunger spring to permit said notch to engage said barrel edge.

3. In an air gun, a barrel, a spring actuated plunger therein, an element constituting a trigger and cocking lever, means for loosely pivotally supporting said element, a sear portion on said element engageable with a shoulder on said barrel, said element partaking of a pivotal and shifting movement when moved to cocked position whereby said sear portion is caused to engage said shoulder.

4. In an air gun, the combination with a barrel and a spring and plunger therein, of an element constituting a spring compressing lever and trigger, a pin and slot means for pivotally shiftably mounting said element, a sear portion on said element engageable with a shoulder on said barrel and a cam adjacent said sear portion, said element partaking of a pivotal movement during the compression of the spring, whereby said cam engages said shoulder to shift said element against the action of said spring to cause said sear portion to engage said shoulder.

5. In an air gun, a barrel, a plunger and spring therein, a combined trigger and spring cocking element, a pin and slot means for pivotally supporting said element and permitting a shifting thereof, a notch formed in said element engageable with the adjacent edge of said barrel, a cam adjacent said notch and means connecting said element to said plunger whereby said gun may be cocked by swinging said element about its pivot against the action of said spring, said cam engaging said barrel edge to shift said element to permit said notch to come into engagement with said barrel edge.

6. In an air gun, the combination with a barrel and a spring actuated plunger therein, of an element constituting a spring compressing lever and trigger, means for shiftably supporting said element, and a sear portion on said element engageable with the barrel.

7. In an air gun, a barrel, a spring actuated plunger therein, a combined trigger and spring compressing element, means for pivotally shiftably mounting said element, a sear portion on said element, and means associated with said element for shifting the same to permit the said sear portion to come into engagement with said barrel.

8. In an air gun, a barrel, a spring actuated plunger therein, an element constituting a combined trigger cocking lever, means shiftably supporting the element, and a sear formed on said element operable in the cocked position of the lever to engage a fixed part of the gun.

9. In an air gun the combination with a barrel having a plunger and a spring therein, of a combined spring compressing lever and trigger shiftably supported upon the bar-

rel and connected to the plunger for compressing the spring, said lever having a sear portion and a cammed surface automatically operable upon movement of the lever to compress the spring to engage a part of the barrel and cam the sear portion aforesaid into engagement with the barrel for holding the spring in compressed position.

In testimony whereof I affix my signature.

ERNEST S. ROE.