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ALSO LICENSED  
IN OKLAHOMA

March 22, 1991



Jim Stickles  
Remington Firearms  
14 Hoefler Avenue  
Ilion, NY 13357

Dear Mr. Stickles:

As I have advised you, Allen Cheek and I represent Evelyn Parks in a lawsuit against Darwin Lundeen.

There was an accidental discharge of a Remington Model 700 300 Winchester Magnum.

I told you the serial number on this rifle was 6871646.

You looked up this serial number and advised me that this rifle was sold to Sportsman Supply, Billings, Montana, and shipped on July 1, 1975.

In opposition to a motion for summary judgment that we filed on liability, the Defendant filed various documents including an affidavit of Robert J. Bauman and a copy of that affidavit with all attachments is attached hereto.

There was a videotape that came with the Robert J. Bauman affidavit and that videotape shows John T. Butters operating a Remington rifle.

I think what the videotape shows is Butters being able to cause the rifle to discharge on the release of the safety from the "safe" to the "fire" position.

The first part of the videotape is animated and shows the trigger mechanism.

What I would like to have, and I will have to hire an artist to make such a drawing if you do not already have such a drawing--I would like to demonstrate what it looks like when you put three rounds in the magazine and you have the rifle loaded with three rounds in the magazine and none in the chamber; and

PLAINTIFF'S  
EXHIBIT

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then what it looks like when you operate the bolt and have two rounds in the magazine and one in the chamber. In other words, this would be a drawing that would show the magazine and show the spring that would keep the ammunition loaded in the magazine pushed up against the bolt.

In other words, this drawing would be to show the jury the meanings of the words: magazine, trigger mechanism, safety, and chamber so that when we are discussing the case it will mean something to the jury when we say that "three rounds were placed in the magazine and none in the chamber." Then with a cutaway drawing the jury would be able to quickly understand how the rifle was loaded.

Also, can you provide me with any information with reference to lawsuits that have been filed concerning alleged malfunction of the Remington 700 rifle? You will note that Bauman makes the statement that there have been many such lawsuits filed.

Also, a fact in our case is that Lundeen, the Defendant, contends that the safety was always in the "on" position.

Have you ever been sued on an alleged malfunction of a Remington 700 rifle wherein the Remington 700 rifle malfunctioned while the safety was on and remained in the "on safe" position?

I have talked to two plaintiffs' attorneys who have pursued lawsuits against Remington and they have advised me, and based upon my own study, no one has ever contended that a Remington 700 rifle malfunctioned or discharged while the safety was on and remained on the "safe" position.

Yours very truly,

JONES, GILBREATH, JACKSON & MOLL

By

*E. C. Gilbreath*

E. C. Gilbreath

ECG/rh  
cc: Allen Cheek

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IN THE SUPERIOR COURT FOR THE STATE OF ALASKA

FOURTH JUDICIAL DISTRICT

EVELYN PARKS, individually and  
the Natural Mother of and Next  
Friend of JESSICA R. PARKS,  
AND JESSICA R. PARKS,

Plaintiff,

vs.

DARWIN LUNDEEN, JOHN DOES I - V  
and XYZ CORPORATIONS VI-XX,

Defendants.

Case No. 4FA-89-1452 Civil  
(ABA No. 7410063)

AFFIDAVIT OF ROBERT J. BAUMAN

STATE OF ALASKA

FOURTH JUDICIAL DISTRICT

ss.

ROBERT J. BAUMAN, having been first duly sworn, does  
hereby depose and state as follows:

1. That I over the age of 18 years of age and am in  
every way competent to testify in the above entitled matter.

2. That I have personal knowledge of the facts  
contained herein.

3. That if called to testify in open court, my  
testimony would be the same as stated herein.

4. That I have been involved in the gunsmith trade for  
over 35 years.

5. That I own and operate Fairbanks Gun and Repair,  
located in the Regency Court Mall, 59 College Road, Suite 104,  
Fairbanks, Alaska.

HUGHES THORPNESS  
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6. That I am familiar with all Remington bolt action rifles that have been manufactured in 300 Winchester magnum caliber, their operation, and their operational malfunctions.

7. A common malfunction associated with these firearms is a malfunction which is possible because of the design of their safety mechanism.

8. These rifles are manufactured with a sear-blocker type safety mechanism.

9. Because the firing pin/striker is not physically prevented from falling, this type of safety cannot prevent impact/jarring malfunctions which may result in the discharge of the firearm. This can occur without any actual defect in the mechanism. Additionally, this malfunction may occur to any of these firearms without any physical defect being present and without any identifiable change in the mechanism or operation of the firearm either prior to or subsequent to such a malfunction/discharge.

10. Specifically, this malfunction is possible because the safety mechanism, when engaged, merely prevents the sear from falling as opposed to mechanically preventing the firearm's striker/firing pin from falling.

11. The technical evaluation of the failure modes of the trigger mechanism of the Remington bolt action rifle is explained in detail in a failure mode Engineering Evaluation which was done by Engineering Consultants, Inc., signed by John T. Butter, P.E., and attached hereto. This failure mode

HUGHES THORNSNESS  
JAMES POWELL & BROWN  
ATTORNEYS AT LAW  
250 UNIVERSITY AVENUE  
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BERKELEY, ALABAMA 35703  
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SUBSCRIBED AND SWORN TO before me this 4<sup>th</sup> day of  
March, 1991.

(SEAL)

LEL:SMO  
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Grace E. Lorian  
Notary Public in and for Alaska  
My Commission Expires: 3/1/91

HUGHES THORSNESS  
DANIEL POWELL & BAUMANN  
ATTORNEYS AT LAW  
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Parks v. Lundeen  
AFFIDAVIT OF ROBERT J. BAUMAN  
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Case No. 4FA-89-1452 Civil

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ENGINEERING EVALUATION

FAILURE MODES OF REMINGTON BOLT ACTION RIFLES

UTILIZING FIRE CONTROL SYSTEMS BUILT UNDER

U.S. PATENT NUMBER 2,514,981

ECI FILE NO. 6477

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# Engineering Consultants

INC 1856 TOWNHURST DRIVE SUITE G • HOUSTON, TEXAS 77043 • (713) 466-7415

September 22, 1988

Re: Failure Modes of Remington Bolt Action Rifles  
Utilizing Fire Control Systems Built Under  
U.S. Patent Number 2,514,981  
ECI File No. 6477

## Abstract:

The Remington Model 700 and 600 type triggers built under the Remington/Walker patent have a basic design defect rooted in the susceptibility of their resiliently mounted connector pieces to either marginally engage the sear or to fail to engage it at all. Such a condition may result in inadvertent discharge of a loaded rifle upon closure or upon opening of its bolt or upon placement of its safety lever to the "fire" position. This often intermittent malfunction, especially when coupled with a safety design which forces the user to arm the rifle before unloading the chamber, presents an unreasonable hazard which outweighs the utility of the fire control mechanism in which it is employed. Due to its unusual susceptibility to intermittent and inadvertent release, the Remington

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FOI file No. 6477

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M700 and 600 type trigger and fire control system is unsuitable for sale to and use by the general public in a hunting rifle.

Dear Mr. Miller:

In accordance with your request, the following report tabulates and comments upon the various modes of inadvertent discharge that are experienced by Remington bolt action rifles Model 721, 722, 725, 700, Sportsman 78, Seven, 40X, 600, 660, Mohawk 600 and the XP100 bolt action pistol.

All of these firearms utilize a common design of trigger mechanism and safety built under the U.S. patent number 2,514,981 issued to Phillip Haskell & Merle H. Walker on 11 July 1950 and assigned to the Remington Arms Co. The unique feature of this design which distinguishes it from all other commercially available bolt action trigger mechanisms is an independently acting resiliently mounted part called a trigger connector. This part is free to move with respect to the pivoted trigger body and is intended to be suddenly and precipitously moved forward by forces exerted by the main spring on the firing pin assembly and sear when the trigger is pulled to fire the gun. This motion of the connector releases the sear piece so that the sear no longer obstructs the forward motion of the firing pin which is then free to travel forward and forcefully strike and ignite the primer of a chambered cartridge. The connector is an intermediate part which

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provides a mechanical "avalanche" effect which in a properly regulated and adjusted Remington/Walker patent trigger yields an advantageously crisp trigger action.

The disadvantages of the Remington/Walker patent design are mechanical complexity and sensitivity to environmental influences and conditions of adjustment and maintenance. These conditions affect the moveable and resiliently mounted connector piece so that it may intermittently fail to properly support the sear. The design concept also forces adherence to rigorous standards of manufacturing dimensional quality control which are impossible to maintain with zero defects in actual practice. The necessity of enclosing the moving parts of the fire control mechanism in a structure with minimal clearances between moving and fixed parts likewise invites undesirable and critical interferences arising from the presence of minute amounts of debris and deteriorated lubricants and cleaning compounds.

All of the inadvertent discharge modes of the subject series of Remington bolt action rifles have their basis in the failure of the connector to securely capture the sear. The susceptibility of this small yet crucial member to critical displacement creates a condition which in my opinion renders trigger mechanisms using it unsuitable for use in hunting rifles sold for use by the general public. If, in addition, the safety mechanism forces the user to unload the rifle with

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the safety in the "fire" mode, an additional measure of hazard by exposure to inadvertent discharge is created.

Adequate information concerning care, cleaning and adjustment of trigger mechanisms are vital to safe use of the firearms which employ them. Unless gunsmiths and firearms owners are in possession of sufficient data to enable them to fully understand the hazards presented by this particular design they are in no position to identify and avoid dangers contingent upon a mechanism malfunction.

With the foregoing provided as background data, the following modes of arriving at the failure of the connector to securely capture or engage the sear are offered:

Mode 1

Connector fails to engage the sear with adequate overlap creating a condition of marginal engagement between the sear and the trigger connector.

Cause(s)

1. Connector or trigger body held forward by field dirt, congealed lubricant, firing residues, or manufacturing debris.
2. Retarded trigger body return motion caused by interference between moving parts and fixed parts of the trigger assembly due to dimensional defects.
3. Inadequate trigger return action caused by improper preloading of trigger pull spring due to incorrect adjustment



1. Connector or trigger body held forward by field dirt, congealed lubricant, firing residues or manufacturing debris.

2. Retarded trigger body motion caused by interference between moving parts and fixed parts of the trigger assembly due to dimensional defects.

3. Inadequate trigger return action caused by improper preloading of trigger pull spring due to incorrect adjustment of trigger pull adjustment screw or deterioration of trigger spring action.

4. Interference between the tip of the trigger over-travel screw and the hole in the front face of the connector resulting in the failure of the connector to return to a position of full engagement beneath the sear.

5. Displacement of trigger and connector with the safety in a mid position resulting in less sear lift than that necessary to allow the free return of the connector so that the connector fails to properly reengage the sear. This maneuver is called "tricking" by Remington.

6. Dimensional mismatch caused by manufacturing defects allowing a vertical float on the trigger body of the connector in excess of the sear lift provided by the safety mechanism creating a condition enabling entrapment of the connector in the fire notch of sear. This condition is detectable without disassembly using the test Remington calls the "screwdriver test" in which the trigger is pulled with the safety in the

"safe" position and then released while maintaining an upward force on the lower limb of the connector which is visible through the trigger guard. The upward force is removed and if the firing pin then falls upon release of the safety to the "fire" position, a critical dimensional mismatch is shown to be present in the mechanism.

Result(s)

If the entrapment of the connector occurs with the safety in the "fire" position and the bolt open, a "soft" follow/down will occur as the bolt is closed and an inadvertent discharge is unlikely.

If the entrapment of the connector occurs with the rifle cocked and the bolt closed on a loaded chamber with the safety engaged, the only thing preventing release of the sear and the forward fall of the firing pin is the safety lug on the safety lever engaging the safety cam on the sear. When this support for the sear is removed by placing the safety to the "fire" position, as it must be to unload a rifle fitted with a bolt lock or to fire the rifle, the rifle will suffer an inadvertent discharge. This condition is called an "FSR" or a "trick" by Remington depending upon the events leading up to improper connector and sear engagement. All of these conditions result from the failure of the connector to engage the sear at all.

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It is obvious that whatever name is given to the occurrence, the inadvertent discharge of the firearm involved results from an improper engagement of the trigger connector with the sear, a condition avoidable by the elimination of this design-induced susceptibility to malfunction.

Reference to the text of U.S. Patent number 2,514,981 indicates that the applicants for the patent were aware of the possibilities for malfunction of triggers built using those design features described in the patent. Column 1, lines 22 through 28 read:

"The value of any safety is proportional to the positiveness of its action. To this end we have found it to be essential that an inadvertent operation of the trigger while the safety is in "safe" will not condition the arm to fire upon release of the safety." Such a failure of the safety occurs during the maneuver called by Remington "tricking".

Lines 33 through 41 of Column 1 read:

"It is an object of our invention to provide a fire control having a safety which operates by positively moving the firing pin rearwardly out of contact with the sear and thereby releasably retaining it. In this way should the trigger be operated while the safety is engaged, the trigger and sear springs will immediately reposition the mechanism to catch the firing pin upon release of the safety." The failure

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meet this claim occurs whenever and for whatever reason that the connector does not fully engage the sear.

In Column 4, the relationship of the trigger, connector and sear during the firing cycle are described and the results of their interaction are characterized in lines 50 through 62:

"This allows a clean crisp let-off closely approaching the target shooter's ideal without requiring any additional trigger movement after release is first instigated. These advantages of freedom from creep or slap with the short light trigger pull, crisp let-off and short lock time characteristic of negative angle sears have been achieved in a construction which is absolutely safe in the hands of the hunter or target shooter and rugged enough to remain so in spite of the abuse and neglect which are often heaped upon sporting arms."

Anticipation of adjustment and maintenance problems arising from conditions known to exist during field use of firearms is clearly enunciated.

These statements clearly show that the patent applicants appreciated not only the effect of care, maintenance and environmental influences upon the subject design of fire control but were aware that malfunction of critical members of the assembly could create a significant hazard. Subsequent data from the field in the form of gun examination reports, gunsmith interviews by Remington representatives and internal

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data from final assembly and gallery proof testing provides strong indications that no matter what claims were made in the patent as issued, its realization was falling short of its intent and that Remington had hard data to support a rigorous and effective remedial program of action.

Remington through sworn statements of its corporate representatives denies the existence of a basic design defect involving the use of its unique trigger connector based design, although large amounts of engineering data clearly indicate that that feature is involved in virtually all inadvertent discharges of Remington firearms using triggers built under the Remington/Walker patent. Failure to identify and correct the basic defects of design resulting in inadvertent discharge of the subject Remington firearms are unexplainable from a technical standpoint and are failures of quality control at the engineering design level.

Very truly yours,

ENGINEERING CONSULTANTS, INC.

  
John T. Butters, P.E.

JTB/jh

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LIMITED DISTRIBUTION

PRODUCT SAFETY SUBCOMMITTEE MEETING  
JANUARY 2, 1979

PRESENT:

SUBCOMMITTEE

OTHER

E. F. BARRETT, CHAIRMAN  
J. G. WILLIAMS  
E. HOOTON, JR.  
R. A. PARTNOY

R. B. SPERLING, ACTING SECRETARY

SAFE GUN HANDLING

It was reported to the Committee that in 1975, due to what we learned from a quality audit on the Mohawk 600, Remington instituted new inspection procedures for all center fire bolt action rifles which were designed to catch a gun capable of being "tricked" into firing when the safety lever is released from the "safe" position. "Tricked" in this context means, safety lever placed in between "safe" and "fire" positions, trigger is then pulled, and the safety lever is subsequently moved to the "fire" position and the gun discharges. The inspection procedures involve the following:

- (1) A visual check for adequate clearance between the sear and the connector.
- (2) Measurement of this clearance by use of a .005 shim.
- (3) Attempting to trick the gun--three times in assembly, three times in gallery and three times at final inspection.

PRODUCT SAFETY  
SUBCOMMITTEE MEETING

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In addition to the above inspection procedures, Remington also changed the trigger assembly for the Model 600 family of guns by adopting Model 700 design features. Changes to the 600 included:

1. Going from a folded housing to an assembly consisting of side plates held together by rivets and spacer block.
2. Providing more lift to the sear.

No such changes were made in the design of the Model 700 because it already had those features.

Remington is confident because of the checks instituted in 1975, that bolt action rifles made during and after 1975 will not trick. Since June 1978, 500 post-1975 Model 700's have been returned to Ilion for repair for various reasons. Starting in June, Remington conducted a quality audit on these returned guns and none could be tricked.

During this same period (June 1978 to the present), two hundred pre-1975 Model 700's were returned to Ilion for repair, and it was found that two could be tricked (one because of insufficient clearance between sear and connector, and one because of a warped connector). Based on this sample, about 1% of the pre-1975 Model 700's in the field may be subject to tricking. There are about 2,000,000 pre-1975 Remington guns in the field with the Model 700 trigger assembly. (By comparison, it is noted that the 1975 quality audit indicated about 50% of the Model 600 family of guns in the field were susceptible to

PRODUCT SAFETY  
SUBCOMMITTEE MEETING

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tricking.)

In addition to the above sample of 700's, 19 Model 700's have been returned to Ilion in response to the Model 600 recall with the complaint that the gun will fire when the safety lever is moved to the "fire" position. Remington found that only one of those guns could be tricked, the cause being insufficient clearance. Three other guns did fire with the safety being moved, but for reasons associated with owner alteration of the product. In one instance, an owner was about to return a gun for accidental discharge upon release of the safety; but just before sending the gun, the owner discovered that he was inadvertently pulling the trigger as he released the safety. It is suspected that this was also the case with the remaining 15 guns, since they were found to be in proper operating condition.

Remington has run quality audits on competitor bolt action rifles and has found that a large percentage of competitor models can be tricked. This includes some famous guns, such as the "Springfield" 30 caliber rifle, which was used in quantity in both World Wars.

The Subcommittee discussed the issue of tricking, as well as other causes of accidental discharge. It was decided that tricking, along with problems such as owner adjustment of the trigger engagement screw or the trigger adjustment screw, finger on the trigger when the safety is released, and trigger assembly alterations, are really problems more associated with abnormal use or misuse of the product rather than indication of a defective

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product. Consequently, a notice warning or a series of warnings against abnormal use or misuse, and highlighting safer gun handling procedures, is the most direct solution to the problem of accidental discharge.

The Subcommittee considered the possibility of recalling all pre-1975 Remington center fire bolt action rifles, many of which have been in the hands of the public well over several decades.

The Subcommittee decided against a recall for the following reasons:

1. Based on Remington's sample, only 1% of the pre-1975 Model 700 family of guns out in the field which number about 2,000,000 can be tricked. That would mean the recall would have to gather 2,000,000 guns just to find 20,000 that are susceptible to this condition.
2. An attempt to recall all bolt action rifles would undercut the message we plan to communicate to the public concerning proper gun handling. It would indicate that the answer to accidental discharge can be found entirely within the gun, when in reality only proper gun handling can eliminate injuries resulting from such occurrences.

The Subcommittee decided to recommend that an informational warning concerning accidental firing and safe gun handling be prepared and effectively communicated to the gun handling public. The Marketing, Legal and Public Relations Departments were to

PRODUCT SAFETY  
SUBCOMMITTEE MEETING

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coordinate their efforts, with possible help from outside consultants, in preparing such a notice.

Further meetings would be held to ensure that this informational program was launched effectively and expeditiously.

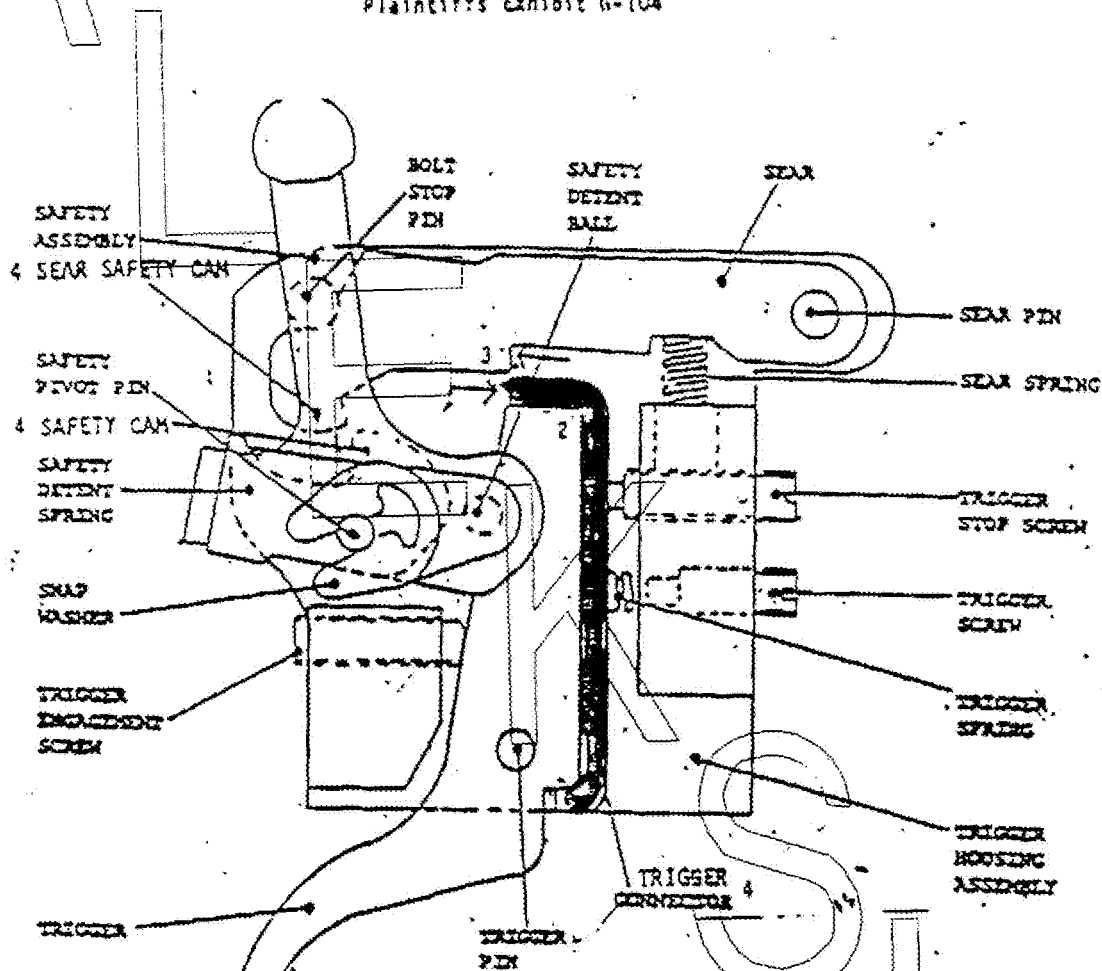
(Secretary's Note: The President approved these recommendations on January 2, 1979.)

R. B. Sperling  
Acting Secretary

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Appellees Addendum 6  
Plaintiffs Exhibit G-104



Appellees Addendum 6  
Plaintiffs' Exhibit G-104

1. The safety cam rotates counterclockwise contacting the sear safety cam and lifting the sear from the trigger connector when the safety lever is moved forward to the on safe position. The sear lift in the Levy rifle was .007 inches (T. 7/35).
2. This drawing does not show the vertical clearance between the trigger and trigger connector which was .010 inches in the Levy rifle (T. 7/38).
3. The horizontal interference between the trigger connector and sear which was up to .003 (.010 -.007) inches in the Levy rifle prevents the trigger connector from returning under the sear to provide support when the safety is moved to the off position (T. 8/52).
4. Appellees have added labels to G-104 in order to pictorially explain the function of the Walker fire control system and FSRs to the Court.